

**Document Editor**

# **Xerox ViewPoint**

## **Document Editor Reference**

**4**

**Volume 4**

**XEROX**

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# **Xerox ViewPoint**

## **Document Editor Reference volume 4**

**VP Document Editor**



Xerox Corporation  
Product Education  
701 S. Aviation Boulevard  
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# Introduction

This volume is part of the *VP Series Reference Library*, which is the encyclopedia for ViewPoint software. This library provides the most complete source of information on ViewPoint and VP Series applications for your 6085 Professional Computer System or 8010 Information System.

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## Before you use this volume

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Several separate volumes make up the *VP Series Reference Library*. Each volume provides information about a general category of applications, such as graphics, terminal emulation, or file conversion.

Before you refer to any VP Series reference application volume, you should become familiar with the following “core” documentation:

- *ViewPoint QuickStart Training*. Provides training and exercises for basic workstation operations as well as for creating, editing, printing, mailing, and filing documents.
- *General User Reference*. Describes the basic operations common to all ViewPoint and VP Series application software.
- *Document Editor Reference* volume 3. Provides complete information on creating and editing a document.

By mastering the ViewPoint and Document Editor basics, you will soon be able to use other VP Series applications to perform important tasks quickly and confidently.

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## About this volume

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This volume contains the following:

- Part 1 Document Editor tools
- Part 2 Tables
- Part 3 Fields and fill-in rules
- Part 4 Mail Merge

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## How chapters are organized

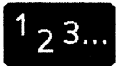
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Reference material is rarely read through from cover to cover. Instead, you use it to look up specific information from time to time, much as you would use an encyclopedia.

To help you locate information, the major topics of most chapters are organized as follows:



- A key concepts section describes the principal elements of the application or feature. The key graphic illustrated at the left marks the beginning of such sections.
- A description of property sheets, option sheets, and windows provides detailed information about the properties and options related to the application.



- A procedures section provides step-by-step information on how to use the application. The 1-2-3 graphic illustrated at the left marks the beginning of such sections.

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## Documentation conventions

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The *VP Series Reference Library* uses the following conventions:

- Square brackets. Names of commands and property and option choices that you select with the mouse appear enclosed within brackets; for example, the [Close] command.

- Angle brackets. The names of workstation keys and alternate function keys are enclosed within angle brackets; for example, the <OPEN> key and the <PROP'S> key. This convention applies to alphabetic and numeric keys. It does not apply to words used to describe keys marked with arrow symbols, such as the tab key.
- Italics. Glossary words, VP application names, volume names, and the library name appear in *italics*.
- Bold. Names of properties, options, selections in the User Profile, information you must type, notes, cautions, and warnings appear in **bold**.

As often as possible, graphic images (such as pointer arrows) are printed in the text as they appear on the screen or on the keyboard.

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## Hardware and software requirements

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The application described in this volume runs on the 6085 Professional Computer System and the 8010 Information System.

The following 2.0 software must be installed, enabled, and running on the workstation:

- *Xerox ViewPoint*
- *VP NetCom, VP RemoteCom, or VP Standalone*
- *VP Document Editor*

For the autohyphenation feature, you must also install, enable, and run the following:

- *VP US English Hyphenation* or the appropriate hyphenation application for your document language

The fill-in rule programming language that is included in the *VP Document Editor* is a subset of the CUSP programming language.

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## Related documentation

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The following training materials are recommended reading. You should be familiar with their contents before using Document Editor tools, tables, and fields and fill-in rules:

- *VP Document Editor: Document Creation Training*
- *VP Document Editor: Styles Training*
- *VP Document Editor: Tables Training*
- *VP Document Editor: Forms Training*
- *VP Document Editor: Fill-in Rules Training*

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## Information for VP CUSP Button programmers

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If you are writing a CUSP program and want the program to refer to Document Editor document and book icons, use the following as the icon types (case does not matter):

- Document
- Book

CUSP currently cannot manipulate the Mail Merge icon.

*Document Editor Reference* volume 4 provides reference information about the *VP Document Editor* application. The concepts and procedures in this volume apply to both the 6085 Professional Computer System and the 8010 Information System. This volume supplements the information provided in *Document Editor Reference* volume 3 in this library.

This volume provides information in four parts. Part 1 describes how to use Document Editor tools, including Find, autohyphenation, redlining, Define/Expand, linked text frames, styles, and books. Part 2 describes how to create and modify tables. Part 3 explains how to work with fields and fill-in rules. Part 4 discusses the Mail Merge feature.

Refer to *Document Editor Reference* volume 3 for information about document creation, text editing, character properties, paragraph properties, tab properties, page format, pagination, and frames.

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## Part 1: Document Editor tools

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The Document Editor offers several tools that enable you to increase your productivity during the document preparation cycle.

## Find

---

The Find feature enables you to search through a document quickly and locate a character, word, phrase, or property. To find text or other objects, you use the Find option sheet or the [Go to] commands in the content auxiliary menu.

You can also use the Find feature to change text that appears several places in a document. Find even lets you use wildcard characters as substitutes for other characters. This capability is useful for finding variations of a character sequence or for finding text when you are uncertain of its exact spelling or form.

The content auxiliary menu also includes [Go to] commands that locate items such as the next field, the next break character, the next footnote reference, the next index object, and the next page format character.

## Autohyphenation

---

The autohyphenation feature uses a hyphenation paragraph property to supplement the other hyphenation capabilities of the Document Editor. With the autohyphenation feature, text hyphenates automatically as you type. Then you can examine how the Document Editor hyphenates a word, and create your own hyphenation dictionary if necessary.

Autohyphenation is especially useful in reducing white space between words in justified paragraphs. An autohyphen is inserted in a word when there is little remaining space at the end of the line and the word can be divided between syllables.

## Redlining

The redlining feature lets you record the changes you make to a document. Redlining adds special markings to new text you add to a document. It also strikes through, but does not immediately delete, text that you select for deletion.

You can print the redlined document and have a record of the changes you made to it. When you need a final copy of the document, a single command clears all markings and deletes the text you marked for deletion.

The redlining feature marks new text with double underlining so you can readily distinguish additions from the original text (Figure 1-1). By printing copies at various times during the revision of a document, you can make a record of when additions or deletions were made.

Figure 1-1 Example of redlined text

This paragraph illustrates revised text marked with double underlines, the default marking.

**This paragraph illustrates revised text marked bold and with double underlines.**

***This paragraph illustrates revised text marked with Bold Italics.***

***This paragraph illustrates revised text marked with Bold Italics and Underlined.***

***This paragraph illustrates revised text marked with Bold Italics and Double Underlines.***



## Define/Expand

---

The Define/Expand feature simplifies how you insert frequently used information in your documents. You can define your own abbreviations for words, phrases, and other expressions. You store them in an expansion dictionary.

The definitions that you store can contain characters entered from the standard keyboard or the alternate keyboards. Therefore, you can create and store text as well as graphics, tables, equations, and other objects.

When you need to enter frequently used information, you type its abbreviation and then press the <DEFINE/EXPAND> key. The Document Editor replaces the abbreviation with the full expression.

## Linked text frames

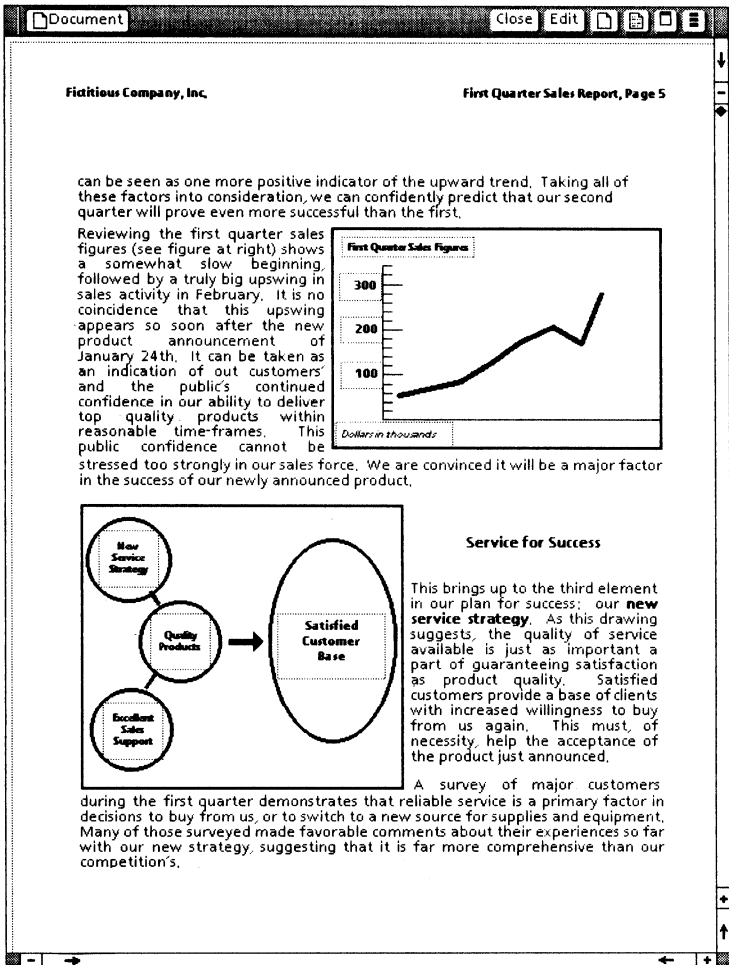
---

The linked text frames feature enables you easily to create, design, and edit complex page layouts by linking together text frames and other types of frames in a document (Figure 1-2). This feature provides you with the tools to create attractive, professional-quality reports, brochures, newsletters, and magazine-like layouts.

With linked text frames, you create two separate documents: one document that contains only text and a layout document that contains anchored and embedded frames. You set a fill-in order for the text frames and then copy the information from the text-only document into the text frames in the layout document.

You then select a command in the content auxiliary menu to fill the text frames in the layout document with text. You complete the layout document by adding graphics (or other illustrative material), paginating it, and printing it.

Figure 1-2 A page created with linked text frames



You can also create a page layout in which columns of text wrap around other frames on a page, without interrupting the flow of words in a sentence or paragraph. Newspapers use this type of layout when they integrate columns of information and pictures on a page.

You can quickly and easily make changes and revisions in a document. You can also dramatically improve document turnaround time because the same document can be used over and over again with different text and graphics.

## Styles

The styles feature provides a method of assigning groups of properties to characters and paragraphs. This method uses style rules that you define using a special window called a document stylesheet (Figure 1-3).

Figure 1-3 **A document stylesheet listing of style rules**

RULE TYPE	RULE NAME	DESCRIPTION
CHARACTER	BODY TEXT	CHARACTER RULE FOR REGULAR BODY TEXT
	HDG1/2	MAJOR & SUB-HEAD LEVEL HEADINGS
	SPECIAL1	CHARACTER RULE FOR SPECIAL TEXT FACE #1
PARAGRAPH	Body Text	Paragraph rule for regular body text paragraphs
	Hdg1	Paragraph rule for major headings
	Hdg2	Paragraph rule for sub-head headings
	Indent5	Paragraph rule for indenting the paragraph 5 spaces.

Style rules help you create documents that have a standard appearance. When style rules are shared throughout an organization, writers can easily create documents that have the same appearance.

If you later decide to change the properties or format of styled text, you simply modify the style rules. The Document Editor makes the changes globally throughout a document. Thus, you do not have to scroll through a styled document and make the changes individually.

---

## Books

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Books are one of the several types of containers ViewPoint software provides to help you manage your desktop. The Blank Book icon (Figure 1-4) enables you to process a collection of individual documents as one document.

Figure 1-4 The Blank Book icon



By organizing individual documents as chapters of a book, you can assign one series of sequential page headings, page footings, and page numbering for the entire book.

You can also use the *VP Long Document Options* application to produce a single table of contents and index for the entire book.

---

## Part 2: Tables

---

The tables feature enables you to present information in a format that is easy to read, easy to understand, and visually appealing.

A table (Figure 5-1) consists of information organized into rows and columns. All tables are contained within frames. You specify when you insert a table whether you want to enter information in the table row-by-row (a by-row table) or column-by-column (a by-column table).

All tables contain simple elements such as rows, columns, and ruling lines that show the individual cells of information. You can specify other

Figure 1-5 A Document Editor table

City name	Number of sunny days	Mean annual temp.	Temperature extremes	
			Temp.	Days
Sandy Beach	320	84	> 95	280
			< 32	0
Desert Springs	320	71	> 95	155
			< 32	27
Summit City	250	47	> 95	3
			< 32	91

features such as automatic fill-in rules, which automatically enter information into the table, and subdivided rows and columns.

By completing property sheets associated with a table, you can also control:

- The number of rows and columns
- Column headings, alignment, and width
- Sorting order of information in table cells

After you create a table, you can type data into it or transfer data to it from other tables, forms, or the *VP Spreadsheet* application.

---

## Part 3: Fields and fill-in rules

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Using *VP Document Editor* fields and fill-in rules, you can design documents that combine standard text with variable information. You can enter the variable information at the keyboard or have it automatically supplied.

## Fields

Using fields, you can reserve positions for variable information within documents containing standard text. You can enter the variable data at the keyboard or have it automatically supplied by fill-in rules.

You can use fields in memos, letters, invoices, reports, and office forms of all kinds. You also can use a document with fields as a display form in *VP List Manager* or as a template in *Mail Merge*.

When you insert a field, it appears as a pair of structure characters, called field bounding characters. Figure 1-6 shows a memo form with field bounding characters displayed. Figure 1-7 shows an office form with field bounding characters displayed.

Figure 1-6 **A memo form, showing field bounding characters**

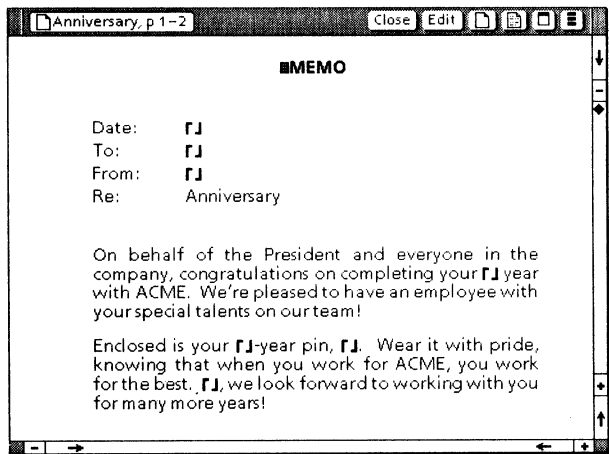


Figure 1-7 **An office form with its field bounding characters displayed**

Order Form			
Name:「Mary Brown」		Phone:「679-3056」	
Address:「23 North St. Los Angeles, CA 90045」			
Item No.	Quantity	Price Each	Total Price
「857」	「1」	「6.00」	「6.00」
「322」	「2」	「2.00」	「4.00」
「」	「」	「」	「」
「」	「」	「」	「」
Subtotal			「10.00」
Tax			「00.65」
Total			「10.65」

## Fill-in rules for fields

Fill-in rules are instructions you enter on the property sheet for a field or a table column. Fill-in rules tell the Document Editor what information to insert in that location and where to find it.

Using field fill-in rules, you can instruct the Document Editor to enter built-in values such as the current date, and perform calculations based on fields in the same document or different documents.

## Fill-in rules and pathnames for tables

---

You can write a fill-in rule for a table column that enters information into each row of the column. You also can write fill-in rules that count table elements and rules that refer to a list of table elements.

You identify table elements using a table pathname. You can use a table pathname in a field fill-in rule to insert table values into a field. You can also refer to a field in a column fill-in rule.

## Fill-in rule access to other documents

---

In a fill-in rule for a field or a table column, you can refer to data in fields and tables in other documents.

Fill-in rules eliminate the need to enter duplicate information in one or more documents. They also speed calculation time and minimize entry errors. Your company conserves resources when you set up fill-in rules for fields and tables in documents for yourself and others to use.

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## Part 4: Mail Merge

---

Using Mail Merge, you can combine table data with your forms to produce three kinds of documents automatically.

- **Forms.** You can generate multiple printed documents, such as form letters. The table data merges into fields in your form, and the result is one printed document for each table row.



- **Labels.** You can use a label template to generate printed pages of labels. One row of table data merges into each label field in your template.
- **Lists.** You can merge text from a table into any document. The resulting document has one text section for each table row; you can elect to save or print the document. This operation is the reverse of *VP Data Capture*, which copies document text into a table.

You specify the table columns to be merged. You also can specify that only certain rows be merged.

**Part 1**

**Document Editor tools**





The *Find* feature can reduce the time necessary to edit a document. You can use Find to search a document and locate items you need to edit.

The Find option sheet lets you specify characters you want to find and specify characters to replace those you find. In addition, the content auxiliary menu includes commands to help you locate:

- The next page format character
- The next break character
- The next footnote reference
- The next index object
- The next field
- The first field or table in the fill-in order

---

## Key concepts of the Find feature

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Find lets you quickly solve four problems you can encounter in editing large documents:

- Finding a specific group of characters
- Finding every occurrence of an item you need to change
- Finding and changing characters when you are unsure of the exact form or spelling
- Finding structure characters

---

## Automatic location of character strings

---

Using the Find option sheet, you can locate single characters, words, phrases, or any group of characters you specify. The term *character string*

indicates a group of sequential characters that a computer is to find. The option sheet offers several ways to refine the search and focus exactly on the characters you want to find.

You can choose to find character strings in the document that:

- Match your characters without regard to properties.
- Match your characters including their properties.
- Match the capitalization of your text or match your text regardless of capitalization.

You can also specify the range of the search to include:

- The entire document
- The rest of the document
- The highlighted part of the document
- Text within frames
- Text marked for deletion

## Replacement of characters

---

If you choose to replace text, Find automatically updates or corrects items that appear in several places in a document. You can specify the replacement characters and choose to have the replacement include:

- Text only
- Text and properties

The replacement feature also lets you specify whether you want to review each matching string before changing it or you want the changes made automatically. This option locates all occurrences, but lets you select which occurrences you want to update.

---

## Wildcard characters for finding text variations

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
Find can help you locate text even when you are uncertain of the exact spelling or form of the text you want to find. You can use wildcard characters to specify characters you do not remember, or that may vary from case to case.

A *wildcard character* (Figure 2-1) is a special character you include in a character string to signify that any character is acceptable in that character position. When you use wildcard characters, you can locate character strings that are similar, but not identical.

Figure 2-1 Wildcard character



Wildcard characters are particularly helpful when you want to look at similar items, such as product numbers, that are not identical but share some common characters.

For example, assume you have a list of automobile license plate numbers. The licenses have three letters followed by three numbers in the form of ABC-123. You need to check all licenses that begin with DGR and end in 7. You type **DGR-7** as the string to search for.

You can also specify wildcard characters in your replacement text. This feature lets you locate items, such as part numbers or prices, and update only part of the item you locate.

For example, consider a business plan that includes numerous dates in the format of DD/MM/YY. Suppose that everything projected for completion in 1995 will be completed 12 months ahead of schedule in 1994. The string to

search for would be **ⓧⓧ/ⓧⓧ/95**, and the string to replace it would be **ⓧⓧ/ⓧⓧ/94**.

You can use wildcard characters to find characters that have specific character properties, such as bold or italic face. In addition, you can assign different properties to the wildcard character you search for and to the wildcard character you replace it with. For example, you can find all italic characters and change them to bold.

## **[Go to] commands for finding structure characters**

---

The [Go to] commands in the content auxiliary menu are associated with the Find feature. These commands let you quickly find structure characters in your documents rather than individual words or phrases found with the Find option sheet.

For example, when the document does not paginate as you expected, your problem may be extra break characters no longer needed in the document. Using [Go to Next Break Character], you can quickly find and delete unwanted page break characters.

The [Go to Next Page Format Character] command is particularly helpful when the **Line Height** property of the new-paragraph character that precedes a page format character is too small for you to see the page format character. The command locates and highlights the hard-to-see character.

[Go to] commands also help you find fields, footnotes, items you marked for inclusion in the index, and the first field or table in the fill-in order for the document.

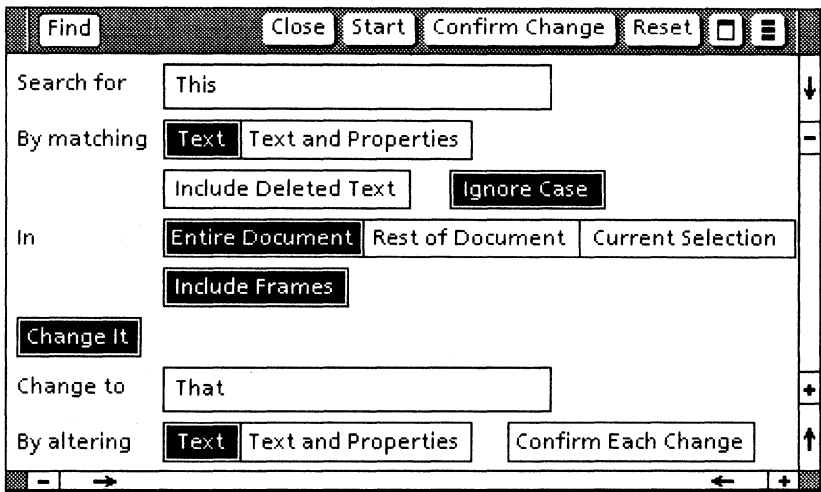
**Note:** Refer to Part 3 of this volume, "Fields and fill-in rules," for information on fields and fill-in rules. Refer to the *Document Editor Options Reference* volume in this library for information on the Footnotes feature and the Index Generator.

## The Find option sheet

The Find option sheet (Figure 2-2) enables you to search for text and, optionally, to replace it with other text. You display the option sheet by selecting a location in your document and pressing the <FIND> key.

The Find option sheet shown in Figure 2-2 includes the options for replacing text, which appear when you select the [Change It] option.

Figure 2-2 The Find option sheet



## Find option sheet commands

[Close]

Closes the Find option sheet.

**Note:** The Find option sheet remains open and available for searches until you select [Close].



[Start]

Starts the search and is then replaced in the header by the [Continue] command.

[Continue]

Continues the search for the next occurrence after a match is found. If you selected the [Change It] and [Confirm Each Change] options, [Continue] searches for the next occurrence without changing the match that was just found.

**Note:** Pressing <FIND> twice in rapid succession causes the same effect as selecting [Continue].

[Confirm Change]

[Confirm Change] substitutes the text in the **Change to** box for the matched text. [Confirm Change] has no effect if you have not selected [Change It] and [Confirm Each Change].

[Reset]

If you select [Reset] before you select [Start] on the current search, the Find option sheet resets to the settings it had when you opened the option sheet, or the last time you selected [Start].

Selecting [Reset] when the search pauses after finding a match cancels the search. The [Start] command replaces the [Continue] command, and the caret remains with the last match found before you selected [Reset].

## Find options

---

### Search for

Specifies the character string to find. You can include any number of characters in the **Search for** character string, as well as character properties.

You cannot display a Text property sheet for the characters you place in the **Search for**

---

box. You can use one of the following methods to assign properties to the **Search for** string:

- Enter the text and then use the <SAME> key or the top-row function keys to assign the properties.
- Copy the characters with their properties from existing text in the document.

**Note:** Because your entry in the **Search for** box can include properties, it is not simple text. Therefore, the <UNDO> key does not restore deleted **Search for** text. However, you can select [Reset] to restore the **Search for** option to the text it included when you last opened the option sheet or selected [Start].

### By matching

Specifies the type of match desired between the **Search for** text and the document text.

[Text]

Finds character strings that match the **Search for** character string, regardless of associated properties. For example, "**Document Editor**" matches "Document Editor" even though one has the **Bold** character property.

[Text and Properties]

Finds strings that are identical to the **Search for** string, including its associated properties. In this case, "**Document Editor**" does not match "Document Editor" because the character properties do not match.

[Include Deleted Text]

Extends the search to text marked for deletion using the redlining feature. Refer to the chapter titled "Redlining" in this volume for details on the redlining feature.

[Ignore Case]

Instructs Find not to distinguish between uppercase and lowercase characters when trying to match the **Search for** string. For example, "Document Editor" matches "document editor" when you select [Ignore Case].

The defaults for **By matching** are [Text] and [Ignore Case].

**In**

Specifies the portion of the document to be searched.

[Entire Document]

Specifies that the search includes all text in the document, regardless of caret location.

[Rest of Document]

Limits the search to text starting at the caret location and continuing to the end of the document.

[Current Selection]

Limits the search to the text that is highlighted.

[Include Frames]

Extends the search to all frames within the portion of the document you have selected for the search. This option includes anchored frames, text frames, and tables embedded in graphics frames.

**Note:** The location of the frame anchor determines whether or not the frame is included in the search. For example, selecting [Rest of Document] and [Include Frames] searches a frame that appears after the caret only if the frame anchor is also after the caret.

The default setting is [Entire Document].

**[Change It]**

Specifies the characters that replace some or all occurrences of the **Search for** string, and displays additional properties (Figure 2-2).

**Note:** Be sure [Change It] is highlighted only when you want to make substitutions. When [Change It] is highlighted, the Document Editor replaces matches with the **Change to** string, even if the **Change to** box is blank.

**Change to**

Specifies the character string that is to replace occurrences of the **Search for** string.

**Note:** Never leave this option blank unless you want to delete the character strings that match the **Search for** string.

If you want specific properties for your replacement characters, include those properties in the **Change to** string. You can use the same methods to enter the properties as you used in the **Search for** option.

**By altering**

Specifies how you want to alter text that matches characters in the **Search for** string:

**[Text]**

Changes the **Search for** string to the **Change to** string while retaining the original properties.

**[Text and Properties]**

Changes the **Search for** string to the **Change to** string, including the properties of the **Change to** string.

The default is [Text].

[Confirm Each Change]

Pauses at each occurrence of the characters in the **Search for** string, until you confirm whether or not you want to replace those characters.

- If you select [Confirm Change] in the header of the Find option sheet, the **Change to** string replaces the characters found, and the search automatically continues.
- If you select [Continue], Find continues the search without changing the match located before the pause.

The default setting is for [Confirm Each Change] to be deselected. This default setting causes Find automatically to change all occurrences of the **Search for** string, without pausing for confirmation.

---

## Searching for and replacing text

---

1 2 3...

To prepare for using the Find feature:

1. Select a location in an open document.
2. If you plan to edit the document when you find the character string, place the document in edit mode.

### Finding text

---

1. Press <FIND>.
2. Type into the **Search for** box the text you want to find. If you want to limit the search to characters with specific properties, enter text with those properties.
3. Select the **By Matching** and **In** options you want for the **Search for** string, and select [Start] to begin the search.

**Note:** If [Change it] remains selected from the last time you used the Find option sheet, deselect it and then select [Start].

4. If you receive the message, "Can't Start: select document text first," reselect the location in the document where the search is to start, and select [Start]. Selections you made on the option sheet may have canceled your document selection.

In a successful search, the desktop header first displays the message "Search in progress," and then "Match found." The Document Editor scrolls to the location of the first match and highlights the text in the document.

5. If the highlighted occurrence is not the one you want, select [Continue] in the header of the Find option sheet or press <FIND> twice in rapid succession.
6. Repeat step 5 until you find the occurrence you want or until you receive the message "No match was found."
7. If the Find operation does not locate a string matching your **Search for** text, make sure you entered the text correctly. If the **Search for** text is entered incorrectly, edit it, select a location in your document, and select [Start] again.

**Note:** Editing your document ends the Find procedure, although the Find option sheet remains open for additional searches.

## Replacing text

---

1. Press <FIND> .
2. Type into the **Search for** box the text you want to find. If you want to limit the search to characters with specific properties, enter text with those properties.
3. Select the **By matching** and **In** options you want for the **Search for** string.
4. Select [Change It] to display the **Change to** and **By altering** options.
5. Enter the replacement text in the **Change to** box.
6. Select either [Text] or [Text and Properties] in the **By altering** option. If your choice is [Text and Properties], be sure the characters you entered in **Change to** have the properties you want.

7. Select [Confirm Each Change] if you want the search to pause after finding each match, so you can choose whether or not to make each substitution. Deselect the option if you want every occurrence that matches the **Search for** string to be changed automatically.

**Notes:** Select [Confirm Each Change] any-time you expect Find to make numerous changes throughout a document. Observe the first couple of changes to be sure the resulting text is what you expect. After you are satisfied, you can deselect [Confirm Each Change] and restart the search; Find then makes all the changes automatically.

If you do not select [Confirm Each Change] initially, you should save your document before the search-and-replace operation. Then, if the results are not what you expect, you can always select [Reset] to discard your changes. (Remember that [Reset] is not available in automatic edit mode.)

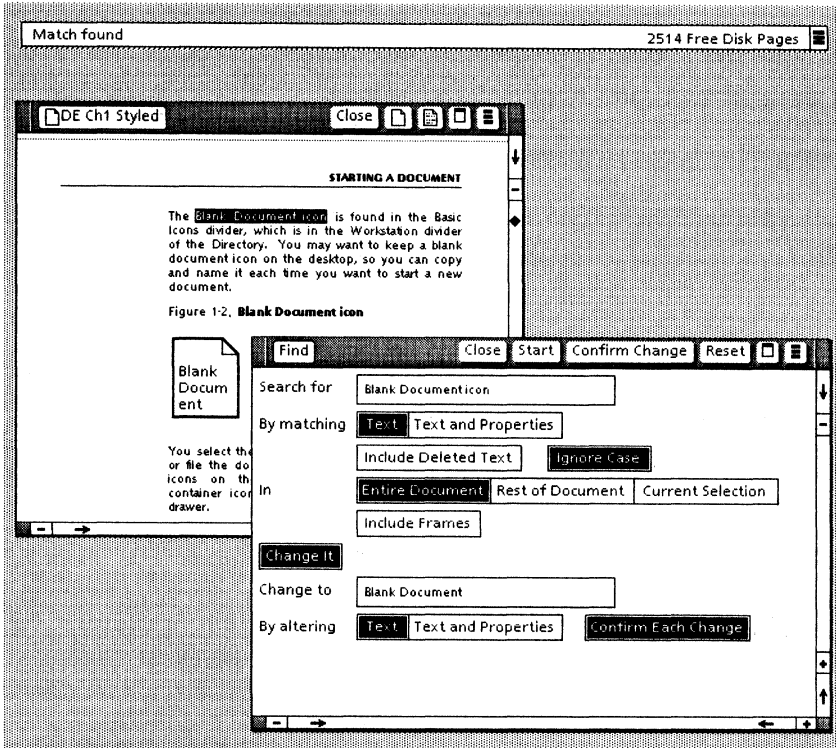
8. Select [Start].
9. If you selected [Confirm Each Change], select [Confirm Change] for each occurrence you want to change; select [Continue] or press <FIND> twice quickly to skip changing that occurrence and continue the search.

When the the search is complete, a message appears showing the number of matches found and the number of changes made.

Figure 2-3 shows an example of a Find operation.



Figure 2-3 Example of a Find operation



## Using <SKIP/NEXT> to complete the option sheet

**Note:** This procedure assumes that the settings for the **By matching**, **In**, [Change It], **By altering**, and [Confirm Each Change] options are already set the way you want them.

1. Press <FIND>.
2. Type into the **Search for** box the text you want to find. If you want to limit the search to characters with specific properties, enter text with those properties.

3. Press <SKIP/NEXT> .
  - If [Change It] is not already selected, the search begins.
  - If [Change It] is already selected, the caret is now in the **Change to** box. Enter the replacement text in the **Change to** box and press <SKIP/NEXT> . The search-and-replace operation begins.

---

## Using wildcard characters

---

1 2 3...

A wildcard character in the **Search for** string matches any character in the corresponding position in a string of characters in the document text.

A wildcard character in the **Change to** string instructs the Document Editor to leave the corresponding character in the searched-for text as it is. The **Change to** string changes only characters that are not wildcard characters.

To enter a wildcard character:

1. Hold down <KEYBOARD> and press the top-row function key corresponding to <Special> .
2. Still holding down <KEYBOARD> , press or select <X> . Then release <KEYBOARD> .

---

## Using wildcard characters to find text

---

1. With the caret positioned in an open document in edit mode, press <FIND> .
2. Type into the **Search for** box the character string you want to find. Substitute a wildcard character in each character position where any character is acceptable.

3. Select the other options that you want to control the search.
4. Select [Start].
5. Select [Continue] to see additional matches.

Repeat step 5 until the search matches the actual string you are looking for.

## Using wildcard characters to find and replace text

---

1. With the caret positioned in an open document in edit mode, press <FIND>.
2. Type into the **Search for** box the character string you want to find. Substitute a wildcard character in each character position where any character is acceptable.
3. Select the other options that you want to control the search.
4. Select [Change It].
5. Enter the **Change to** character string. Substitute a wildcard character in each character position where you want to keep the corresponding character located by the **Search for** string.
6. Make any necessary changes to the **By altering** option.
7. Select [Confirm Each Change].

**Note:** Whenever you use wildcard characters, you should verify the first few matches and replacements to ensure that you are getting the results you want.

8. Select [Start].

9. Review the first match. If satisfied, select [Confirm Change].

If you are not satisfied with the first match, go back to step 1 and redefine the **Search for** or **Change to** strings.

10. Repeat step 9 until you are satisfied that the information on the Find option sheet is making the correct updates. Then proceed with the search, either with or without [Confirm Each Change] selected.

When the search is complete, the Document Editor displays the number of substitutions made in the document.

## Using wildcard characters to find and change a set of character properties

---

You can use wildcard characters, along with the [Text and Properties] setting for **By matching**, to locate any character that has a specified set of character properties. For example, you can have Find locate each occurrence of italicized text. Find declares a match only when all character properties are identical. For example, a search that finds all the italicized text in body text overlooks italicized words in larger-sized section headings.

### Finding a set of character properties

---

1. With the caret positioned in an open document, press <FIND>.
2. In the **Search for** box, enter a wildcard character.
3. Select the wildcard character and use the <SAME> key to copy to it the properties of text that has the properties you want to locate.

4. Select [Text and Properties] for the **By matching** option.
5. Select [Rest of Document] for the **In** option.
6. Select the location in the document where you want to start the search, and select [Start]. The Document Editor locates the first character that has the same properties.
7. If **Search for** contains one wildcard character and you select [Continue], the Document Editor locates the next character of the same word. In that case, select a character with different properties that follows the word or string of characters you just located, press <FIND>, and then select [Start] to find the next occurrence of the character properties.

### **Changing character properties automatically with Find**

---

You can replace one set of character properties with another by using a wildcard character as the **Change to** string.

1. With the caret positioned in an open document, press <FIND>.
2. Enter a wildcard character in the **Search for** box.
3. Select the wildcard character and use the <SAME> key to copy to it the properties of text with the properties you want to locate.
4. Select [Text and Properties] for the **By matching** option.
5. Select [Change It].
6. In the **Change to** box, enter a wildcard character and assign to it the character properties you want to change to.
7. Select [Text and Properties] for the **By altering** option.

8. Follow the steps for a normal search-and-replace operation.

---

## Stopping a Find operation

---

1 2 3...

You can use any of the following actions to stop a Find operation before it ends normally. Most of these actions apply only when [Confirm Each Change] is selected, a match is found, and you have control of the pointer.

- Close the Find option sheet.
- Change an option on the Find option sheet.
- Press <FIND> to begin a new search.
- Close the document being searched.
- Edit the document being searched.
- Paginate the document being searched.
- Select [Reset] instead of [Continue] in the header of the Find option sheet.
- Select one of the [Go to] commands in the content auxiliary menu.
- Press <STOP>. The Document Editor stops the Find operation. If you were replacing text, a message reports how many matches were found and changed.

**Note:** When [Confirm Each Change] is not selected, changes are made in the document before they appear on the screen. Even if you press <STOP> before any changes show on the screen, there may be some changes in the document. The Document Editor updates the screen display when it posts the message stating the number of matches found and changes made.

If you inadvertently stop a Find operation:

1. Select a location in the document.

**Note:** To avoid repeating a search of text you have already examined, first select [Rest of Document] and then select a location in the document before the currently highlighted match.

2. Select [Start]. The Document Editor resumes the search.

---

## Finding structure characters

---

1 2 3...

The content auxiliary menu includes six commands that help you find structure characters in your document:

- [Go to Next Page Format Character]
- [Go to Next Break Character]
- [Go to Next Footnote Reference]
- [Go to Next Index Object]
- [Go to Next Field]
- [Go to First Fill-in]

You can use any of the available commands any time you are working with a document. If you have not selected a location in the document, the search starts at the beginning of the document.

Even if the document is not in edit mode, the commands still work. However, you cannot change anything until you select [Edit] in the document window header.

The [Go to First Fill-in] command locates the first field or table in the fill-in order, no matter where the caret is positioned.

The following procedure lets you use commands that locate the next occurrence of an item:

1. Select a [Go to] command from the content auxiliary menu.

The Document Editor highlights the next occurrence after the caret. If you did not select a location in the document before selecting the command, the Document Editor locates the first occurrence in the document.

2. Repeat step 1 to find succeeding characters of the same type.





---

## 3. Autohyphenation

Autohyphenation is a Document Editor feature that automatically hyphenates a word extending beyond the end of a line. The feature supplements the manual hyphenation capabilities discussed in the "Document creation" chapter of *Document Editor Reference* volume 3 in this library.

Autohyphenation saves you time in reducing word spacing within justified paragraph alignment. Instead of manually inserting discretionary hyphens, you can use autohyphenation to make the Document Editor insert hyphens where appropriate.

Before you can use autohyphenation for your documents, the hyphenation application for your document language must be installed and running. For example, for a US English document, *VP U.S. English Hyphenation* must be installed and running.

You can use autohyphenation with paragraphs in different languages in the same document. Autohyphenation uses the **Language** property on the Paragraph property sheet to determine which hyphenation dictionaries to use with each paragraph.

---

## Key concepts of autohyphenation

---



Autohyphenation is a paragraph property setting that you can activate either for individual paragraphs or as a style rule property. As a style rule property, autohyphenation becomes a feature that you can turn on and off easily. Refer to the "Styles" chapter in this volume for details on setting style rule properties.

---

### The autohyphenation process

---

When autohyphenation is selected for a paragraph, the Document Editor checks each line for any word that would overlap the right margin. It then looks for any manually inserted hyphens, including standard, non-breaking, and discretionary hyphens. If manually inserted hyphens exist within a word, the Document Editor uses them to divide the word. (A discretionary hyphen at the beginning of a word prevents the Document Editor from hyphenating the word.)

If the word does not contain manually inserted hyphens, the Document Editor examines the word for the points at which a hyphen can be used to show syllable division. To determine these hyphenation points, the Document Editor refers to word lists, called hyphenation dictionaries, for the language of the document.

If the word is not in the hyphenation dictionaries, the Document Editor uses hyphenation algorithms for the document language to determine likely hyphenation points.

After determining where to hyphenate the word, the Document Editor inserts an autohyphen character (Figure 3-1) between syllables and moves the rest of the word to the next line. The

preferred hyphenation point leaves as much of the word as possible on the current line.

Figure 3-1 **The autohyphen character**



If subsequent editing moves the automatically hyphenated word from the end of the line, the autohyphen character disappears.

## **Autohyphenation dictionaries**

---

Each language that autohyphenation supports has two types of autohyphenation dictionaries: a system-created dictionary and one or more editable dictionaries.

### **The system-created dictionary**

---

The *system-created dictionary* lists hyphenation points for thousands of words in the supported language. The dictionary for US English contains 80,000 words. The system-created dictionary is always active when you use autohyphenation. You cannot change its contents.

### **Editable dictionaries**

---

*Editable dictionaries* are hyphenation dictionaries that you create. You add words to editable dictionaries to override or supplement hyphenation points specified in the system-created dictionary or by the hyphenation algorithm. You use the Autohyphenation Checker option sheet to create a new editable dictionary or to add words to an existing editable dictionary.

When you create an editable dictionary, the Document Editor automatically places it in a special folder in the Desktop divider. You can move it to a special folder in the Workstation

divider. Editable dictionaries in the Desktop divider can be used by all documents on your desktop; in the Workstation divider, they can be used by all documents on all desktops on the workstation.

An editable dictionary on the desktop appears as a dictionary icon (Figure 3-2).

Figure 3-2 **Autohyphenation dictionary icon**



The Document Editor automatically assigns the name "Personal English Dictionary" to an editable dictionary for a US English document. It substitutes the appropriate language name for "English" when naming editable dictionaries for other languages. You can change the name of an editable dictionary using the Dictionary properties sheet.

You can move, copy, and delete dictionary icons as you can any ViewPoint objects. When you remove a dictionary from the desktop or workstation folder, the Document Editor displays the message, "Hyphenation may change as a result of this action."

---

### Desktop editable dictionaries

---

You can place an editable dictionary in the Desktop Autohyphenation Dictionaries folder in the Desktop divider. The desktop folder is the first location checked when the Document Editor looks for an editable dictionary. Even if you also have an editable dictionary for the same language in the Workstation divider, autohyphenation uses only the dictionary in the Desktop divider.

The Desktop Autohyphenation Dictionaries folder may contain one editable dictionary for each language. This dictionary is called the active editable dictionary.

If different documents require separate dictionaries in the same language, you can keep your editable dictionaries in a separate folder on the desktop. Then, to make a different dictionary active, you move the previous dictionary out of the Desktop Autohyphenation Dictionaries folder and move the desired dictionary into the folder.

Each entry in a desktop editable dictionary affects autohyphenation of all documents on your desktop. Your documents may look slightly different when viewed from a desktop with different editable dictionaries.

### **Workstation editable dictionaries**

---

You can place an editable dictionary in the Workstation Autohyphenation Dictionaries folder in the Workstation divider. The folder may contain one editable dictionary for each language. If the Desktop Autohyphenation Dictionaries folder does not include a dictionary for the current language, the workstation editable dictionary for that language becomes the active editable dictionary.

The Workstation Autohyphenation Dictionaries folder can be used by all desktops on the workstation. Your organization can use the folder to maintain standard editable dictionaries so that documents viewed or edited on different workstations have the same appearance.

### **Hyphenation algorithm**

---

If a word is not in any dictionary, the Document Editor computes hyphenation points using an autohyphenation algorithm for the language. The algorithm is a set of rules that describe statistically how that language divides words into syllables.

The Document Editor uses the algorithm to determine the most likely hyphenation points. In most cases, the algorithm results in an acceptable hyphenation point. When it does not, you can add the word to the editable dictionary to provide correct hyphenation.

## **Indirect effects of autohyphenation**

---

Changing editable dictionaries may affect document page breaks, not only in the document in process but also in other documents on the desktop. For example, changes in word hyphenation can cause paragraphs to become one line longer or shorter. In addition, text in frames, captions, or tables is not reformatted during pagination, and may not fit its designated space following a change to the hyphenation dictionary.

To minimize unexpected changes resulting from autohyphenation:

- Maintain a standard editable dictionary within your organization if common documents are to be viewed or edited on different workstations.
- After you update or replace an editable dictionary, paginate documents before printing versions that refer to the new editable dictionary.
- Update the editable dictionary periodically instead of each time you discover an incorrectly hyphenated word. Between updates, you can use discretionary hyphens to handle individual words you discover. This way, you minimize the need to repaginate documents.
- Turn autohyphenation off within frames to avoid the possibility of having to readjust the height or width of frames, caption areas, or table columns after changing an editable dictionary.

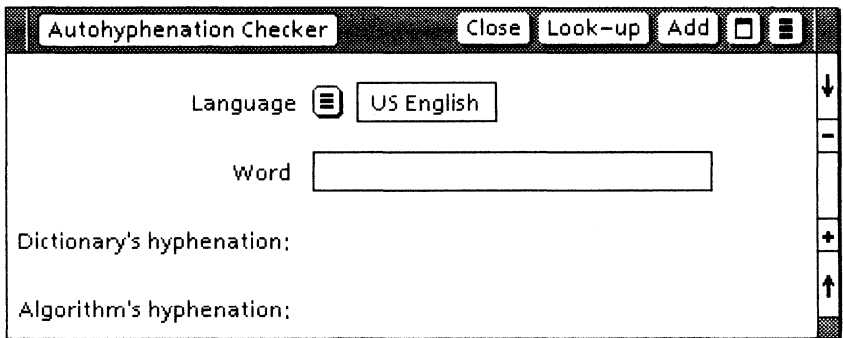
---

## Autohyphenation Checker option sheet

---

The Autohyphenation Checker option sheet (Figure 3-3) lets you examine potential hyphenation points for a specific word. The option sheet also lets you specify preferred hyphenation points by adding words to or deleting them from the editable dictionary for a specific language. This option sheet appears when you select [Autohyphenation Checker] from the desktop auxiliary menu.

Figure 3-3 **The Autohyphenation Checker option sheet**



---

## Autohyphenation Checker commands

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[Close]

Closes the option sheet.

[Look-up]

Finds the hyphenation for the word specified in the **Word** option box. The resulting hyphenation is based on the dictionaries and the algorithm for the language specified for the **Language** option. It reports the resulting



hyphenation under **Dictionary's hyphenation**  
or **Algorithm's hyphenation**.

[Add]

Adds the hyphenated version of the word shown for the **Word** option to the active editable dictionary, except under the following circumstances:

- If your version of the word is already in the editable dictionary, a message advises you that the word is already correct in the dictionary.
- If a different version of the word exists in the active editable dictionary, a message asks you to confirm that you want to replace the earlier version.
- If your version matches the results that autohyphenation would produce without your input, a message advises you that the word will be hyphenated correctly.

**Note:** The Document Editor will not add the word to the editable dictionary when autohyphenation is already capable of matching your hyphenation points.

If you add a word but no editable dictionary for the current language exists in either the desktop or workstation dictionaries folder, the Document Editor creates a new dictionary for that language in the Desktop Autohyphenation Dictionaries folder and adds the word to it.

[Delete]

Removes the word displayed in the **Word** option box from the active editable dictionary.

## Autohyphenation Checker options

---

### Language

Indicates the document language, for determining which system-created dictionary and autohyphenation algorithm the Document Editor is to use. An auxiliary menu lists the available languages. The choices depend on the optional VP language software installed and the languages supported by autohyphenation.

The default is [US English].

### Word

Enables you to enter the word that you want checked for hyphenation points. You also use this option when you want to add a word to, or delete a word from, the active editable dictionary.

When entering a word, you enter a space at each acceptable hyphenation point within the word.

### Dictionary's hyphenation

Displays the looked-up word showing spaces where the active editable dictionary hyphenates the word. This display is read-only.

If the word is not listed in the active editable dictionary, **Dictionary's hyphenation** is blank.

### Algorithm's hyphenation

Displays the looked-up word showing spaces where the algorithm for the language hyphenates the word. This display is read-only.

The Document Editor always returns an answer to **Algorithm's hyphenation**. When the word has only one syllable or is too short to be divided, the word displays without spaces.

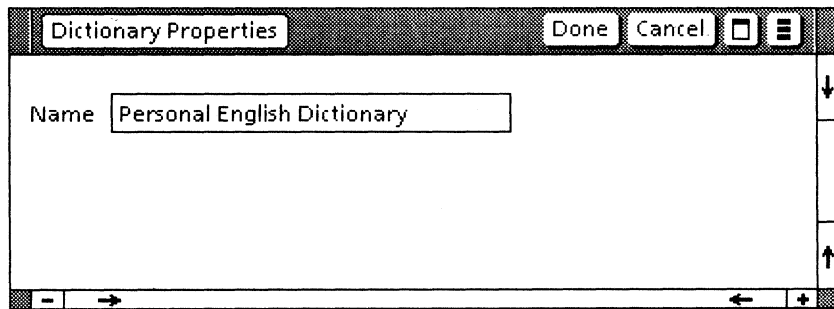
---

## The Dictionary properties sheet

---

The Dictionary properties sheet (Figure 3-4) enables you to rename an editable dictionary.

Figure 3-4 The Dictionary properties sheet



### Name

Displays the name of the editable dictionary. You can delete the name and type a new name for this property. The Document Editor keeps track of the dictionary language, regardless of the name you assign.

---

## Activating autohyphenation

---

**1 2 3...**

1. Select the text you want to hyphenate. Your selection can range from a single paragraph to an entire document.
2. Display the Paragraph Layout property sheet and select [Hard] as the **Properties Shown** choice.
3. Select [Use Hyphenation] as the setting for the **Hyphenation** property.
4. For the **Language** property, select the language you want to use in the hyphenation selections.

**Note:** If you change the **Language** property, you also change the language-related items of the selected paragraphs.

5. Select [Done] or press <PROP'S>. The Document Editor immediately hyphenates words in the selected text.

The Document Editor automatically hyphenates new text that you type into paragraphs that have [Use Hyphenation] selected.

---

## Removing autohyphenation

---

**1 2 3...**

1. Select the paragraph or paragraphs that you do not want automatically hyphenated.
2. Display the Paragraph property sheet, with [Hard] selected for **Properties Shown**.
3. Deselect the [Use Hyphenation] property on the Paragraph Layout property sheet.

4. Select [Done] or press <PROP'S>.

The selected text now appears without autohyphens. Any new text you add that takes on the same paragraph properties will not be hyphenated automatically.

5. Repeat the procedure for each section of text that you no longer want autohyphenated.

**Note:** The autohyphens only appear when the autohyphenation application is running. If you transfer the document to a workstation that is not running autohyphenation, you can produce a copy without autohyphens.

---

## Overriding hyphenation points

---



Occasionally, you may disagree with the location of an autohyphen. You can override the hyphenation in one of the following ways:

- Add discretionary hyphens at the acceptable hyphenation points. When the word falls at the end of the line, it is hyphenated only at a discretionary hyphen.
- Place a discretionary hyphen before the first character of the word. The Document Editor does not try to divide the word.
- Place a non-breaking hyphen within the word. The Document Editor does not try to divide the word.
- Add or modify the word in an editable dictionary, or delete the word from an editable dictionary, as described in the following procedures.

You cannot change an editable dictionary while a document is open on the desktop or is being processed in the background. An advisory message tells you to close all documents if you try to change the dictionary while any document is open.

**Note:** Changing an editable dictionary can change some line breaks in documents that were hyphenated using previous versions of the dictionary. Paginating those documents ensures that all page breaks occur at places appropriate for changes resulting from the modified dictionary.

## Looking up the hyphenation points for a word

---

1. Close all documents.
2. Select [Autohyphenation Checker] in the desktop auxiliary menu.
3. Ensure that the **Language** option is correct.
4. Select [Look-up].

The word appears, with spaces for the hyphenation points, next to the **Algorithm's hyphenation** option and, if present in the dictionary, next to the **Dictionary's hyphenation** option.

5. Select [Close].

## Adding a word to an editable dictionary

---

This procedure also creates a new active dictionary if one does not already exist.

1. Close all documents.
2. Select [Autohyphenation Checker] in the desktop auxiliary menu.
3. Ensure that the **Language** option is correct.

4. Type a word into the **Word** option box. Place a space at each acceptable hyphenation point.

**Note:** Always show all hyphenation points to ensure that autohyphenation will fit as much of the word as possible into the available space.

5. Select [Add].

If no active editable dictionary exists, the Document Editor automatically creates one in the Desktop Autohyphenation Dictionaries folder, and adds the word to it.

If an active editable dictionary exists, the Document Editor adds your version of the word to the dictionary unless autohyphenation is already capable of producing the same set of hyphenation points.

If so, the Document Editor places an advisory message in the desktop header and does not add the word.

6. Select [Close].

## Modifying a word in an editable dictionary

---

1. Close all documents.
2. Select [Autohyphenation Checker] in the desktop auxiliary menu.
3. Ensure that the **Language** option is correct.
4. Type the word whose hyphenation you want to modify into the **Word** option box, placing spaces between syllables.
5. Select [Add].

A message in the desktop header advises you that the word already exists in the editable dictionary.

6. Select [Yes] to confirm that you want to replace the word.

When the Document Editor accepts your version of the word into the editable dictionary, it displays the new version next to the **Dictionary's hyphenation** option.

7. Select [Close].

---

## Deleting a word from an editable dictionary

---

1. Close all documents.
2. Select [Autohyphenation Checker] in the desktop auxiliary menu.
3. Ensure that the **Language** option is correct.
4. Type the word to delete into the **Word** option box.
5. Select [Delete]. The Document Editor immediately deletes the word from the active editable dictionary.

If the word is not in the dictionary, or if no editable dictionary is active, the Document Editor cancels the command and posts an advisory message.

6. Select [Close].

---

## Working with different hyphenation environments

---

1 2 3...

Documents exchanged between VP 2.0 workstations with different autohyphenation environments may change in appearance when viewed or printed. Specifically, line breaks and inter-word spacing for justified text may display differently from those in the original document. Column and page breaks may also change after the document is paginated.



To correct the text rendering problems that may occur with different hyphenation environments, you need to normalize the text in the document. You normalize text in a document by using the [Normalize Text] command located in the content auxiliary menu.

It is recommended that you normalize text if,

- You work with a document that uses autohyphenation and you do not have the autohyphenation application loaded and running on your workstation.
- You work with a document created with an autohyphenation dictionary that is different from your autohyphenation dictionary.

To normalize text in a document:

1. Select the document and press <OPEN>.
2. Select [Normalize Text] from the content auxiliary menu.
3. Paginate the document.
4. Scroll through the document, page by page, and check the page breaks, column breaks, and placement of anchored frames. If the page breaks, column breaks, or anchored frames need to be adjusted, make the necessary changes. For example, you can insert a break character to change the break on a page or column. Repaginate the document if you make changes to it.

The redlining feature lets you keep a record of the changes you make to a document. Redlining is the Document Editor equivalent of using a red pencil to mark your editing changes:

- It marks new text that you insert so that it stands out from the original text.
- It places ~~strikeout~~ characters over text you select for deletion.

With redlining, you can easily recognize changes you have made to the document. You can print the redlined document to have a record of those changes. When you need a final, clean copy of the document, a single command clears all markings and deletes the text you had marked for deletion.

---

## Key concepts of redlining

---



Redlining is a desktop operation. When you turn redlining on, it then affects all documents that you edit on your desktop. When you turn redlining off again, all documents retain their current redlining marks. Further editing does not result in more redlining marks, until you turn redlining on again.

The default desktop setting is for redlining to be turned off. You use desktop auxiliary menu commands to turn redlining on and off again. Alternatively, you can change the **On** parameter in the [Redlining] section of your User Profile from FALSE to TRUE, so that the desktop default is for redlining to be turned on. Refer to the

chapter titled "The User Profile" in the *General User Reference* volume in this library for more information.

## Redlining marks

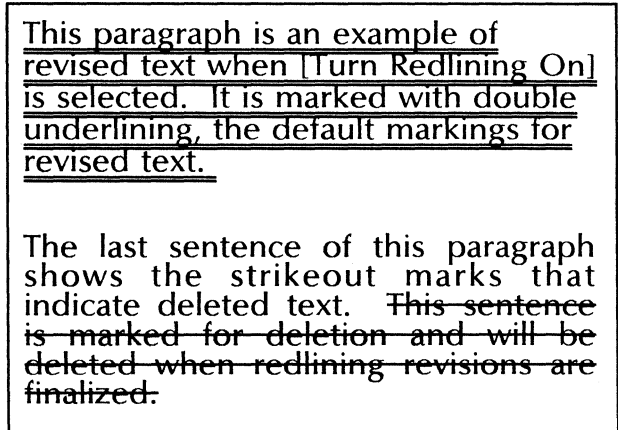
---

When changing a document, you:

- Insert text
- Move text (delete it from one location and insert it in another)
- Copy text (insert a duplicate in an additional location)
- Delete text

The redlining feature marks where changes will occur, using character properties you seldom use: double underlining for revised (inserted) text, and strikeout characters for deleted text (Figure 4-1).

Figure 4-1 **Redlining marks on revised and deleted text**



---

## Marks that indicate revised text

---

The redlining feature marks text as revised when you type new text, move text from one location to another, or copy text to a new location. By default, redlining places double underlining beneath revised text. It also marks any revised text as a result of using the Find feature or running the optional *VP Spelling Checker* application.

If you need to use double underlining for other reasons, you may choose any of four other alternative sets of properties for redlining of revised text:

- Bold double underlining
- Bold italic
- Bold italic underlining
- Bold italic double underlining

Figure 4-2 shows examples of the properties available to mark revised text.

Figure 4-2 **Redlining marks available for revised text**

This paragraph illustrates revised text marked with double underlines, the default marking.

**This paragraph illustrates revised text marked with bold and Double underlines.**

*This paragraph illustrates revised text marked with bold italics and double underlines.*

**This paragraph illustrates revised text marked with bold italics and a single underline.**

***This paragraph illustrates revised text marked with bold italics.***

To change the default marks for revised text, you change the **Revised Text Appearance** parameter in the [Redlining] section of the User Profile; then you log off and log back on. All redlining marks for revised text in all documents on the desktop change to reflect the new setting. For more information about changing the User Profile, refer to the chapter titled "The User Profile" in the *General User Reference* volume in this library.

### **Marks that indicate deleted text**

---

The redlining feature marks text for deletion when you delete it explicitly or when you move it from one location (where it is deleted) to another. Redlining also marks text you delete as a result of using the Find feature or running the optional *VP Spelling Checker* application.

Text marked for deletion stays in place but is marked through with strikeout characters. The caret stays just before the deleted word, so you can type the replacement word without repositioning the caret. If you delete a word that is already marked as revised text, that word disappears immediately.

Until you finalize your redlined changes, text marked for deletion is still available. If you decide the original word or phrase is better than its replacement, you can easily remove the redlining marks by using the Character property sheet.

### **The redlining process**

---

After turning on redlining, the Document Editor maintains a record of the changes you make to your document. When you finish editing, you can keep a record of your changes by printing the document showing the redlining marks.

When you finalize the revisions in a document, the Document Editor removes all markings from revised text and deletes text marked for deletion.

Although redlining is a desktop operation, finalizing redlining changes affects only the document you are editing.

You can preview how the document looks with the redlining changes finalized by finalizing redlining on a copy of the document and printing that copy.

## Changes not marked by redlining

---

Redlining affects text edited anywhere in a document, with a few exceptions. In the following cases, no redlining marks appear for revisions, and text you select to delete disappears immediately:

- Changes to headings and footings
- Editing within equation frames
- Font changes
- Editing of simple text, such as text in mail notes or property sheets
- Changes made with the <CASE> key or the <SAME> key

## Exceptions to redlining rules

---

With some Document Editor editing features, the redlining marks for revised or deleted text work differently than described so far.

**Copied text:** Copied text is considered to be revised text. If the text you copy contains deletion marks, those deletion marks do not appear in the copied text; if you want the same characters or words deleted from the copy, you must mark them for deletion.

**Moved text:** Redlining treats a move operation as a copy operation followed by a deletion. The moved text appears at the new location with revised text markings. Redlining strikes through

the source text. Redlining removes from the new location any portions of the source text that already were marked to be deleted.

**Spaces:** Although redlining does not mark changed spaces displayed in the document window, redlining marks appear on spaces when you print the document.

**New-paragraph and new-line characters:** The new-paragraph and new-line characters you revise and delete do not show redlining marks on the screen, although finalizing redlining incorporates the changes you have indicated. You can verify whether a character is revised or deleted by checking the Character property sheet.

**Frames:** Redlining places marks on edited text in text frames and frame captions the same way it marks regular text in a document. While you can delete text within a text frame or caption, you cannot delete a frame anchor while redlining is turned on.

If you want to delete a frame from a document, then redlining off; then delete the frame anchor. Turn redlining on to record additional changes to your documents.

**Graphic objects:** Redlining does not affect text that is part of a graphic object that you copy, delete, or move as a whole. For example, if you select and copy an entire embedded text frame, redlining does not add revision markings to the caption or the text in the frame. However, redlining marks appear on any individual changes you make within the frame.

**Data-driven charts:** When you update a chart produced by *VP Data-Driven Graphics*, new text is marked as revised, and the text it replaces is deleted rather than marked for deletion. For more information about the *VP Data-Driven Graphics* application, refer to the *Graphics Reference* volume in this library.

**The <DEFINE/EXPAND> key:** When you use the <DEFINE/EXPAND> key to replace an abbreviation with its associated expression, the new characters are marked as revised text, and the original abbreviation is deleted rather than marked for deletion.

**Fields and tables:** In fields and tables, new entries are marked as revised text, but text you select for deletion is immediately deleted.

## Redlining commands

---

The desktop auxiliary menu and the content auxiliary menu for each document contain redlining commands. The redlining commands in the desktop auxiliary menu are:

[Turn Redlining On]

Turns on the redlining feature for all documents on the desktop.

[Turn Redlining Off]

Turns off the redlining feature. No further redlining marks are added to any documents on the desktop, but all existing redlining marks remain.

The command available in the content auxiliary menu is:

[Finalize Redlined Revisions]

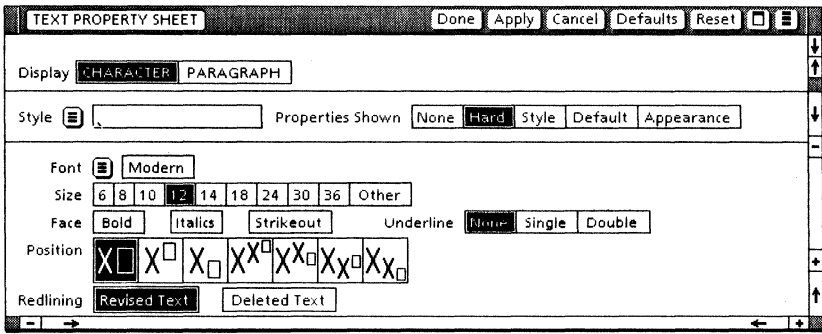
Removes redlining marks from revised text and deletes text marked for deletion. This command only affects the document for which it is selected.



## The Character property sheet: redlining property choices

The Character property sheet (Figure 4-3) includes the **Redlining** property.

Figure 4-3 **The Character property sheet for redlined text marked as revised**



### Redlining

Indicates whether the first character of the selected text is marked as revised text or for deletion.

#### [Revised Text]

Indicates that the first character is revised text that was inserted while redlining was turned on.

#### [Deleted Text]

Indicates that the first character is marked for deletion and will disappear when redlining is finalized.

When you turn redlining on and then edit text, the **Redlining** property setting changes automatically. You can also mark text by selecting it, displaying the property sheet, and selecting [Revised Text] or [Deleted Text] as desired, whether redlining is turned on or off.

---

## Turning redlining on

---

**1 2 3...**

To use redlining, select [Turn Redlining On] in the desktop auxiliary menu.

Redlining is turned on for all documents on the desktop.

---

## Restoring text marked for deletion

---

**1 2 3...**

If you decide to keep text marked for deletion, use the following procedure before finalizing redlined revisions:

1. Select the characters you want to keep.
2. Press <PROP'S>.
3. Deselect [Deleted Text] for the **Redlining** property.
4. Select [Done] or press <PROP'S> to close the property sheet.
5. Delete any revised text that is no longer needed after the original words are restored.

---

## Printing a clean, intermediate version of the document

---

**1 2 3...**

To print a clean copy of the document and retain the redlined version for continued editing, follow this procedure.

1. Copy the redlined document.
2. Finalize the redlined revisions in the copy of the document.

3. Paginate the copy.
4. Print the copy.
5. Delete the copy and continue editing the redlined version.

---

## Finalizing redlined revisions

---

1 2 3...

1. If you need a printed record of the redlining markings, print a copy of the document.
2. Select [Finalize Redlined Revisions] in the content auxiliary menu.
3. Select [Yes] in the message area to confirm that you are ready to remove all text marked for deletion, add all text marked as revised, and have all redlining marks removed from the document.
4. Paginate the document.
5. Print the document.

---

## Turning redlining off

---

1 2 3...

1. To discontinue use of redlining, select [Turn Redlining Off] in the desktop auxiliary menu.
2. Select [Yes] in the message area to confirm that you want redlining turned off.

Redlining is now unavailable for any document on the desktop; however, redlining markings remain in any document containing them.

---

## 5. Define/Expand

The Define/Expand feature simplifies how you put frequently used information into documents. Define/Expand lets you create a dictionary of words, signature blocks, addresses, tables, graphics frames, and other expressions so you can insert them quickly in your documents.

With a few keystrokes, you can recall into your documents such office aids as templates and blank tables. You can even use Define/Expand to bring styled material into your documents; the associated style rules appear automatically on the stylesheet for the document. For information on using style rule properties, refer to the “Styles” chapter in this volume.

Creating large documents, such as this reference volume, is much easier when you use Define/Expand. You can store standard formats for the headings, graphics frames, and tables for easy recall.

---

### Key concepts of Define/Expand

---



With Define/Expand, you:

- Type or select an *expression*—a group of characters you want to be able to repeat easily.
- Define an easy-to-remember abbreviation for the expression.
- With just a few keystrokes, expand the abbreviation to recall the expression into your documents, as often as you need it.

You use the <DEFINE/EXPAND> key, located to the right of the space bar, and expansion dictionaries to define abbreviations and expand them.

**Note:** On the 8010 Information System, you use the <DEFINE/EXPAND> key, located on the keypad to the right of the <SHIFT> key.

## The <DEFINE/EXPAND> key

---

The <DEFINE/EXPAND> key, located to the right of the space bar, serves two purposes:

- It lets you define an abbreviation for an expression you select. When you select an expression in your document and then press <SHIFT> and <DEFINE/EXPAND>, the Define options sheet appears. You define an abbreviation for the expression on the option sheet. The Document Editor stores the defined abbreviation in an expansion dictionary.
- It expands the abbreviation you type into the full expression you defined. When you type or select an abbreviation in a document and press <DEFINE/EXPAND>, the Document Editor looks up the abbreviation in the expansion dictionary and then expands it.

Depending on the Define options sheet settings, the text properties of the expanded expression either match those of the character preceding the expression or retain the properties of the expression stored in the expansion dictionary.

## Expressions

---

An expression is a group of characters you select for later recall in your documents. Expressions can range from a single word to pages of text, graphics, and other frames.

**Note:** A field within text cannot be an expression or part of one; however, the frames you include in expressions can contain fields. For more information about fields, see the “Fields” chapter in this volume.

When including tables within expressions, you can define the character and paragraph properties you want for the text contained within the headers and each cell.

## Abbreviations

---

An *abbreviation* is one or more characters that serve as the “shorthand notation” for recalling an expression. You define a unique abbreviation for each expression in an expansion dictionary.

You create an abbreviation by typing it into your document, optionally selecting the text comprising the abbreviation, and then pressing <DEFINE/EXPAND>. The Document Editor recognizes an abbreviation to be either:

- The text preceding the caret, back to the previous word delimiter (space, comma, period, or frame anchor)
- The text currently selected (highlighted)

When creating an abbreviation, you need to adopt a naming system that will help you remember your abbreviations and the expressions they represent. Also consider naming schemes that let you assign similar abbreviations to groups of expressions with a minimum of keystrokes, such as heading-level abbreviations of h1, h2, and so forth.

**Note:** The Document Editor ignores uppercase and lowercase in abbreviations. For example, if you use the abbreviation CA for California, the Document Editor also recognizes ca, Ca, and cA.

## Expansion dictionaries

---

An expansion dictionary is a document in which the Document Editor stores the expressions and abbreviations you define. You can rename, open, edit, paginate, and print an expansion dictionary as you can any document.

If no expansion dictionary exists when you first use Define/Expand, the Document Editor asks if you want to create one. If you do, the Document Editor creates a dictionary named Expansion Dictionary. This dictionary then becomes the active expansion dictionary.

You can create multiple expansion dictionaries by assigning a unique name to each dictionary the Document Editor creates. Specialized expansion dictionaries are useful for storing lengthy expressions, such as long sections of legal material. Keeping long expressions in a separate dictionary prevents them from slowing down use of routine abbreviations during regular document updating.

### The active expansion dictionary

---

The active expansion dictionary is the dictionary the Document Editor uses when you define new abbreviations and recall expressions. It can be:

- A newly created dictionary
- An existing expansion dictionary that you load using the [Load Expansion Dictionary] command in the desktop auxiliary menu
- An expansion dictionary automatically loaded when you log on, defined in the [Documents] section of your User Profile (refer to the chapter titled "The User Profile" in the *General User Reference* volume in this library for more information)

Only one expansion dictionary can be active at a time. It remains active until you load another

dictionary or log off. If you try to recall an expression with no expansion dictionary loaded, the Document Editor displays a message.

### **The working copy of the active expansion dictionary**

When you load an expansion dictionary, the Document Editor actually loads a working copy of the expansion dictionary. If you add expressions or change the dictionary contents, or if you create a new dictionary, you need to save the dictionary for future use.

When you save an updated copy of an existing expansion dictionary, the copy appears near the lower right corner of the desktop. The copy has the same name as the original version of the dictionary. Delete, rename, or file the original version of the dictionary to avoid confusion.

### **Dictionary contents**

When you open the dictionary document, the dictionary window displays the list of entries you have made. Initially, the entries are arranged in the order in which you entered them. As you add more entries, you will want to rearrange the order so that similar entries are grouped together.

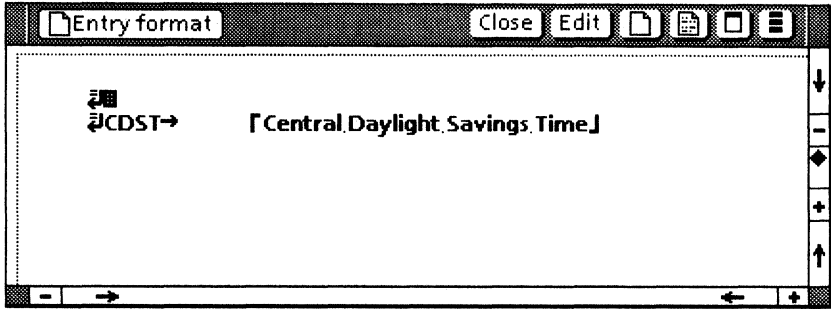
Each entry has the same format (Figure 5-1):

- A new-paragraph character
- The abbreviation
- A tab character
- A field containing the expression

The first two characters you see in Figure 5-1 are the default new-paragraph and page format characters that appear in every document. For information on fields and field bounding characters, refer to the “Fields” chapter in this volume.

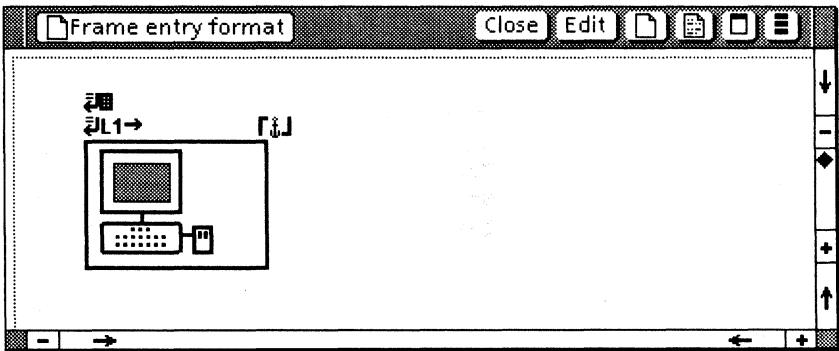


Figure 5-1 Expansion dictionary entry format with structure and non-printing characters displayed



When you enter a frame as an expression, the frame anchor appears inside the field bounding characters, and the frame itself follows the field (Figure 5-2).

Figure 5-2 Expansion dictionary frame entry format with structure and non-printing characters displayed



**Note:** If you include a page break character or a page format character as part of a dictionary entry, that character also affects pagination of the

dictionary document. You counter the effects of these structure characters by:

- Positioning an entry containing a page break character near the bottom of the page, to avoid a short page.
- After an entry containing a page format character, insert another page format character and set its properties to those you want for the dictionary pages.

### **Dictionary usability**

---

Dictionary entries initially appear in the order in which you defined them. You can improve the usability of your dictionary by:

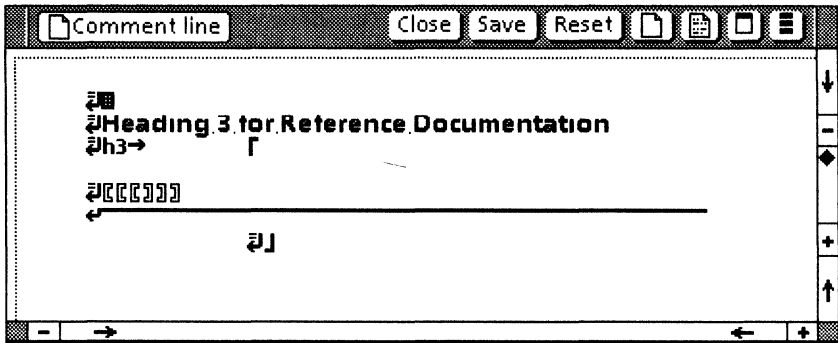
- Reorganizing the entries to group similar types of entries together.
- Adding comment lines to describe individual entries or set off sections of the dictionary.

When reorganizing dictionary entries, be sure to select the entire entry, from the new-paragraph character through the second field bounding character, before pressing <MOVE> or <DEL>.

Comment lines are any lines in the dictionary that do not follow the entry format. Because the Document Editor ignores these lines, you can insert them anywhere you need to describe the contents of the dictionary. In Figure 5-3, the line "Heading 3 for Reference Documentation" is a comment line that identifies the purpose of the expression that follows it.

In this example, the abbreviation h3 expands to an expression that is the template for third-level headings in a reference volume. All spacing, character properties, and table of contents markers are in place for easy addition of text.

Figure 5-3 Comment line introducing an expression that is a heading



Comment lines are especially helpful in identifying frames you may have defined as expressions, if those frames do not have displayed borders.

**Note:** If you edit the dictionary as a document, you need to load the edited version as the active expansion dictionary before you can use it.

## Styled properties with Define/Expand

Define/Expand provides an easy way to customize blank documents to have the character, paragraph, and page format properties you want. When you include character and paragraph style rules in an expression, you automatically assign those style rule properties to the basic text of the document.

For more information about setting style properties using Define/Expand, see the "Styles" chapter in this volume.

## Define/Expand commands

---

The following commands appear in the desktop auxiliary menu.

[Load Expansion Dictionary]

Loads a copy of the selected expansion dictionary document icon as the active expansion dictionary.

[Store Expansion Dictionary]

Stores the active expansion dictionary on your desktop while keeping the working copy loaded. If you have made changes to the working copy of the active expansion dictionary since you loaded it, you must select this command to save those changes.

**Note:** Whenever you select this command, an updated version of the active dictionary appears on the desktop. Delete the old version, rename it, or put it in a folder, to avoid future confusion.

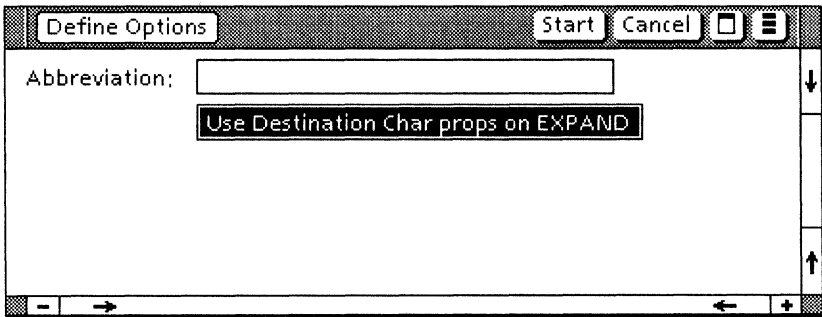
---

## Define options sheet

---

When you select an expression in a document and press <SHIFT> and <DEFINE/EXPAND>, the Define options sheet appears (Figure 5-4). You use this option sheet to define an abbreviation for the selected expression and to determine the text properties of the expression where it is inserted.

Figure 5-4 Define options sheet



---

## Define options sheet commands

---

[Start]

Adds the abbreviation entered in the **Abbreviation** box to the active expansion dictionary.

[Cancel]

Closes the option sheet without adding anything to the active expansion dictionary.

## Define options

---

### **Abbreviation**

Specifies the abbreviation you will use to recall the expression currently selected in the document.

### **Use Destination Char props on EXPAND**

Determines the appearance of the expression when you recall it into a document.

- If selected, the expression appears with the same character properties as the character that precedes the expression in the new document. Use this option when you want the expression to blend in with the text around it.
- If not selected, the expression appears with the character properties it had when you defined it. Use this option for headings and other expressions that should retain their original properties and stand out from the text in the new document.

---

## Creating, adding to, and storing an expansion dictionary

---

**1 2 3...**

After you create or load an expansion dictionary, you can use Define/Expand for all documents on the desktop. If you have not already loaded an expansion dictionary, the Document Editor creates a new one the first time you try to add an expression to a dictionary.

1. Type an expression into a document or find existing characters that you want to store as an expression.
2. Select [highlight] the text and frames you want included in the new expression.
3. Press <SHIFT> and <DEFINE/EXPAND>.
4. If an active expansion dictionary already exists, the Define options sheet appears. If no active dictionary exists, the Document Editor asks if you want to create one. Select [Yes] to create an expansion dictionary, or select [No], load an existing dictionary, and repeat steps 1 through 3. The Define options sheet appears.
5. In the **Abbreviation** box, type the abbreviation you want to use to recall the expression.
6. Choose the appropriate setting for [Use Destination Char Props on EXPAND].
7. Select [Start].
8. Before you log off, select [Store Expansion Dictionary] in the desktop auxiliary menu. The updated dictionary appears on the desktop. If a previous version of the dictionary exists, rename, file, or delete it.

**Note:** If you make several additions to your expansion dictionary, periodically store a new copy of your dictionary onto the desktop. This precaution ensures you will have an updated copy if there is a system failure before you are ready to end the session.

---

## Loading an existing expansion dictionary

---

1 2 3...

Use this procedure to load a dictionary at the beginning of a work session or when you want to change from one active dictionary to another.

1. If an active dictionary already exists and you added or replaced expressions in it, select [Store Expansion Dictionary] in the desktop auxiliary menu. Then rename, file, or delete the original version of that dictionary.
2. Select the expansion dictionary that you want to load.
3. Select [Load Expansion Dictionary] in the desktop auxiliary menu.

If you are replacing an active expansion dictionary, a message asks you to confirm the replacement.

**Note:** The User Profile includes an option for you to designate the name of your primary expansion dictionary. This option can cause the User Profile to automatically load that dictionary each time you log on. Refer to the chapter titled "The User Profile" in the *General User Reference* volume in this library.



---

## Recalling an expression

---

1 2 3...

1. Type the abbreviation for the expression at the location in the document where you want to recall the expression.
2. If the abbreviation is not preceded by a word delimiter such as a space, comma, period, or frame anchor, select the characters comprising the abbreviation. Otherwise, the Document Editor assumes the abbreviation consists of the characters you typed plus all characters preceding them, back to the previous word delimiter.
3. Press <DEFINE/EXPAND>. If you did not select the abbreviation, the Document Editor highlights the text it recognizes as the abbreviation. It then replaces the abbreviation with the expression.

**Note:** If the Document Editor fails to recognize the abbreviation you typed, select the abbreviation again and press <DEFINE/EXPAND>. If the Document Editor fails to recognize a selected abbreviation, make sure the correct expansion dictionary is loaded.

4. If the expression does not have the character properties you want, modify the character properties.

---

## Replacing an existing expression

---

1 2 3...

1. Type a new version of the expression or use Define/Expand to recall the expression into the document and then edit it.
2. Select the new version of the expression.

3. Press <SHIFT> and <DEFINE/EXPAND>.
4. Enter the same abbreviation you used to recall the earlier version of the expression.
5. Choose the appropriate [Use Destination Char Props on EXPAND] setting for this version of the expression.
6. Select [Start].

Define/Expand deletes the old expression from the expansion dictionary and replaces it with the new one. If the old expression included frame anchors, messages ask you to confirm deleting frames that are not visible on the screen.

Select [Yes] to avoid having extra frames within your new version of the expression.

If you select [No], the Document Editor appends the new expression to the frames that remain from the old expression. The next time you recall the expression, it consists of both new and old frames.

To correct the expression, delete the old frames from the document. Then redefine the new expression, repeating steps 2 through 6 of this procedure. Select [Yes] in response to each confirmatory message about deleting the old frames.

---

## Restoring an inadvertently replaced abbreviation

---

1 2 3...

As you continue adding expressions to your expansion dictionary, you may inadvertently duplicate an abbreviation already in use. If so, the original expression is lost from the dictionary.

If you notice that an abbreviation expands into a different expression from the expression you intended:

1. Find an occurrence of the original expression either in the document or in an old copy of the dictionary.
2. Store the expression back into the active expansion dictionary, using a new abbreviation.

Referring to a current printout of your dictionary can help you avoid inadvertently duplicating abbreviations.

---

## 6. Linked text frames

*Linked text frames* enable you to create, design, and edit page layouts in which text columns flow around illustrations and tables. With this feature, you can create attractive, professional-quality documents, reports, brochures, newsletters, and magazine-like layouts.

The linked text frames you create can be anchored or embedded frames. Refer to the chapter titled, "Frames," in *Document Editor Reference* volume 3 in this library for information on the Text Frame properties sheet and procedures common to all frames.

---

### Key concepts of linked text frames

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With linked text frames, you can design document layouts that incorporate standard placement of illustrations within text that flows uninterrupted from paragraph to paragraph. Newspapers use this type of layout when they place columns of information around pictures on a page.

Instead of fitting the text piece by piece, you copy it into your layout with just a few keystrokes. You can also dramatically improve document turnaround time by using the same layout document over and over again with different text and graphics.

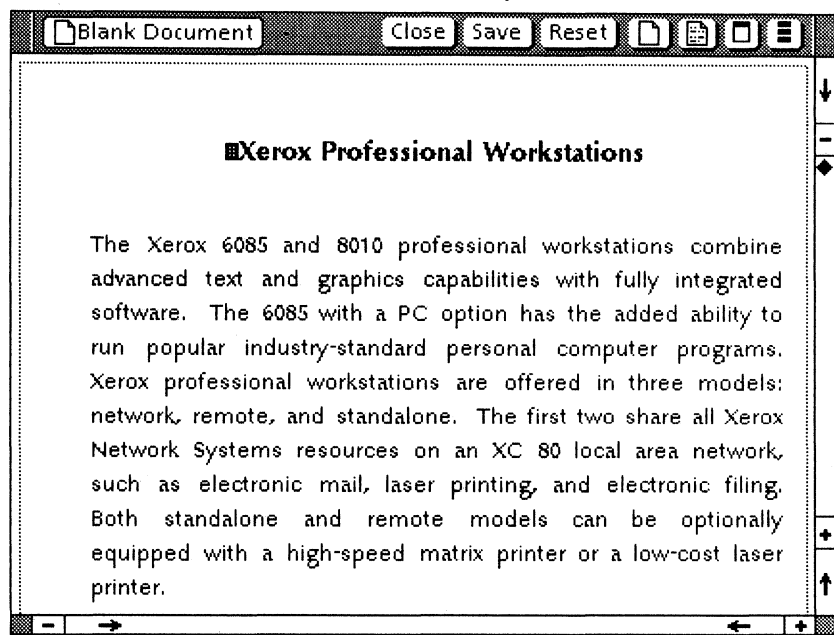
## Text-only and layout documents

To produce a document using linked text frames, you begin with two separate documents:

- A document that contains text
- A layout document that contains frames

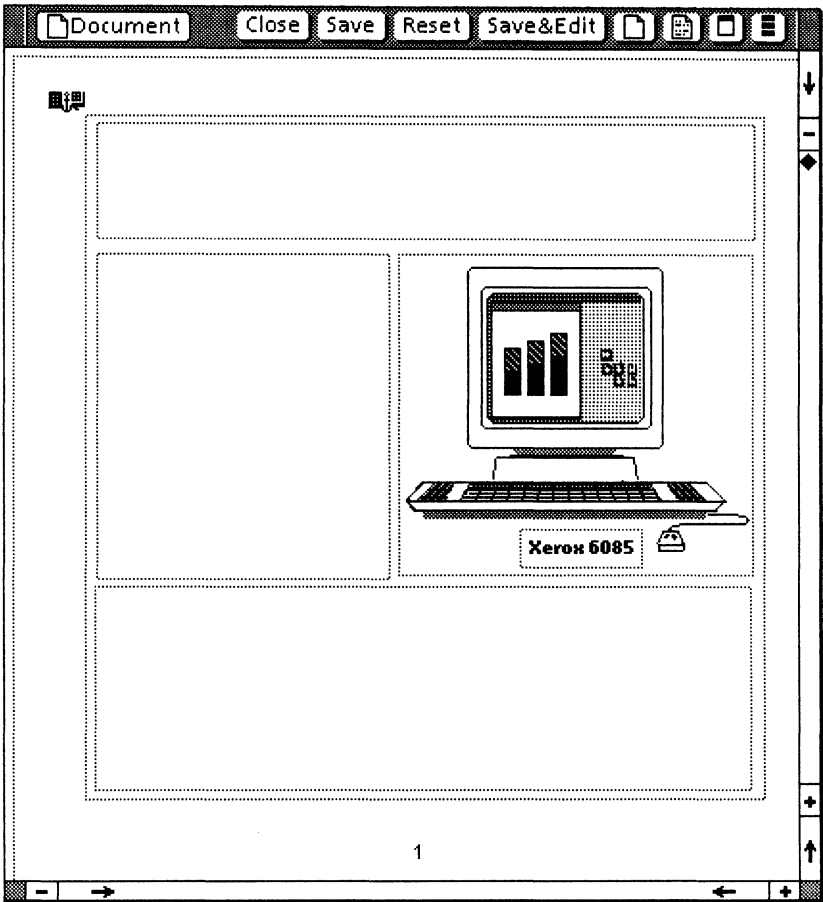
The text-only document (Figure 6-1) contains text that you have created and edited with the Document Editor.

Figure 6-1 A text-only document



The layout document (Figure 6-2) can contain both anchored and embedded frames. Typically, you start the layout document with one or more anchored text frames or anchored graphics frames. Within the anchored frames, you can then embed other types of frames, such as text, graphics, tables, or bitmaps, to achieve the page layout that you want.

Figure 6-2 A layout document, with text and graphics frames



## Text frame fill-in order

After you complete the two documents, you assign a fill-in order to link the text frames in the layout document. You can link two or more text frames together in a document. The text frames can be located on the same page or over several pages in a document.

## Integration of text into the layout

---

To integrate the text into the layout document, you select all of the text in the text-only document and copy it into the first text frame in the fill-in order. Then you select the [Fill Text Frames] command in the content auxiliary menu. The Document Editor fills all of the text frames with text.

You complete the filled layout document (Figure 6-3) by editing it, paginating it, and printing it.

## Linked text frame commands

---

The following commands in the content auxiliary menu apply to creating linked text frames.

### [Edit Text Frame Fill-in Order]

Displays the Text Frame Fill-in Order Editor option sheet. The Document Editor fills text frames according to the order of text frames listed on the option sheet. You can edit the listed text frame fill-in order.

### [End Text Frame Fill-in Mode]

Ends the procedure for setting the fill-in order for text frames. This command appears in the content auxiliary menu when you select [Set Text Frame Fill-in Order].

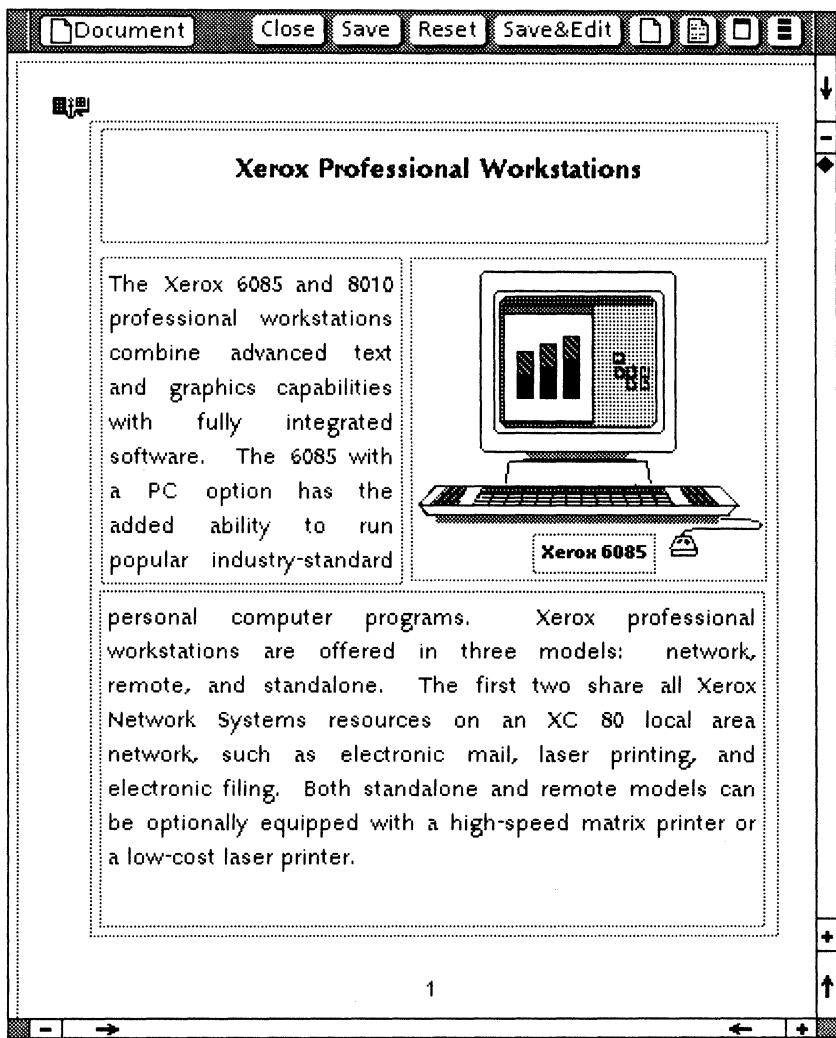
### [Fill Text Frames]

Fills the linked text frames with text in the order specified in the Text Frame Fill-in Order Editor option sheet.

### [Set Text Frame Fill-in Order]

Enables you to specify the fill-in order for linked text frames by selecting each frame in order. This command is replaced by [End Text Frame Fill-in Mode].

Figure 6-3 The filled layout document

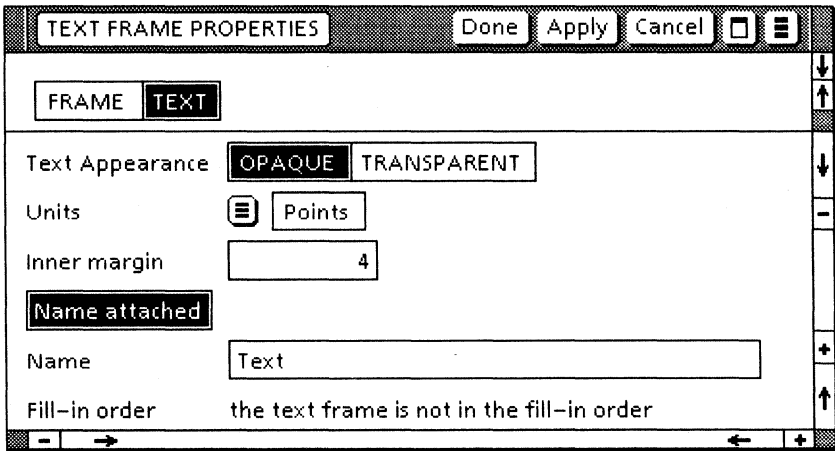




## The Text Frame properties sheet: linked text frame property choices

The Text Frame properties sheet determines the appearance of a text frame. When the **Display** setting is set to [Text] (Figure 6-4), the property sheet lets you assign a name to a text frame and remove a linked text frame from the fill-in order.

Figure 6-4 The Text property sheet for text frame properties



The properties described in this section apply to linked text frames. Refer to the "Frames" chapter in *Document Editor Reference* volume 3 in this library for more information on text frame properties.

### [Name Attached]

When selected, displays the name assigned to the text frame. Two additional properties appear: **Name** and **Fill-in Order**. When you deselect [Name Attached], the text frame is

removed from the fill-in order. The default is [Name Attached] deselected.

### **Name**

Displays the name assigned to the text frame when [Name Attached] is selected. The default name of the text frame is "Text." A text frame in the fill-in order must be named.

You can assign a name to the text frame using the **Name** box, or you can use the [Set Text Frame Fill-in Order] command in the content auxiliary menu.

- If you use the **Name** box to assign the name, you must enter a unique name; the name cannot be used by any other frame in the link.
- If you set the fill-in order using the [Set Text Frame Fill-in Order] command, the Document Editor automatically assigns a unique name and number to the text frame. For example, if the text frame is the third frame in the link, the Document Editor assigns the name "Text3."

A text frame that is not in the fill-in order can be either named or nameless.

### **Fill-in Order**

Displays a number representing the sequence of the text frame in the fill-in order. When a text frame is named but not in the fill-in order, this property displays the message "the text frame is not in the fill-in order." When you detach the name from the frame, the frame is removed from the fill-in order. Use the [Set Text Frame Fill-in Order] or [Edit Text Frame Fill-in Order] command to return a text frame to the fill-in order.

If you move or copy a linked text frame to another document, the name of the moved or copied frame becomes unattached if the name is not unique.

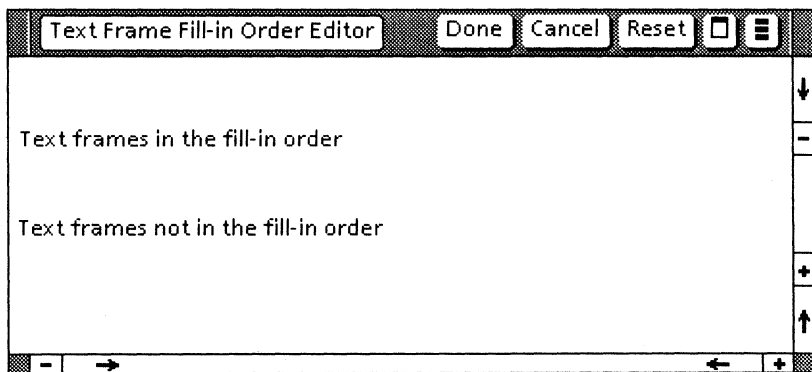
---

## The Text Frame Fill-in Order Editor option sheet

---

The Text Frame Fill-in Order Editor option sheet (Figure 6-5) provides information about text frames that are linked in a document. This option sheet is displayed when you select [Edit Text Frame Fill-in Order] in the content auxiliary menu.

Figure 6-5 **The Text Frame Fill-in Order Editor option sheet**



---

### Text Frame Fill-in Order Editor commands

---

The following command appears in the floating item auxiliary menu of the Text Frame Fill-in Order Editor option sheet.

#### [Show Object]

When you select a text frame listed on the Text Frame Fill-in Order Editor option sheet, the Document Editor highlights the text frame in the document and displays the message, "Text frame is now visible."

## **Text Frame Fill-in Order Editor options**

---

### **Text Frames in the fill-in order**

Lists the text frames that are in the fill-in order.

### **Text Frames not in the fill-in order**

Lists the text frames that are not in the fill-in order but have names attached.

---

## Creating a text-only document

---

**1 2 3...**

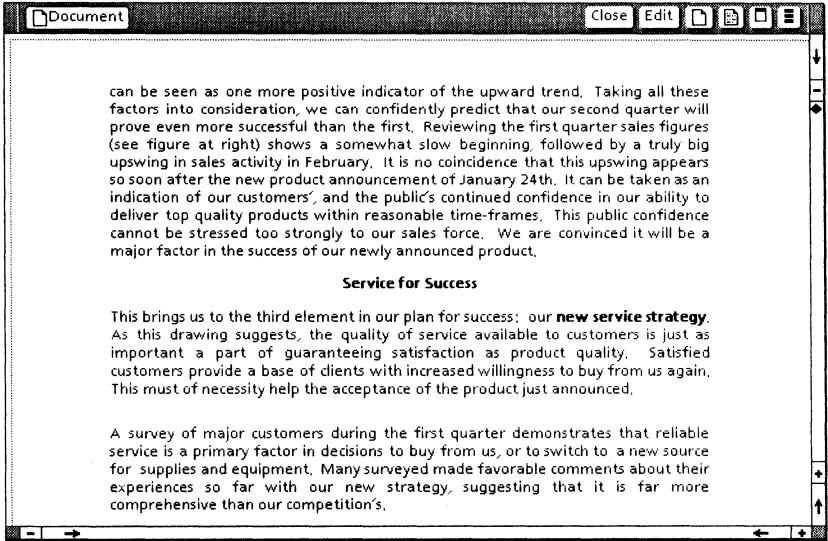
The text-only document contains the text that will eventually fill the linked text frames.

1. Copy a Blank Document icon to the desktop.
2. Rename the Blank Document icon.
3. Open the document icon and place it in edit mode.
4. For the default page format character, set the page format properties that you want for the text-only document on the Page Layout, the Page Headings, and Page Numbering property sheets.
5. Select a location in the document and type your text. Follow these guidelines if you have more than one text frame on a page:
  - Use the new-line character to create inter-paragraph spacing in the text. Do not use the new-paragraph character.
  - Do not insert para-tabs in the text.
  - During text frame fill-in, the text normally fills one frame entirely before it begins filling the next frame in the sequence. Insert a page break character wherever you intend to force the text to move to the next text frame during fill-in.
6. Select the text and set any text properties that you want on the Character property sheet, the Paragraph Layout property sheet, and the Tab-Stop property sheet. Keep the **Before Paragraph** and **After Paragraph** properties set to [Single] on the Paragraph Layout property sheet for an improved text appearance.

7. Paginate the document.
8. Leave the text-only document window open.

Figure 6-6 shows an example of a text-only document with justified text.

Figure 6-6 A text-only document



## Creating a layout document

1 2 3...

To create a layout document, you can insert and size multiple anchored text frames. You can also embed several text frames in an anchored graphics frame. To begin:

1. Copy a Blank Document icon to the desktop.
2. Rename the Blank Document icon.
3. Open the document icon and place it in edit mode.

## Inserting and sizing anchored frames

---

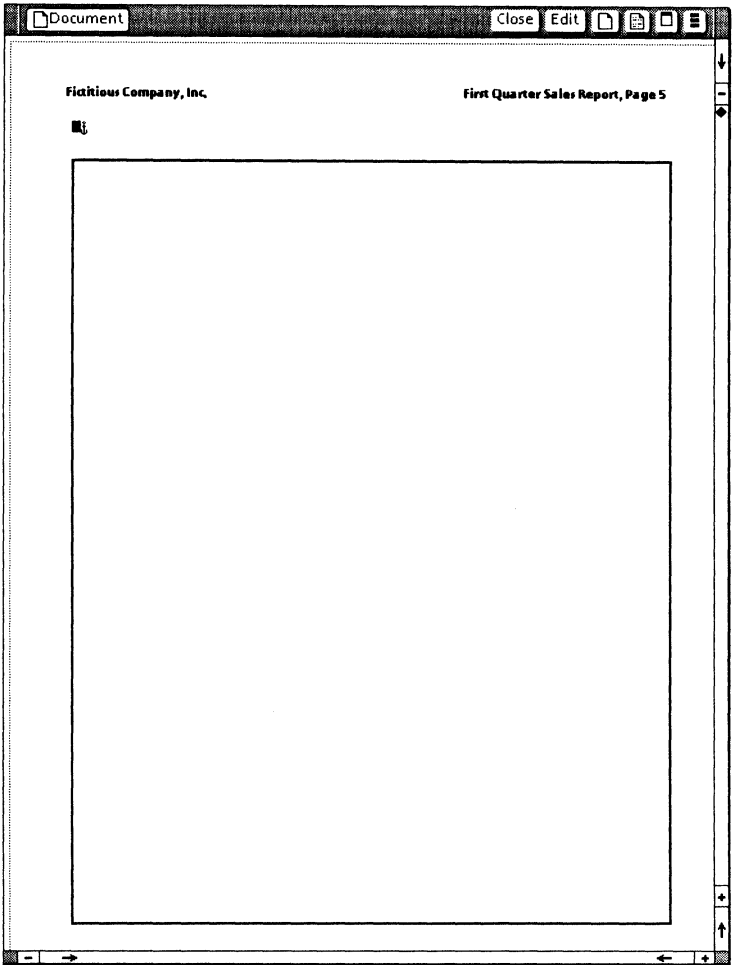
1. For the default page format character, set the page format properties that you want on the Page Layout, Page Headings, and Page Numbering property sheets.
2. Select a location inside the document.
3. To insert each anchored text frame, hold down <KEYBOARD>, press <Special>, and press <S>. Then release <KEYBOARD>.
4. To insert each anchored graphics frame, hold down <KEYBOARD>, press <Special>, and press <A>. Then release <KEYBOARD>.
5. Size and position each anchored frame in the document.
6. Set any frame properties that you want on the associated property sheets.

Refer to the chapter titled "Frames" in *Document Editor Reference* volume 3 in this library for more information.

7. Insert page break characters as necessary.
8. Paginate the layout document and leave it open on the desktop.

Figure 6-7 shows an example of a layout document, with one anchored graphics frame.

Figure 6-7 A layout document with one anchored graphics frame





## Embedding frames in the layout document

---

1. Select a location inside the anchored graphics frame in which you want to embed a frame.
2. To insert each embedded text frame, hold down <KEYBOARD>, press <Special>, and press <S>. Then release <KEYBOARD>.
3. To insert each embedded graphics frame, hold down <KEYBOARD>, press <Special>, and press <A>. Then release <KEYBOARD>.

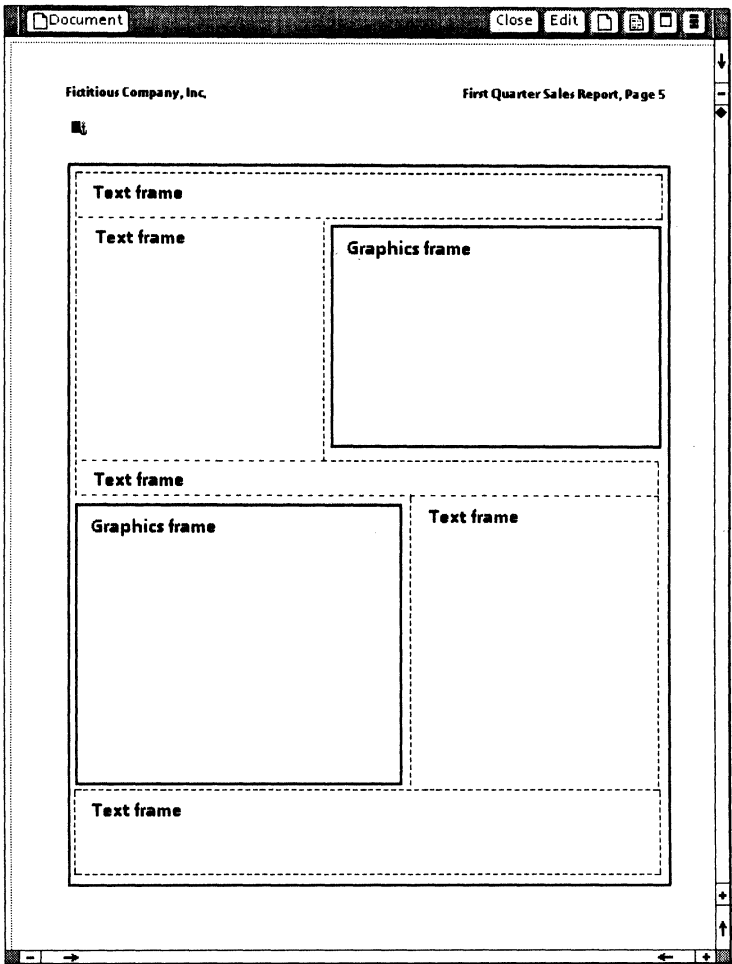
**Note:** You can also copy the embedded frames from the Basic Graphics Transfer Document into the anchored frame. The Basic Graphics Transfer Document is in the Basic Icons divider, in the Workstation divider of the directory.

4. Size and position each embedded frame in the graphics frame.
5. Set any frame properties that you want on the associated property sheets.

Refer to the chapter titled "Frames" in *Document Editor Reference* volume 3 in this library for more information.

Figure 6-8 shows an example of embedded text frames and graphics frames in a layout document.


Figure 6-8 The layout document with embedded text and graphics frames



---

## Setting the fill-in order for text frames

---

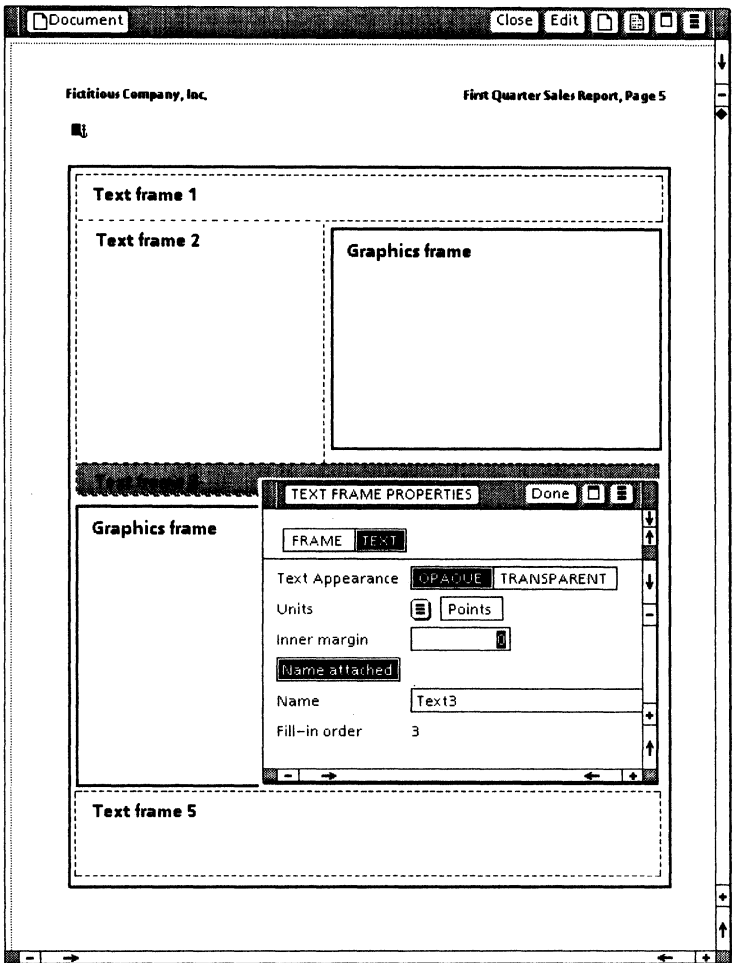


1. With the layout document open and in edit mode, select [Set Text Frame Fill-in Order] from the content auxiliary menu, and select [Yes] to confirm that you want to recreate the fill-in order.
2. Select the first text frame that you would like to fill with text.
3. Select the next frame in the fill-in order.
4. Repeat step 3 for each additional text frame you want to place in the fill-in order. The Document Editor automatically assigns a fill-in order name and number to each text frame in the fill-in order (Figure 6-9).
5. When you finish selecting frames to link, select [End Text Frame Fill-in Order] from the content auxiliary menu. A message tells you how many text frames are now in the fill-in order.

To see the name and fill-in order number for a text frame, display the Text Frame properties sheet for the frame and select [Text] for the **Display** setting. The **Name** box and **Fill-in order** property are displayed on the property sheet. You can change the name attached to the text frame by editing the **Name** property.

**Note:** If you plan to make repeated use of your layout document, close it, copy it, and rename the copy before starting to fill it with text.

Figure 6-9 Example of placing a third text frame in the fill-in order



---

## Filling the linked text frames with text

---

**1 2 3...**

1. Make sure the text-only and layout documents are open, with their contents visible on the desktop. The layout document must be in edit mode. Start with a copy of your layout document, if you plan to work with it repeatedly.
2. Select all of the text in the text-only document and press <COPY>.
3. Select the first text frame in the fill-in order.

**Note:** Each text frame contains a default new-paragraph character. Text from the text-only document is placed after the new-paragraph character in the linked text frame.

4. Select [Fill Text Frames] from the content auxiliary menu. The Document Editor clears the layout document window as it fills the text frames with text from the text-only document. When the document window reappears, the text frames are filled with text.

**Note:** Selecting the [Paginate] or [Simple Paginate] command also fills the remaining text frames with text.

After filling in the text frames, you can edit them individually to modify their appearance. Refer to "Editing linked text frames" next for more information.

Figure 6-10 shows an example of the linked text frames filled with text, and Figure 6-11 shows an example of the completed document.

Figure 6-10 The layout document, with text filled into the linked text frames

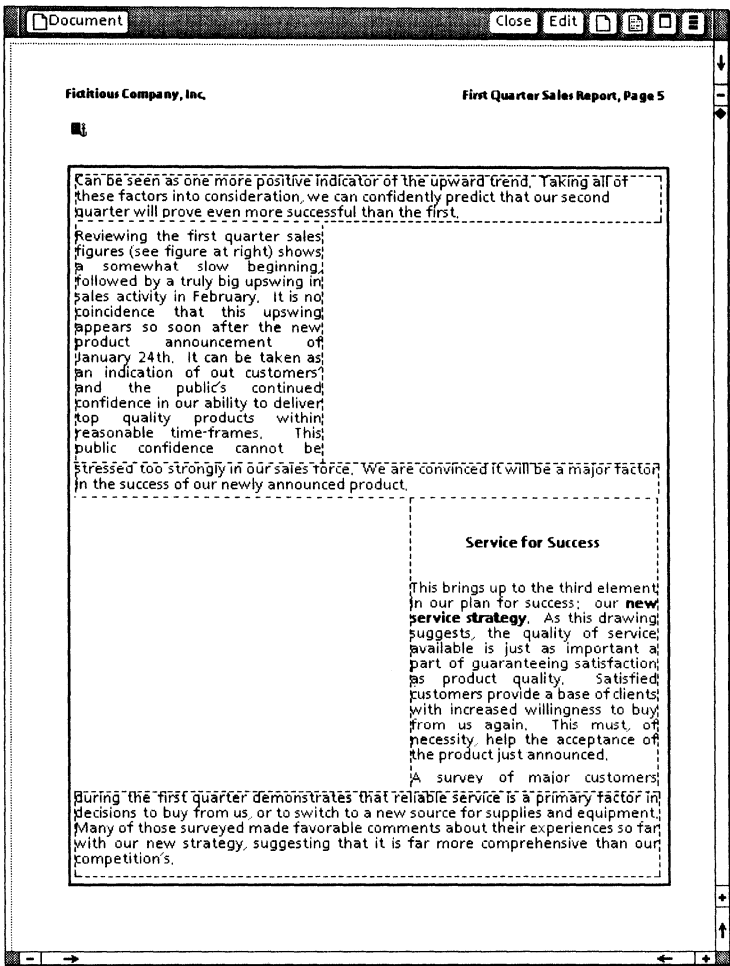


Figure 6-11 The layout document, with final text and graphics

Document Close Edit [Icons]

Fictitious Company, Inc. First Quarter Sales Report, Page 5

can be seen as one more positive indicator of the upward trend. Taking all of these factors into consideration, we can confidently predict that our second quarter will prove even more successful than the first.

Reviewing the first quarter sales figures (see figure at right) shows a somewhat slow beginning, followed by a truly big upswing in sales activity in February. It is no coincidence that this upswing appears so soon after the new product announcement of January 24th. It can be taken as an indication of our customers' and the public's continued confidence in our ability to deliver top quality products within reasonable time-frames. This public confidence cannot be stressed too strongly in our sales force. We are convinced it will be a major factor in the success of our newly announced product.

Month	Sales (in thousands)
January	50
February	100
March	200
April	150
May	250

Dollars in thousands

```
graph LR; A((New Service Strategy)) --- B((Quality Products)); C((Excellent Sales Support)) --- B; B --> D([Satisfied Customer Base]);
```

**Service for Success**

This brings up to the third element in our plan for success: our **new service strategy**. As this drawing suggests, the quality of service available is just as important a part of guaranteeing satisfaction as product quality. Satisfied customers provide a base of clients with increased willingness to buy from us again. This must, of necessity, help the acceptance of the product just announced.

A survey of major customers during the first quarter demonstrates that reliable service is a primary factor in decisions to buy from us, or to switch to a new source for supplies and equipment. Many of those surveyed made favorable comments about their experiences so far with our new strategy, suggesting that it is far more comprehensive than our competition's.

---

## Editing linked text frames

---

**1 2 3...**

After you fill the text frames with text, you may find it necessary to edit the text and refill it into the text frames. You may also want to move or resize the frames to achieve the desired layout. To edit linked text frames:

1. Edit the text by adding, changing, or deleting text in any of the linked frames.
2. Edit the frames by resizing them, moving them, or adjusting their inner margins.

**Note:** For extensive reformatting of linked text frames, start over with a blank layout document.

3. Select [Fill Text Frames] from the content auxiliary menu to reformat the text in the linked text frames.

**Note:** Selecting the [Paginate] or [Simple Paginate] command also reformats the text frames with text.

---

## Changing the fill-in order of the linked text frames

---

**1 2 3...**

**Note:** Use this procedure only if the original order you set for the linked text frames requires modification.

1. With the layout document open and in edit mode, select [Edit Text Frame Fill-in Order] from the content auxiliary menu. The Text Frame Fill-in Order Editor option sheet appears on your desktop.



2. From the Text Frame Fill-in Order Editor option sheet, select the name of the text frame you would like to reorder.

**Note:** To see which text frame the name refers to, select [Show Object] from the floating items auxiliary menu of the Text Frame Fill-in Order Editor option sheet. The Document Editor locates the frame in the layout document, highlights the frame, and displays the message, "Text frame is now visible."

3. Change the fill-in order of the text frames by moving their names on the option sheet, as follows:
  - To change the order of a text frame, select it from **Text frames in the fill-in order**, press <MOVE>, and move it to the correct location in the order.
  - To add a text frame to the fill-in order, select the frame from **Text frames not in the fill-in order**, press <MOVE>, and move it after an appropriate text frame listed in **Text frames in the fill-in order**.
  - To remove a text frame from the fill-in order, select the frame from **Text frames in the fill-in order**, press <MOVE>, and move it after the last text frame listed in **Text frames not in the fill-in order**.
4. Select [Done] to close the option sheet.

---

## Removing a text frame from the fill-in order

---

1 2 3...

1. Select the text frame and press <PROP'S>. The Text Frame properties sheet appears.
2. Select [Text] to display the Text property sheet for text frame properties.

3. Deselect [Name Attached].
4. Select [Done] or press <PROP'S> to close the property sheet.

You can also use the Text Frame Fill-in Order Editor option sheet to remove a text frame from the fill-in order; refer to the previous procedure, "Changing the fill-in order of the linked text frames," for more information.



The styles feature lets you define combinations of properties as a single unit called a *style rule*. If you often use the same sets of properties for multiple documents, styles will save you time by eliminating the need to make individual property choices for every document.

After defining some basic style rules, you can:

- Use a variety of methods to assign the style rules.
- Transfer style rules from document to document.
- Share style rules with other members of your department, to ensure consistency in related documents.

When you have style rules assigned, you can easily change the properties of your entire document by changing the properties of the style rules for the document.

---

## Key concepts of styles

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For each style rule you define, you first specify the character or paragraph properties you want to use. Then you assign the style rule to the document text—either when you create the document or later.

As necessary, you manage your collection of style rules by updating, adding, deleting, and organizing them for easy retrieval.

## Style rules

---

For each document, you can assign multiple style rules. Each style rule is one of two types: a character style rule or a paragraph style rule. When you use style rules, you assign pairs of character and paragraph style rules to text, eliminating the need to assign individual properties with the Character and Paragraph property sheets.

Every document has a special window called a *document stylesheet*, containing one default character style rule and one default paragraph style rule. You can copy and customize these style rules to assign the set of character and paragraph properties you want for your document.

Most documents require only a few pairs of style rules. For example, you probably want the body text in your document to look the same from section to section. You may also want two or three levels of headings in your document. You could name the style rules "body text" and "BODY TEXT" for the pair of character and paragraph style rules governing basic text; "h1" and "H1" for the first heading level; "h2" and "H2" for the second heading level, and so on.

**Note:** The page headings and footings you assign on the Page Headings property sheet cannot be styled. When you copy styled text into a heading or footing, it retains its style properties; however, subsequent style rule changes do not affect the heading or footing text.

## Style rule definition

---

To customize a default style rule, you change its name and properties on the *Style Rule Definition* sheet. In addition, you can create additional style rules on the document stylesheet by copying an existing style rule and then changing its name and its properties. The style rule you copy can even be from the document stylesheet of another document.

After you define and use a style rule, you can further change its properties by modifying them on the Style Rule Definition sheet. The properties change everywhere in the document where the style rule is assigned. With little effort, you achieve consistent changes throughout your document. To change the name of a style rule in use, you use the Global Rename option sheet.

## Style soft keys

---

After you define style rules, you can link those rules to a special set of alternate function keys called the *style soft keys*. When you have style rules linked to style soft keys, you select the text to be styled, then display the Style Soft Keys window and select the key linked to the style rule you want.

## How style rules and hard properties work together

---

The types of properties you can set for your documents are hard properties and style properties. The order in which you set these types of properties determines which type takes precedence within styled document text.

*Hard properties* are properties that you specify individually, either on the Text property sheet or using top-row function keys. In unstyled text, hard properties are set automatically to on or off.

The initial selections for hard properties are the default settings defined by the system. If you

change hard property settings, you can reset them to their default values by selecting the [Defaults] command in the Text property sheet header.

*Style properties* are the character or paragraph properties you assign as a group in a style rule. Style properties assigned to unstyled text override existing settings for hard properties, including default settings.

### **How to view the properties in effect**

---

The lower section of the Text property sheet displays the settings in effect for hard, default, or style properties:

- You can display the hard properties currently in effect by selecting [Hard] for the **Properties Shown** setting.
- You can display the default settings by selecting [Default] for the **Properties Shown** setting.
- You can view style property settings by selecting [Style] for the **Properties Shown** setting. (You cannot change style properties on this display; you must change them on the Style Rule Definition sheet.)
- To see the combination of the hard properties, default properties, and style properties assigned, you select [Appearance] for the **Properties Shown** setting on the Character or Paragraph property sheet. Selecting [Hard], [Default], or [Style] shows only the properties of that type that are selected, not the total effect.

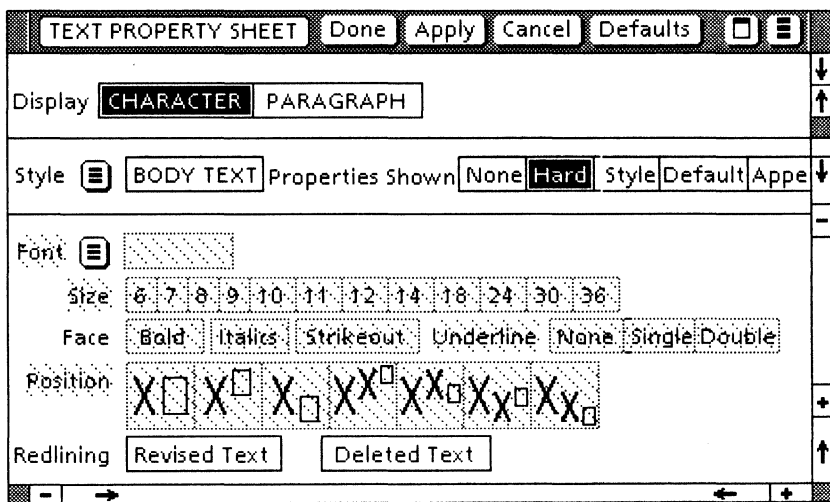
### **How style properties affect hard properties within unstyled text**

---

When you assign a style rule to unstyled text, the hard property settings on the Character or Paragraph property sheet become neutral. When

you display the hard properties, the neutral settings appear with diagonal lines through them (Figure 7-1).

Figure 7-1 **Neutral settings for hard properties after a character style rule is assigned**



Neutral hard properties take on the settings specified by the assigned style rule. If a property is not set by the style rule, that property also appears neutral when you display style properties. In that case, the default settings control the text appearance.

If you redefine the style rule or assign a new style rule to styled text, the neutral hard properties are controlled by the modified or new style rule. If you remove the style rule, the neutral hard properties revert to the default settings.

With style rules in effect, selecting [Defaults] both removes style properties and resets properties to the default settings.



## How hard properties affect styled text

---

You can override style property settings by reassigning hard properties to styled text. The reassigned hard property settings remain selected even if you redefine the current style rule or assign a different style rule. However, you can neutralize the overriding hard property settings so that they can assume newly assigned style rule properties.

## Style rule assignment

---

After you define a style rule within a document, you can assign the style rule to document text by:

- Selecting the style rule from the **Style** property auxiliary menu in the top section of the Text property sheet.
- Selecting the style soft key to which you have linked the style rule.

You can also transfer a style rule into a document from another source, such as a Define/Expand dictionary or another document, and then assign it to document text.

You can assign a character style rule, a paragraph style rule, or both to selected characters or paragraphs. Assigning a character style rule has no effect on paragraph properties; assigning a paragraph style rule has no effect on character properties. The text you select determines the effect of style rule assignment:

- When you assign character and paragraph style rules to a new-paragraph character, they control the properties of all new text that you enter after that character.
- When you assign character and paragraph style rules to selected text, they control the

character and paragraph properties of the selected text and new text that you append.

### **Assignment of style rules to new documents**

---

After you define a set of style rules, you can use them to create all of your documents. You can quickly convert a blank document into a styled document using Define/Expand, as discussed under “Customizing a blank document” later in this chapter.

When you style a blank document, you assign the style rules to the default new-paragraph character and the default page format character. The text you enter automatically has the correct style, and succeeding paragraphs have the same style. When you need a different style, you assign different style rules to the next new-paragraph character.

You can change character style rules within a paragraph to emphasize words—for example, with bold or italics. However, in most cases, it is easier to assign those properties as hard properties after you assign a style rule.

### **Assignment of style rules to existing documents**

---

Styling an existing document is worthwhile if you anticipate changing the format of the document significantly. By converting the properties for headings, body text, or both to style rules, you can then modify the style rules to make document-wide format changes. However, if you do not plan to change the format of an existing document significantly, styling the document probably will not provide any time-saving benefit.

To add style rules to an existing document, you assign character and paragraph style rules to the page format character, the new-paragraph characters, and all existing text. You assign character style rules to all characters they affect. However, you can assign a paragraph style rule to

any character in a paragraph; all characters in the paragraph take on the new style rule.

If you assign a character style rule to the new-paragraph character, the character style rule of the existing characters in the paragraph does not change. However, if you select the new-paragraph character and start typing, the new text assumes the new character style rule.

If the existing text is unstyled and has hard properties you want to retain, you need to style the document section by section to keep track of these hard properties:

- If a section of text has hard properties you want to retain, you select the text with those hard properties, assign to it the style rule or rules you plan to use for body text, and then reassign the hard properties while the text is still selected.
- You then assign the body text style rules to the entire section of text; the reassigned hard properties remain in the text.

### **Assignment of style rules from other sources**

---

You can use one of the following methods to assign a style rule to the current document from another location:

- Copy a style rule from the stylesheet of another document to the stylesheet of the current document.
- Using the Define/Expand feature, expand an abbreviation for an expression that includes style rules. The style rules automatically transfer to the stylesheet of the current document.
- Use the <SAME> key and refer to styled text in another document as the source of the properties. The style rules automatically

transfer to the stylesheet of the current document.

- Move or copy styled text from another document. The style rules automatically transfer to the stylesheet of the current document.

**Note:** If the name of the style rule for the copied or moved text being transferred is the same as the name of a style rule in the current document, the style properties do not transfer. Instead, the copied or moved text adopts the properties of the style rule by that name in the current document.

### **Assignment of undefined style rules**

---

You can assign a style rule to a document but wait until later to define the rule. This capability is helpful if you are still deciding on the properties for the style rule or if you expect to receive a style rule from someone else, but want to enter the text now.

### **Assignment of a different style rule to styled text**

---

If you plan to change from one style rule assignment to another, keep these points in mind:

- Any hard properties you may have assigned to the styled text stay in effect.
- If you assign a different paragraph style rule to even one character in a paragraph, every character in the paragraph takes on the different style rule. Likewise, if you append text to the end of a paragraph, the new text takes on the paragraph style rule of the existing paragraph.
- If you assign a different character style rule to the new-paragraph character, the existing characters in the paragraph retain the original character style rule. However, if you select

the new-paragraph character and then enter new characters, those characters reflect the new character style rule.

If you want to see which style rule is controlling some text, display the Character or Paragraph property sheet for that text.

## Style rule management

---

Here are some techniques to help you use style rules effectively:

- Combine sets of style rules into heading formats and standard formats for paragraphs, such as body text, quotations, and figure captions. Enter those formats into your expansion dictionary for easy accessibility. For more information about expansion dictionaries, refer to the "Define/Expand" chapter in this volume.
- Style a new blank document and then save it as a template. One way to create a template is with Define/Expand; for more information, see "Customizing a blank document" later in this chapter.
- Print a copy of the document stylesheet for each document, to maintain a record of existing style rules. A quick review of your stylesheets can remind you which style rules exist for each document, so you can use them in other documents or reconstruct them if you accidentally delete them. Refer to "Printing a document stylesheet" at the end of this chapter.
- The name you give a style rule must be unique for that type of style rule (character or paragraph). If you want to give a pair of character and paragraph style rules the same name, use uppercase letters for one and lowercase letters for the other to help you distinguish the style rule types.

- Keep style rule names meaningful. If you want to rename a style rule, you use the Global Rename option sheet to rename the rule and every occurrence of it in the document.

**CAUTION:** Never use the Style Rule Definition Sheet to change the name of a style rule in use.

- Delete style rules you no longer need.

**Note:** The styles feature does not let you delete the last character style rule and paragraph style rule.

## Styles command

---

The following command in the document auxiliary menu gives you access to the document stylesheet:

[Show Stylesheet]

Displays the document stylesheet.

## Summary of tools for working with styles

---

Table 7-1 lists the tasks you need to perform for creating and using styles, along with the sheet or window you use for each task. In the second column, the asterisk (\*) indicates that you access the window or sheet through document stylesheet header commands. To perform those tasks, you first need to open the stylesheet with the document in edit mode.

Table 7-1 Summary of tools for using styles

<b>Actions</b>	<b>Sheet or window</b>
Define a new style rule	Style Rule Definition sheet *
Assign style rules to style soft keys	Style Soft Key Assignments window *
Assign a style rule to text or change the style rule that is assigned	Text property sheet <u>or</u> Style Soft Keys window
Change style rule properties	Style Rule Definition sheet *
Rename a style rule	Global Rename option sheet *
Delete a style rule from a document	Document stylesheet
Print the stylesheet	Document stylesheet

## Document stylesheet

Each document has a stylesheet similar to the one in Figure 7-2. You display the stylesheet by selecting the [Show Stylesheet] command in the document auxiliary menu. Using a document stylesheet, you can:

- Define a new style rule.
- Modify properties of an existing style rule.
- Rename a style rule.
- Delete a style rule from a document.
- Assign style rules to the style soft keys.
- Print a copy of the stylesheet.

Each style rule occupies a row in the document stylesheet. The names of the two style rules included with the Blank Document icon are Blank Character Style and Blank Paragraph Style. You can copy these default style rules to create new rules.

Figure 7-2 A sample document stylesheet

RULE TYPE	RULE NAME	DESCRIPTION
CHARACTER	BODY TEXT	OPTIMA 10 BODY TEXT
	HDG1	CHAR RULE FOR HEADING 1
PARAGRAPH	Body Text	Para rule for body text
	Hdg1	Para rule for Heading 1

The stylesheet groups character rules and paragraph rules. You can rearrange the order of the rules by selecting a rule and moving it within its group. You cannot move a rule out of its group.



You can modify a style rule by selecting it, pressing <PROP'S> or <OPEN>, and making selections on the Style Rule Definition sheet. You can also:

- Rename a style rule using the [Rename Style Rule Globally] command, which displays the Global Rename option sheet.
- Assign a style rule to a style soft key using the [Show Style Soft Key Assignments] command, which opens the Style Soft Key Assignments window.

You can delete a style rule you no longer need. However, you cannot delete the last character style rule or paragraph style rule from the stylesheet.

The following commands appear in the stylesheet header and the floating items auxiliary menu:

[Close]

Closes the stylesheet and applies to the document text any changes made to the style rules on the Style Rule Definition sheets for the document.

[Apply Style Changes]

Applies to the document text any changes made to the style rules, but keeps the stylesheet open for further changes.

[Show Style Soft Key Assignments]

Displays the Style Soft Key Assignments window so you can link style rules to the style soft keys.

[Print Stylesheet]

Enables you to print a copy of the stylesheet. The printed copy includes the names, descriptions, and properties of all style rules in a document.

[Rename Style Rule Globally]

Displays the Global Rename option sheet so that you can rename the selected style rule

on the document stylesheet and throughout the document.

## The Style Rule Definition sheet

Each style rule has an associated Style Rule Definition sheet that you display by selecting the rule in the document stylesheet and pressing <OPEN> or <PROP'S>.

Figures 7-3 and 7-4 show the Style Rule Definition sheets for a character style rule and a paragraph style rule, respectively.

Figure 7-3 A sample Style Rule Definition sheet for a character style rule

The screenshot shows a dialog box titled "STYLE RULE DEFINITION" with buttons for "Done", "Apply", and "Cancel". The "Name" field contains "BODY TEXT" and the "Description" field contains "FOR REGULAR BODY TEXT". The "Font" section shows "Optima" selected. The "Size" section has buttons for 8, 10, 12, 14, 18, and Other, with 10 selected. The "Face" section has buttons for Bold, Italic, Strikeout, Underline, None, Single, and Double, with None selected. The "Position" section shows a grid of text boxes with various combinations of bold and italicized 'X' characters. The "Redlining" section has buttons for Revised Text and Deleted Text. The dialog box has a scroll bar on the right and navigation arrows at the bottom.

You use the Style Rule Definition sheet to name the style rule and to describe and define the style rule properties. The description you enter on this sheet will appear in the description column of the document stylesheet.

Figure 7-4 A sample Style Rule Definition sheet for a paragraph style rule

The screenshot shows a dialog box titled "STYLE RULE DEFINITION" with buttons for "Done", "Apply", "Cancel", "Defaults", and "Reset". The "Name" field contains "body text" and the "Description" field contains "for regular text paragraphs".

Under the "Show" section, "Paragraph Layout" and "Tab-Stop" are selected. The "Units" are set to "Points".

The "Alignment" section has "Justified" selected. The "Hyphenation" section has "Use Hyphenation" selected. The "Margins" section has "Left" and "Right" selected. The "Line Height" section has "Single" selected. The "Before Paragraph" section has "Double" selected. The "After Paragraph" section has "Single" selected. The "Keep on" section has "Same Page as Next Paragraph" selected. The "Language" section has a dropdown menu. The "Text Direction" section has "Left To Right" and "Right To Left" selected.

The lower section of the character Style Rule Definition sheet offers you the same property choices as the lower section of the Character property sheet. Similarly, the lower section of the paragraph Style Rule Definition sheet offers you the same property choices as the lower section of the Paragraph property sheet.

You can also display the style rule properties on the Text property sheet for the text that has the style rule assigned. Select [Style] for the **Properties Shown** setting to display the style rule properties in the lower section of the Text property sheet. That display of the properties is read-only.

After the style rule is in use, you can use the Style Rule Definition sheet to modify all of the style rule properties except the name. To change the name of a style rule in use, you must use the Global Rename option sheet.

---

## Style Rule Definition sheet commands

---

### [Done]

Closes the Style Rule Definition sheet and modifies the document stylesheet to show changes made to the name or description of the style rule.

**Note:** Changes to the text do not actually become effective until you select [Close] or [Apply Style Changes] in the document stylesheet header.

### [Apply]

Modifies the stylesheet to show changes to the style rule **Name** or **Description** properties.

**Note:** Changes to the text do not actually become effective until you select [Close] or [Apply Style Changes] in the document stylesheet header.

### [Cancel]

Closes the Style Rule Definition sheet and cancels changes not already applied.

### [Defaults]

Changes the style rule properties back to neutral. For character style rules, the **Name** property changes to "Body text," and the **Description** property changes to "For regular body text." For paragraph style rules, the **Name** property changes to "Body Paragraph," and the **Description** property changes to "For regular body paragraphs."

### [Reset]

Resets the properties to the values specified the last time you selected [Done] or [Apply].

## Style rule properties

---

### **Name**

Specifies the style rule name to be used whenever you want to assign the style rule to text. When you initially define a style rule, assign a name of your choice. This name appears on the document stylesheet.

A document cannot have two character style rules or two paragraph style rules with identical names. However, you can give a paragraph style rule the same name as a character style rule.

### **Description**

Describes the purpose of the style rule.

The remaining properties are identical to those in the lower section of the corresponding Character or Paragraph property sheet. These choices specify properties associated with the style rule. For more information on character and paragraph properties, refer to the “Character properties” and “Paragraph properties” chapters of *Document Editor Reference* volume 3 in this library.

---

## The Style Soft Keys window

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The Style Soft Keys window (Figure 7-5) displays alternate function keys you can use to assign style rules to document text.

To display the Style Soft Keys window, you select text, hold down <SHIFT>, and then hold down <PROP'S>. The appearance of the Style Soft Keys window is similar to that of the window shown in Figure 7-5. To link style rules to these keys, you use the Style Soft Key Assignments window, discussed next in this chapter.

Figure 7-5 The Style Soft Keys window



**Note:** The 6085 Professional Computer System displays a row of ten keys; the 8010 Information System displays a row of eight keys.

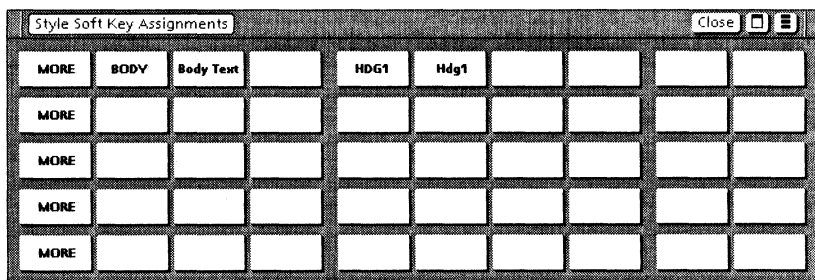
Five rows of keys are available in this window. You see only one row at a time; to see the next row, select or press <MORE>.

You need not assign all style rules to style soft keys.

## The Style Soft Key Assignments window

The Style Soft Keys Assignment window enables you to assign style rules to the style soft keys. You display this window by selecting [Show Style Soft Key Assignments] in the header of the document stylesheet (Figure 7-6). You cannot use this window to assign style rules to text; you use the style soft keys themselves to assign style rules.

Figure 7-6 The Style Soft Key Assignments window



You can also use this window to delete a style rule from a style soft key while retaining the style rule in the document stylesheet and wherever it is assigned in the document. Deleting a style rule from the document stylesheet also deletes the style rule from the style soft key to which it was assigned.

When reviewing your style soft key assignments in the Style Soft Key Assignments window, you can see all five rows of style soft keys at once. The top row of the Style Soft Key Assignments window corresponds to the first row you see when you display the Style Soft Keys window; the second row corresponds to the row you see when you press <MORE> once, and so on.

---

## Text property sheet: style rule properties

---

The Text property sheet has two associated property sheets: the Character property sheet and the Paragraph property sheet. The properties selected on these property sheets are affected when you assign style rules to text.

Figure 7-7 shows an example of style rule properties displayed on the Character property sheet.

### **Style**

Displays the name of the character or paragraph style rule, if any, assigned to the selected text. An auxiliary menu lists the name of the available style rules.

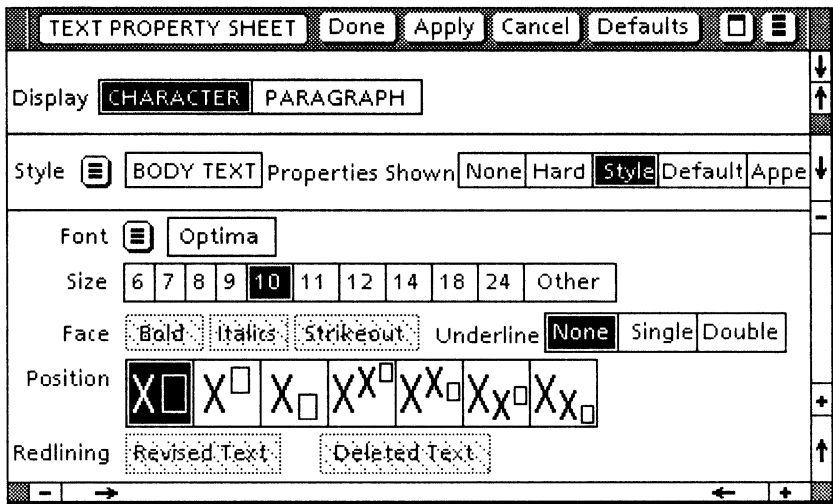
### **Properties Shown**

Determines what information is shown in the lower section of the property sheet.

[None]

Displays no additional properties. [None] is the default setting when no hard properties are assigned.

Figure 7-7 Character property sheet with style rule properties displayed



#### [Hard]

Displays, in the lower section of the property sheet, the hard character or paragraph properties in effect for the selected text. With a style rule in effect for the selected text, all hard properties appear neutral except for those hard properties set after the style rule was assigned.

**Note:** [Hard] is the only choice that enables you to change properties.

#### [Style]

Displays, in the lower section of the property sheet, the character or paragraph properties of the style rule in effect for the selected text. If no style rule is assigned to the selected text, all properties in the lower section of the property sheet appear neutral.



[Default]

Displays, in the lower section of the property sheet, the default property settings for characters or paragraphs.

[Appearance]

Displays, in the lower section of the property sheet, the combined character or paragraph properties that are applied to the selected text. [Appearance] combines hard properties (including default settings) and style rule properties.

[Set to Neutral]

Resets a hard property within styled text to the neutral setting. This setting appears only when you position the pointer on a hard property setting and hold down both mouse buttons. Figure 7-8 shows an example of this setting on the Paragraph property sheet.

For information on the remaining properties, refer to the “Character properties” and “Paragraph properties” chapters of *Document Editor Reference* volume 3 in this library.

---

## The Global Rename option sheet

---

The Global Rename option sheet (Figure 7-9) enables you to change the name of a style rule that already is assigned to text in your document. You display this option sheet by displaying the document stylesheet, selecting the style rule to be renamed, and selecting [Rename Style Rule Globally] in the stylesheet header.

The Global Rename option sheet changes all references to the style rule name in the document. The text keeps the properties of the original style rule while referring to the new style rule name.

Figure 7-8 The [Set To Neutral] option shown on a Paragraph property sheet

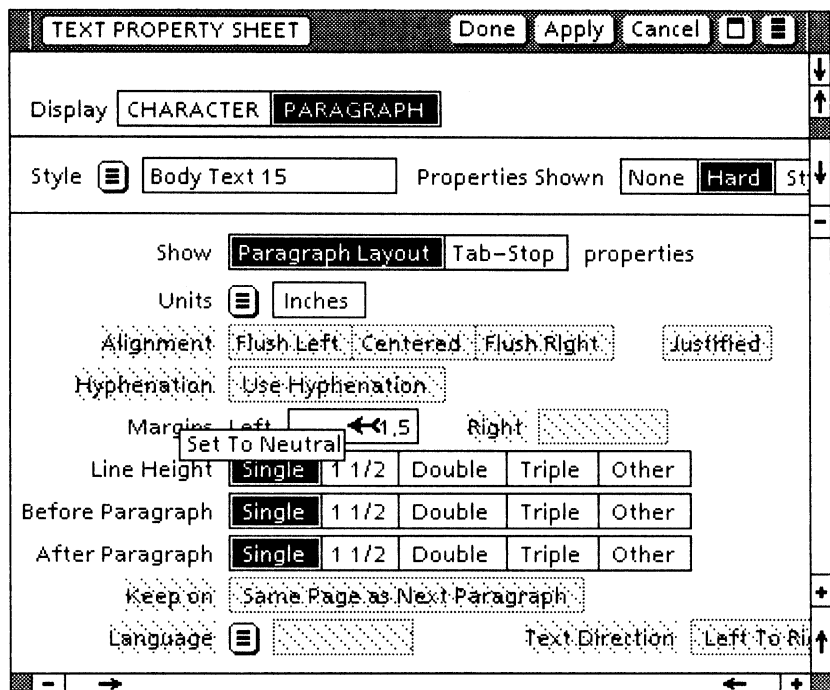
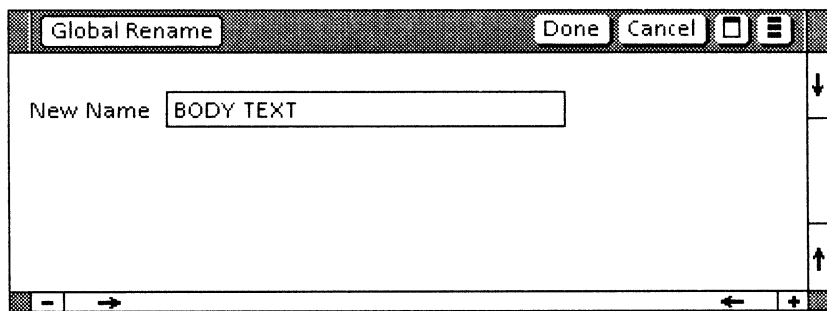


Figure 7-9 Global Rename option sheet



## Global Rename option sheet commands

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### [Done]

Starts the renaming process. The Document Editor searches the document for every reference to the original style rule name and replaces the original name with the name in the **New Name** option box. Only the style rule name changes, not the associated properties.

If the style rule is assigned to a style soft key, the name on the key cap changes to the new name.

### [Cancel]

Cancels the attempt to rename the style rule and closes the option sheet.

## Global Rename option

---

### **New Name**

Specifies the new name of the style rule. The name must be unique among style rules of the same type in the document.

## Defining a style rule

1 2 3...

Although the following procedure directs you to copy and alter one of the default style rules, you can, instead, copy any style rule and modify it. The style rule can be from the same document or from another document.

1. With a document open and in edit mode, select [Show Stylesheet] in the document auxiliary menu. The document stylesheet appears.
2. Select the Blank Character Style style rule and press <COPY>.
3. Select the location of the new style rule. A new character style rule named "Copy of Blank Character Style" appears in the stylesheet as shown in Figure 7-10.

Figure 7-10 **Blank document stylesheet with an additional character style rule**

RULE TYPE	RULE NAME	DESCRIPTION
CHARACTER	Blank Character Style	
	Copy of Blank Character Style	
PARAGRAPH	Blank Paragraph Style	

4. Select the new style rule and press <OPEN> or <PROP'S> to display the Style Rule Definition sheet.

5. Replace “Copy of Blank Character Style” in the **Name** property with the name you want to assign to the new style rule.

**Note:** The name can be up to 40 characters of simple text. You cannot assign a name identical to the name of another style rule of the same type (character or paragraph) in the same document.

6. Type into the **Description** property a brief description of the style rule. This description will appear on the document stylesheet.
7. Select the properties to be associated with the style rule.
8. Select [Done] in the header of the Style Rule Definition sheet. The sheet closes, and the name and description of the style rule change on the stylesheet to the words you assigned.
9. Repeat this procedure using the Blank Character Style or Blank Paragraph Style style rule until you have the set of style rules you plan to use with the document.

**Note:** When defining a paragraph style rule, remember to change the tab-stop display if you want the paragraph to have different tab settings from the default settings.

10. If desired, assign the style rule to a style soft key as discussed under “Assigning style rules to the style soft keys” next in this chapter.
11. Close the document stylesheet.

After you define a style rule, you can transfer it to other documents by:

- Moving or copying it to other document stylesheets

- Using <SAME> to refer to styled text in the current document as the source of properties for text in another document
- Moving or copying styled text from the current document into another document
- Storing styled formats in a Define/Expand dictionary to recall the style rules into other documents; refer to “Storing styled formats in an expansion dictionary” later in this chapter for more information

Each style rule must have a unique name within a document.

---

## Assigning style rules to the style soft keys

---

1 2 3...

You do not need to assign every style rule to a style soft key. The style soft keys are useful for styling an existing document or assigning a different style rule to styled text. In most other cases, you can use the Text property sheet or the Define/Expand feature to style a document you are creating.

---

## Making a style soft key assignment

---

1. With the document open and in edit mode, select [Show Stylesheet] in the document auxiliary menu.
2. Select [Show Style Soft Key Assignments] in the document stylesheet header.
3. Select a style rule on the stylesheet and copy it to the key cap you want linked to that style rule.

**Note:** The top row of style soft keys always shows first when you display the style soft keys. Therefore, assign the most frequently used rules to the top row of key caps. You

can always move a style rule assignment from one key cap to another.

4. Repeat step 3 to assign additional style rules to other style soft keys.
5. Select [Close] in the Style Soft Key Assignments window header.
6. Select [Close] in the stylesheet header.

The next time you display the style soft keys, the names of the style rules will appear on the key caps.

**Note:** Renaming a style rule using the Global Rename option sheet also changes the style rule name on the style soft key linked to that style rule.

## Deleting a style soft key assignment

---

**Note:** Use this procedure to remove a style rule name from a style soft key, while retaining the style rule on the document stylesheet and within the document. To delete a style rule altogether, refer to “Deleting a style rule” later in this chapter.

1. With the document open and in edit mode, select [Show Stylesheet] in the document auxiliary menu. The document stylesheet appears.
2. Select [Show Style Soft Key Assignments] in the document stylesheet header.
3. Select the key cap that has the style rule name you want to remove.
4. Press <DEL>. The key becomes blank, but the style rule still exists in the document stylesheet and anywhere it is assigned.

5. Select [Close] in the headers of the Style Soft Key Assignments window and the document stylesheet.

---

## Storing styled formats in an expansion dictionary

---

1 2 3...

You can store formats for body text, headings, and entire documents in a Define/Expand expansion dictionary.

### Preparing the format

---

If you are storing a new-paragraph character for body text, make sure it includes the character and paragraph style rules you want. If you are storing a blank document format, make sure the new-paragraph character and page format character have the character and paragraph style rules you want.

If you are storing a heading format, use the following procedure to copy the format without any text included:

1. Copy the styled heading that has the format you want to store. Include any table of contents markers if you are using the *VP Long Documents Table of Contents Generator*. In addition, include the new-paragraph character for the body text that follows the heading.
2. Ensure that the structure and non-printing characters preceding the heading text have the same character style rule as the heading text.
3. Delete the heading text from the copy so that the format consists only of structure characters, non-printing characters, and properties.



4. Ensure that the new-paragraph character for the body text that follows the heading includes the character and paragraph style rules for body text.

## Storing the format

---

1. Select the characters comprising the format you want to store.
2. Press <SHIFT> and <DEFINE/EXPAND>.
3. Enter an abbreviation on the Define options sheet to represent the format.
4. Deselect [Use Destination Char props on EXPAND].
5. Select [Start].

For more information on using the Define/Expand feature, refer to the "Define/Expand" chapter in this volume.

---

## Assigning style rules to a new document

---

1 2 3...

Use any of the following procedures to assign style rules to the default characters of a new document.

## Using the Text property sheet

---

1. Define the style rules you need, or transfer them to your document stylesheet from another source. Refer to "Defining a style rule" earlier in this chapter for more information.
2. Select the new-paragraph character and the page format character.
3. Press <PROP'S>.

4. Select the paragraph style rule you want to assign from the **Style** property auxiliary menu.
5. Select [Character] for the **Display** setting.
6. Select the character style rule you want to assign from the **Style** property auxiliary menu.
7. Select [Done].
8. Type text until you need a different set of style rules. Then, insert a new-paragraph character and repeat this procedure for the new style rules.

## Using style soft keys

---

1. Define the style rules you need, or transfer them to your document stylesheet from another source. Refer to “Defining a style rule” earlier in this chapter for more information.
2. Assign the style rules to the style soft keys. Refer to “Assigning style rules to the style soft keys” earlier in this chapter for more information.
3. Select the new-paragraph character and the page format character.
4. Hold down <SHIFT> and then hold down <PROP’S> to display the Style Soft Keys window; you may release <SHIFT> at any time after this point.
5. Still holding down <PROP’S>, select or press the style soft key for the character or paragraph style rule you want. If the style soft key you want is not visible, select or press <MORE> until the key appears in the window.
6. Still holding down <PROP’S>, select the style soft key for the other type of style rule

(character or paragraph) you want for the new text, as needed.

7. Release <PROP'S> to remove the Style Soft Keys window.

Then you can start typing the text.

8. Repeat steps 3 through 7 each time you need to assign different style rules to the text you are typing.

## Using <DEFINE/EXPAND>

---

You can recall style rules from a Define/Expand dictionary into your documents, as discussed in the following procedure. You can also use Define/Expand to transfer styles to the default characters of a blank document; see "Customizing a blank document" later in this chapter.

1. Make sure the currently loaded expansion dictionary includes the formats you want to recall. Refer to "Storing styled formats in an expansion dictionary" earlier in this chapter for information on storing style rules in a dictionary.
2. Type the abbreviation for the new-paragraph character, heading format, or other format that has the style rules you want to use.
3. Press <DEFINE/EXPAND>.
4. Repeat steps 2 and 3 for each set of style rules you want to recall into your document.

The style rules that you recalled are now transferred to the stylesheet for your document.

5. Assign style rules to the default characters in your document, using the Text property sheet or the style soft keys.

6. Type your document text and assign different style rules as needed, using the Text property sheet or the style soft keys.

---

## Assigning style rules to existing text

---

1 2 3...

Use any of the following procedures to assign style rules to an existing document. The fastest way to style an existing document is section by section, where each section requires one style rule or one pair of style rules.

**Note:** To create style rules that match the properties in the document, you need to view the text properties, decide which are the most commonly used, and convert them to style rules. However, you cannot display a document stylesheet and a text property sheet at the same time for the same document. Instead:

- Display a stylesheet for a blank document while you view Text property sheets for the existing document.
- Create your style rules on the blank document stylesheet.
- Move or copy the style rules to the stylesheet of the existing document.

---

## Using the Text property sheet

---

1. Make sure all necessary style rules are defined on the document stylesheet.
2. Identify a section of text you want to style.
3. Before you assign the body text style rules to the section of text, scan the text for bold face, italics, or any other hard properties that you want to retain in words that are part of the body text. If you find text that is to retain hard properties, refer to “Reassigning hard properties to styled text” later in this

section before continuing with this procedure.

4. Select the section of text you identified in step 2 and press <PROP'S>.

**Note:** Be sure to include in your selection all structure and non-printing characters immediately preceding the section of text, so that any new text entered directly after those characters will be styled.

5. Select a character or paragraph style rule from the **Style** property auxiliary menu.
6. If you want to assign the other type of style rule (character or paragraph) to the selected text, select the appropriate choice for the **Display** setting and then select the style rule from the **Style** property auxiliary menu.
7. Select [Done] or press <PROP'S> to close the property sheet.
8. Repeat steps 2 through 7 for each section of text you need to style.

## Using style soft keys

---

1. Make sure all necessary style rules are assigned to the style soft keys.
2. Identify a section of text you want to style.
3. Before you assign the body text style rules to the section of text, scan the text for bold face, italics, or any other hard properties that you want to retain in words that are part of the body text. If you find text that is to retain hard properties, refer to "Reassigning hard properties to styled text" later in this section before continuing with this procedure.

4. Select the section of text you identified in step 2.

**Note:** Be sure to include in your selection all structure and non-printing characters immediately preceding the section of text, so that any new text entered directly after those characters will be styled.

5. Hold down <SHIFT> and then hold down <PROP'S> to display the Style Soft Keys window; you may release <SHIFT> at any time after this point.
6. Still holding down <PROP'S>, select or press the style soft key for the character or paragraph style rule you want. If the style soft key you want is not visible, select or press <MORE> until the key appears in the window.
7. Still holding down <PROP'S>, select the style soft key for the other type of style rule (character or paragraph) you want for the selected text, as needed.
8. Release <PROP'S>. The Style Soft Keys window disappears.
9. Repeat steps 2 through 8 for each section of text you need to style.

## Using the <SAME> key

---

The <SAME> key transfers only one style rule at a time. The style rule that is transferred depends on the first character in your text selection and the way you select the text. Table 7-2 shows which rule transfers with the various selection methods.

Table 7-2 **Type of style rule transferred by the <SAME> key**

<b>Selection method</b>	<b>First character in the selection</b>	<b>Style rule transferred</b>
Select-adjust	Text character or new-paragraph character	Character style rule
Single-click	Text character or new-paragraph character	Character style rule
Four-click	New-paragraph character	Paragraph style rule
Four-click and extend-select to more paragraphs	New-paragraph character	Paragraph style rule

**Note:** If the text you are styling includes hard properties you want to retain, use the Text property sheet or the style soft keys, rather than <SAME>, to style the text.

1. Select the text using one of the methods in Table 7-2.
2. To transfer a character style rule, point to a text character that has the character style rule you want.
3. To transfer a paragraph style rule, point to any character in a paragraph that has the paragraph style rule you want.

### **Using <DEFINE/EXPAND> to style headings**

---

1. Make sure the currently loaded expansion dictionary includes the heading formats you want to use.
2. Select the location just before or after the unstyled heading.

3. Type the abbreviation for the styled heading format you want to use.
4. Press <DEFINE/EXPAND> to recall the heading format.
5. Move or copy the heading text into the new format.
6. With the heading text still selected, press <SAME> and select the new-paragraph character for the heading format.
7. Delete any extra characters remaining from the heading.

## **Reassigning hard properties within styled text**

---

In each section of an existing document you are styling:

1. Select the word or phrase that is to retain hard properties.
2. Assign the body text character style rule, using either the Text property sheet or the style soft keys.
3. Reassign the hard properties to the word or phrase.

**Note:** With the style rules assigned to style soft keys, you can complete steps 2 and 3 by pressing or selecting a top-row function key twice, once with <SHIFT> and <PROP'S> selected and once after releasing <SHIFT> and <PROP'S>.

Then style the entire section of text following the procedures under "Using the Text property sheet" or "Using style soft keys" earlier in this section.



---

## Assigning an undefined style rule

---

1 2 3...

Use the following procedure to assign a style rule that you will define later.

1. Select the text or new-paragraph character.
2. Press <PROP'S>.
3. Type the name of the currently undefined style rule into the **Style** property box of the Character or Paragraph property sheet.
4. Select [Done]. The undefined style rule does not affect the current properties of the document.
5. Later, use the Style Rule Definition sheet to define properties for the new style rule.

---

## Assigning a different style rule to styled text

---

1 2 3...

1. Select the text using one of the following methods:
  - Select-adjust the text characters if you want to change the character style rule.
  - Select any character in the paragraph if you want to change the paragraph style rule for a single paragraph.
  - Select the first paragraph with four clicks and extend the selection to the last paragraph to change the paragraph style rule for several paragraphs.
2. Assign the style rule using either the Text property sheet, the style soft keys, or <SAME>.

---

## Changing the properties of a style rule

---

**1 2 3...**

1. With a document open and in edit mode, select [Show Stylesheet] in the document auxiliary menu.
2. Select the style rule you want to modify and press <OPEN> or <PROP'S>.

**CAUTION:** Although the **Name** property is highlighted, do not change the style rule name with this procedure. Use the next procedure, "Renaming an already assigned style rule," to change the style rule name.

3. Change the description if necessary.
4. Select new values for the properties you want to change.
5. Select [Done].
6. Select [Apply Style Changes] in the stylesheet header if you want to review the effects of the changes before closing the stylesheet.

**Note:** This step (or closing the document) takes time for long documents. The Document Editor searches the document and updates the appearance of all text controlled by the modified style rule.

7. Select [Close]. This step applies any changes not already applied.

---

## Renaming an already assigned style rule

---

**1 2 3...**

When you change the name of an already assigned style rule, the Document Editor replaces the old name on the document stylesheet, anyplace it is referred to throughout the document, and in the style soft keys. The styles feature makes those changes automatically when you use this procedure:

1. With the document open and in edit mode, select [Show Stylesheet] in the document auxiliary menu.
2. Select the style rule you want to rename.
3. Select [Rename Style Rule Globally] in the header of the stylesheet or in the floating items auxiliary menu.
4. Delete the current style rule name from the **New Name** option on the Global Rename option sheet and enter the new name.
5. Select [Start].
6. Select [Close] in the stylesheet header to return to the document.

**Note:** Never use the Style Rule Definition sheet to change the name of a style rule in use. If you do, and then close the stylesheet, the text referring to that style rule name returns to the default properties. A message informs you that the deleted style rule is still used in the document.

When you reopen the stylesheet, the description of the original style rule name on the stylesheet changes to "\*\*\*Undefined but referenced\*\*\*." If this happens, you need to reset the original properties on the Style Rule Definition sheet with the original name. Then delete the new style rule name from the document stylesheet. Last,

change the name of the original style rule using the Global Rename option sheet, as discussed next.

---

## Setting an individual hard property to neutral

---

1 2 3...

If you assign a hard property to styled text and then change your mind, use this procedure to neutralize the hard property.

1. Select the text that has the hard property to remove and display the Character or Paragraph property sheet as appropriate.
2. For **Properties Shown**, select [Hard].
3. Position the pointer on the hard property that you want to neutralize and hold down both mouse buttons. The pointer changes to a horizontal arrow. [Set To Neutral] appears near the property, as illustrated earlier in Figure 7-8.
4. Move the pointer into the [Set To Neutral] setting and release both mouse buttons. The property setting changes to neutral.

**Note:** Neutral settings are only for text having an associated style rule. If you choose [Set To Neutral] on unstyled text, the neutral markings still appear. However, when you select [Done] or [Apply], the neutral settings change to a hard property that matches the default setting for the property.

---

## Deleting a style rule

---

1 2 3...

1. Select [Show Stylesheet] in the document auxiliary menu.

2. Select the style rule you want to delete. You cannot delete the last character style rule or the last paragraph style rule on the stylesheet.

**Note:** Be sure you are not deleting a style rule that is still used within the document.

3. Press <DEL>. The style rule disappears from the stylesheet. If the style rule is assigned to a style soft key, pressing <DEL> also removes the style rule from the style soft key.
4. Select [Close] in the stylesheet header to close the stylesheet and return to the document.

If you delete a style rule that has references in the document, selecting [Close] or [Apply Style Changes] displays the message: "A deleted style is still referenced and has been recreated." The name of the style rule remains in the stylesheet. The description changes to "\*\*\*Undefined but referenced\*\*\*" and all properties for the style rule change to neutral settings.

You must reset the original properties on the Style Rule Definition sheet or assign a different style rule to the text that still refers to the rule you wanted to delete.

---

## Customizing a blank document

---

1 2 3...

In many cases, routine documents require paragraph and character properties that differ from the system defaults. Define/Expand provides an easy way to style blank documents with the character, paragraph, and page format properties you want. When you include character and paragraph style rules in an expression, you automatically assign style rule properties to the basic text of the document.

The following procedure lets you customize a Blank Document icon with the style rule properties you routinely use. You can repeat the procedure to create additional styled blank documents for other formats. The procedure assumes that you have already:

- Placed the appropriate new-paragraph character and, if desired, a page format character in an expansion dictionary using the procedures discussed earlier in this chapter in the section titled "Storing styled formats in an expansion dictionary."
- Loaded the expansion dictionary.

To customize a blank document:

1. Open a Blank Document icon, select edit mode, and display the structure and non-printing characters.
2. Type in the Define/Expand abbreviation for the body text style you want and press <DEFINE/EXPAND> to recall that abbreviation. This step places an additional new-paragraph character in the blank document after the default new-paragraph character.
3. Using four clicks of the mouse button, select the default new-paragraph character and then press <SAME>.
4. Select the second new-paragraph character as the source of properties. This step assigns the paragraph style rule to the default new-paragraph character.
5. Use the extended selection method to select the default new-paragraph character and the default page format character.

6. Press <SAME> and select the second new-paragraph character as the source of properties. This step assigns the character style rule.
7. If your Define/Expand expression included a page format character, select the default page format character and press <SAME>. Then select the second page format character as the source of properties. This step assigns the page format properties.
8. Delete the second page format character and the second new-paragraph character.
9. Using the Style Soft Key Assignments window, assign the body text style rules to the first two style soft keys.
10. Close the blank document and rename it so that you will recognize the icon as a styled blank document.

---

## Printing a document stylesheet

---

1 2 3...

1. With a document open and in edit mode, select [Show Stylesheet] in the document auxiliary menu.
2. Select [Print Stylesheet] in the header of the document stylesheet or in the floating items auxiliary menu. The pointer changes to the copy pointer.
3. Move the copy pointer to a printer icon and continue with the same procedures you normally use to print a document.
4. Select [Close] in the stylesheet header.

**Note:** All size properties, such as **Font Size** and **Margins**, are expressed in [Points] on the printed stylesheet. Table 7-3 shows the number of points per unit in each of the other units of measure available for the **Size** property. You can refer to Table 7-3 to estimate the size in other units.

Table 7-3 **Table for converting points to other units**

	1 inch	1 space	1 centimeter	1 millimeter
Points	72	6	28.35	2.84





ViewPoint software provides several types of containers to help you manage your desktop, including folders, file drawers, and books. This chapter describes books, which let you process multiple documents as one document. For example, you can organize individual documents as chapters of a book.

---

## Key concepts of a book

---



A book can contain a set of related documents or objects that you create with other VP Series applications. The VP Document Editor can assign one series of sequential page numbers, as well as continuous page headings and footings, to all the documents in a book.

After you paginate a book, you can use the *VP Long Document Options* application to produce a single table of contents or index for the book. Refer to the *Document Editor Options Reference* volume for more information.

---

## Contents of a book

---

You determine the contents of a book by placing documents in it. Add documents to a book in the order you want them to appear in the book. After you add documents to a book, you can change their order or delete them, if necessary.

Keep these facts in mind when using books:

- A book can contain up to 256 separate documents.
- A single document can be up to 256 disk pages.
- Book pages can be sequentially numbered up to 10,000.
- A book cannot contain other books, folders, file drawers, or other containers.

## Blank Book icon

---

You create a book using the Blank Book icon (Figure 8-1), which is in the Basic Icons divider, in the Workstation divider of the directory.

Figure 8-1 **Blank Book icon**



You work with books in much the same way you work with documents. For example, to name the book, you copy a Blank Book icon to the desktop and name it on its property sheet. You also select the book icon to print, copy, mail, or file the book.

You can move or copy document icons into the book icon. You can also open the book icon to display the book window, in which you can view and work with the documents in the book.

## Book printing

---

To prepare a book for printing, you complete these procedures:

- Set the page numbering properties that you want for all documents in the book.
- Set the page heading and page footing properties that you want for all documents in the book.
- Place the documents in the book and arrange them in the order you want.
- Paginate the completed book using the desktop [Paginate] command.

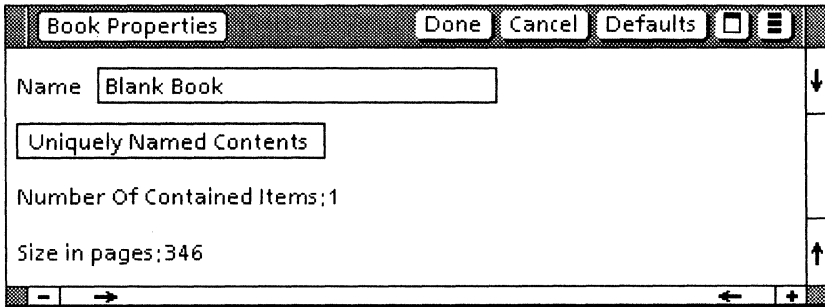
---

## The Book properties sheet

---

The Book properties sheet (Figure 8-2) lets you name a book and specify whether the objects it contains must have unique names. The property sheet also displays information about the book.

Figure 8-2 The Book Properties sheet



### **Name**

Specifies the name of the book. A book name can be up to 100 characters long.

### **[Uniquely Named Contents]**

If selected, indicates that the objects in a book must have unique names. The default setting allows duplicate names.

### **Number of Contained Items**

Identifies, in read-only format, the number of objects in the book.

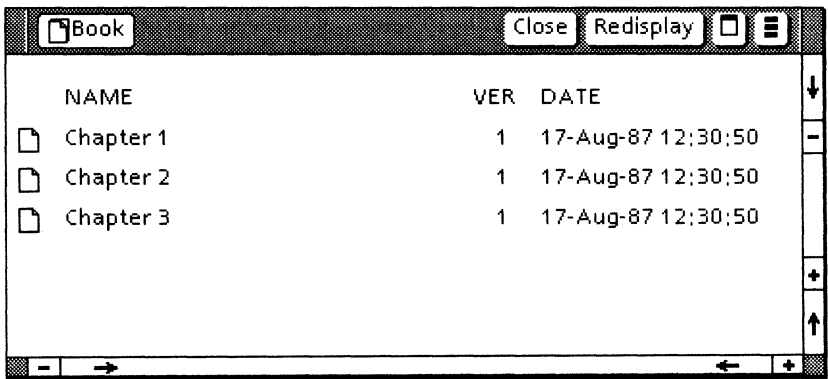
### **Size in Pages**

Shows, in read-only format, the size in disk pages of the entire book.

## Book window

When you open a book icon, you display a window that shows the objects in the book (Figure 8-3). In the book window, you can move and copy objects into a book, change their order, and delete them.

Figure 8-3 A typical book window



The book window includes the following information, arranged in columns:

### Name

Displays the name of the object.

### Version

Displays the version of the object.

### Date

Displays the date and time the object was created or last changed.

**Note:** You can control the information displayed in the book window by setting parameters in the [Folder] element of the User Profile, or by completing the Folder/File Drawer Display options sheet. For more information, see the *General User Reference* volume in this library.

---

## Creating a book

---

1 2 3...

1. Copy a Blank Book icon to the desktop and rename it. The Blank Book icon is located in the Basic Icons divider, in the Workstation divider of the directory. The book icon can be open or closed for the remaining steps.
2. Select the first document you want to place in the book, and move it to the book icon or the open book window.
3. Repeat step 2 for each additional document.

You can also place documents in a book by selecting several document icons (the first with the left mouse button and the succeeding ones, in order, with the right mouse button) and copying or moving them to the book icon or the open book window.

4. If desired, number the pages of the book and set headings and footings, as discussed within the remaining procedures in this chapter.

---

## Numbering the document pages in a book

---

1 2 3...

Use these procedures to sequentially number the pages of documents in a book and continue the page-numbering pattern set on the Page Numbering property sheet.

If you want to add page headings and footings to the documents in the book, perform the steps in the "Creating headings and footings in a book" procedure later in this chapter.

## Specifying page numbering for the first document

---

1. Open the book icon and make sure the documents it contains are in the correct order.
2. Open the first document in the book and select [Edit], if necessary.
3. Select [Show Structure] from the document auxiliary menu.
4. Display the Page Numbering property sheet for the first page format character in the document.
5. Select [Restart] for the **Page Numbering** property.
6. For the **Start With** property that appears, supply a starting page number for the entire book. The default value is 1. If desired, you can delete the default value and type a new page number.
7. Set the other properties as desired to specify page number appearance.

Refer to the "Page format" chapter in *Document Editor Reference* volume 3 in this library for more information.

8. Select [Done] or press <PROP'S>.

## Specifying page numbering for the rest of the book

---

1. If there are no more page format characters in the document, close it and open the next document in the book.
2. Display the Page Numbering property sheet for the next page format character in the book.

**Note:** You can use the [Go To Next Page Format Character] command in the content



auxiliary menu to search for the page format character.

3. Select [Continue] for the **Page Numbering** property. The [Number] and [Number and Pattern] properties appear, with the [Number] property automatically selected.
4. If you want to continue the page number and pattern, select [Number and Pattern].
5. Select [Done] or press <PROPS>.
6. Repeat steps 1 through 5 for each page format character remaining in the documents comprising the book. You can also use <SAME> to copy page format character properties from one page format character to another when the same layout, heading, footing, and numbering properties apply.

As you finish with each document, you can select [Show Next] from the document window header or the floating items auxiliary menu to close the current document window and open the next one in the book.

## **Finalizing page numbering**

---

1. After you finish setting page numbering for the last document, select [Close All] to close the document and book windows.
2. Select [Paginate] from the desktop auxiliary menu to paginate the book and assign sequential page numbers.

**Note:** You cannot use [Simple Paginate], [Paginate Displayed Pages], [Paginate Specified Pages], or document [Paginate] to paginate a book.

---

## Creating headings and footings in a book

---

**1 2 3...**

Use these procedures to continue page headings and footings for all documents in a book.

### Specifying the headings and footings

---

1. Open the book icon and make sure the documents it contains are in the correct order.
2. Open the first document in the book and select [Edit], if necessary.
3. Select [Show Structure] from the document auxiliary menu.
4. Display the the Page Headings property sheet for the first page format characters in the document.
5. To create a page heading or footing, select [Reset] for the **Heading/Footing** property; then select [Heading] or [Footing] for the **Show** property.

Refer to the "Page format" chapter in *Document Editor Reference* volume 3 in this library for more information.

6. Select [Done] or press <PROP'S>.

### Continuing the headings and footings throughout the book

---

1. If there are no more page format characters in the document, close it and open the next document in the book.
2. Display the Page Headings property sheet for the next page format character in the book.

**Note:** You can use the [Go To Next Page Format Character] command in the content auxiliary menu to search for the page format character.

3. Select [Continue] for the **Heading/Footing** property.
4. Select [Done] or press <PROP'S>.
5. Repeat steps 1 through 4 for each page format character remaining in the documents comprising the book. You can also use <SAME> to copy page format character properties from one page format character to another when the same layout, heading, footing, and numbering properties apply.

As you finish with each document, you can select [Show Next] from the document window header or the floating items auxiliary menu to close the current document window and open the next one in the book.

## Finalizing headings and footings

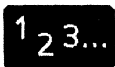
---

1. After you finish setting headings and footings for the last document, select [Close All] to close the document and book windows.
2. Select [Paginate] from the desktop auxiliary menu to paginate the book and assign headings and footings.

---

## Setting page numbering in headings or footings

---



Use these procedures to insert page numbering in the headings or footings of all documents in a book.

---

## Specifying the page numbering

---

1. Open the book icon and make sure the documents it contains are in the correct order.
2. Open the first document in the book and select [Edit], if necessary.
3. Display the Page Headings property sheet.
4. Select [Reset] for the **Heading/Footing** property and complete the Page Headings property sheet as described in the previous procedure.
5. Select a location, within the heading or footing text, for the page numbering to appear.

**Note:** The heading or footing text is the text that you typed in the **Heading** or **Footing** box.

6. Enter a page-numbering character by holding down <KEYBOARD>, pressing the <Special> alternate function key, and pressing <4>.
7. Display the Page Numbering property sheet.
8. Select [None] for the **Page Numbering** property.
9. Select [Done] or press <PROP'S>.

---

## Continuing page numbering

---

1. If there are no more page format characters in the document, close it and open the next document in the book.
2. Display the Page Headings property sheet for the next page format character in the book.

3. Select [Continue] for the **Heading/Footing** property.
4. Display the Page Numbering property sheet.
5. Select [None] for the **Page Numbering** property.
6. Select [Done] or press <PROP'S>.
7. Repeat steps 1 through 6 for each page format character remaining in the documents comprising the book. You can also use <SAME> to copy page format character properties from one page format character to another when the same layout, heading, footing, and numbering properties apply.

### **Finalizing page numbering**

---

1. After you set page numbering for the last document, select [Close All] to close the document and book windows.
2. Select [Paginate] from the desktop auxiliary menu to paginate the book and assign page numbering in headings or footings.

# **Part 2**

## **Tables**





Tables present information in rows and columns that are easy to read and easy to understand. You use tables to display groups of related information, to create forms that require ruled boxes, to merge information into form letters, labels, and lists.

This chapter describes basic methods of using tables. It shows you how to create a table, size and position a table on a document page, change the appearance of table elements, insert information into a table, and sort data in a table.

Table 9-1 lists where you can find additional information about tables in other chapters of this volume:

Table 9-1 **Where to find more information about tables**

<b>Information</b>	<b>Chapters in this volume</b>
Using fields and fill-in rules to enter information automatically into tables	All chapters in Part 3, "Fields and fill-in rules"
Creating forms that require ruled boxes	The "Fields" chapter
Merging tabular information into form letters, labels, and lists	The "Mail Merge" chapter



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## Key concepts of tables

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A *table* consists of information organized into rows and columns. Ruling lines can separate individual items of information. You can put information at the intersection of each row and column. These locations, which appear as enclosed rectangles when ruling lines are used, are often referred to as *cells*.

The number of tables you can create in a document cannot exceed 256 disk pages, the current limit of a document. The maximum number of cells that can be included in a table is about 3,500.

### Table frames

---

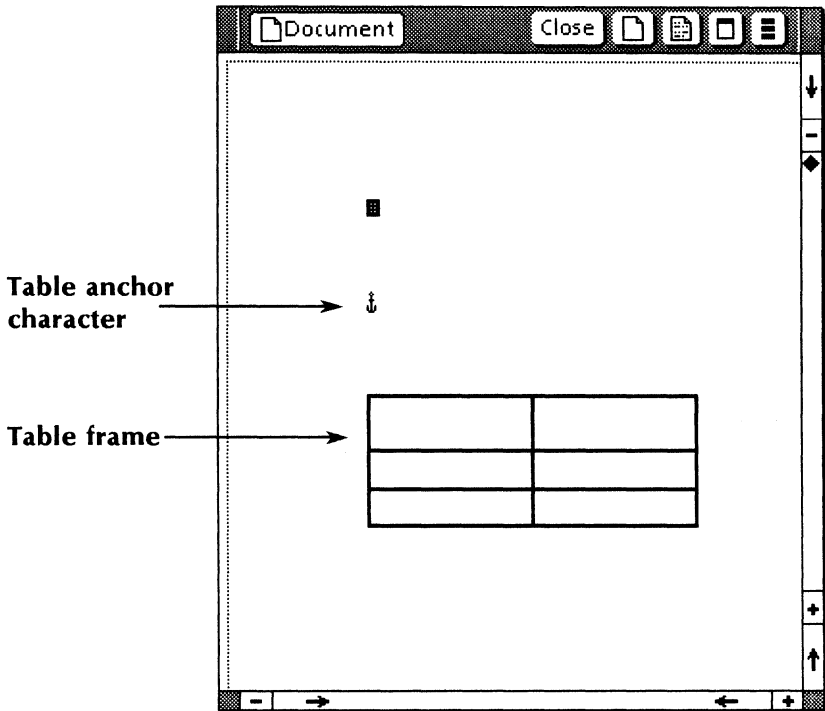
A table exists within a table frame (Figure 9-1). You can enter a table frame as an anchored frame in a document or as an embedded frame in a graphics frame. The Document Editor provides two types of table frames:

- In a by-column table frame, you enter information vertically, down one column at a time.
- In a by-row table frame, you enter information horizontally, across the table, one row at a time.

Initially the table frame appears within the displayed document as shown in Figure 9-1. The default frame is a small two-column, rectangular table outlined by a border. The top row is the header row.

A table frame has the same properties as other frames. You can change the frame size and position on the page as desired. You can also customize the frame border and ruling lines by selecting from a variety of styles and thicknesses.

Figure 9-1 A table anchor character and a table frame

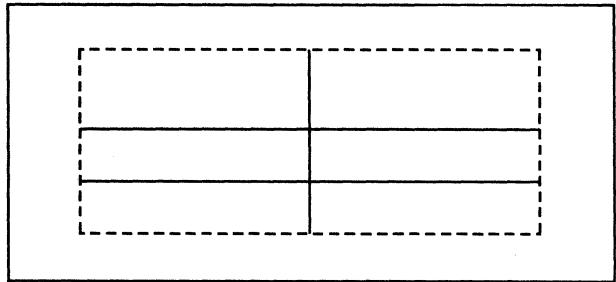


You set these properties on the Table Frame property sheet.

When you insert a table frame in a document, the frame border coincides with the border of the table. If you alter the size of the table by changing the number of rows or columns, the frame size adjusts to the new table size.

You can stretch the frame away from the table, creating an additional margin area around the table. Figure 9-2 shows a stretched frame around a table.

Figure 9-2 A stretched frame around a table



After you stretch the frame, the frame size no longer changes automatically with the table size. If you then increase the table size, part of the table may not appear within the frame. You can decrease the table size or manually stretch the frame further to accommodate the larger table.

You can copy a table anchor or a table frame into a graphics frame. Embedding a table frame in a graphics frame enables you to merge tabular and graphic information.

Refer to the chapter titled “Frames” in *Document Editor Reference* volume 3 for general information about frames.

## Rows and columns

---

When you first enter a table frame, it contains two columns, two rows, and a *header* row that you can use to label the columns.

Figure 9-3 shows an example of the default table. Procedures in later sections show you how to expand a table by adding additional rows and columns.

If you want the default table to always have more than two rows or two columns, you can change its default size in the User Profile. Refer to the chapter titled “The User Profile,” in the *General*

*User Reference* volume in this library for more information.

Figure 9-3 A default table

	Column 1 ↓	Column 2 ↓
<b>Header row</b> →	<b>Column 1 Heading</b>	<b>Column 2 Heading</b>
<b>Row 1</b> →		
<b>Row 2</b> →		

The default tables are set for one line of text per row. However, each row automatically expands vertically to accept entries that require more than one line (Figure 9-4). You can adjust the width of a column and placement of text by setting properties in the Table Column properties sheet.

Figure 9-4 An expanded table row

	<b>Column 1 Heading</b>	<b>Column 2 Heading</b>
	Item 1	Item 2
<b>Expanded row</b> →	This row expanded to accommodate more text.	Item 4

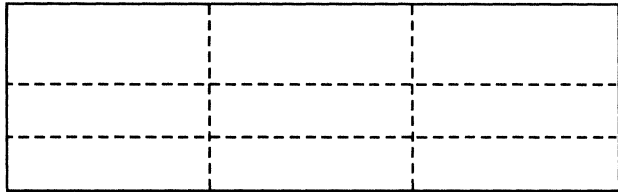
## Ruling lines

---

*Ruling lines* separate the rows and columns of a table. The Document Editor can place ruling lines between columns and rows, as well as around the outside of the table.

You can change the style of the lines, as shown on the interior lines in Figure 9-5. You can also change the width of the lines or not show them at all.

Figure 9-5 Example of dashed ruling line style



The image shows a 3x3 table with a solid border. The interior lines, which separate the cells, are dashed. There are two vertical dashed lines and two horizontal dashed lines, creating a 3x3 grid of cells.

## Table data entry and fill-in direction

---

You can enter data into a table using three methods:

- You can use the <SKIP/NEXT> key to move cell by cell through the table. When you use this method, the Document Editor makes sure the data you entered is of the proper type and format, as specified on the Table Column property sheet, before moving the caret to the next cell.

**Note:** Make sure that the cursor keys are not activated before using the <SKIP/NEXT> key. If you have activated the cursor keys, the <SKIP/NEXT> key will not move the caret from the last cell.

- You can use the mouse to select individual cells anywhere in the table when you want to fill in or update information in cells.
- You can enter data automatically in a table using fill-in rules, as described in Part 3 of this volume, "Fields and fill-in rules."

You position the caret inside the header row to begin filling in your table. The fill-in direction of the header row is always by-row; pressing the <SKIP/NEXT> key moves the caret through the cells of the header row before dropping to the cell in the first row of the first column.

Below the header row, the fill-in direction of the table depends on whether you entered a by-row or by-column table frame in the document. You can also change the fill-in direction on the Table property sheet.

### By-row table entry

When you enter data in a by-row table, pressing <SKIP/NEXT> moves the caret to each successive cell across the row, and then to the first cell in the next row.

In Figure 9-6, the numbers in the cells indicate the direction in which the Document Editor moves the caret when you begin in the first cell of the header row.

Figure 9-6 Direction of by-row table fill-in

1	2
3	4
5	6
7	8

## By-column table entry

---

When you enter data in a by-column table, pressing <SKIP/NEXT> moves the caret to each successive cell down the column and then to the first cell in the next column.

In Figure 9-7, the numbers in the cells indicate the direction in which the Document Editor moves the caret when you begin in the first cell of the header row.

Figure 9-7 **Direction of by-column table fill-in**

1	2
3	6
4	7
5	8

## Automatic fill-in rules

---

Fill-in rules instruct the Document Editor to enter information automatically into a table. For example, you can write a fill-in rule that takes each entry in column 1, multiplies it by the corresponding entry in column 2, and places the answer in the same row in column 3. You can also use fill-in rules to total the entries in a table column.

A fill-in rule can retrieve information from another column in the same table, another table, or fields of the document. A fill-in rule can also retrieve data from another document. Refer to Part 3 of this volume, "Fields and fill-in rules," for more information.

## Subdivided columns and rows

You determine the structure of a table by specifying the number and size of the rows and columns. You also decide where to include subcolumns and subrows.

Figure 9-8 shows a table with three columns. Column A is not divided, column B is divided into two subcolumns, and column C contains repeating subrows.

Figure 9-8 **A table with subcolumns and subrows**

Undivided column	Column with subcolumns		Column with subrows
↓	↓		↓
A	B		C
	b 1	b 2	
a 1	b 11	b 12	c 11
			c 12
			c 13
a 2	b 21	b 22	c 21
			c 22
			c 23



## Table row sorting

---

The Document Editor enables you to sort table rows according to the contents of one or more columns. You designate a column or subcolumn and specify whether you want the data in that column arranged in ascending or descending order. The Document Editor rearranges the rows in the table to match your specification.

The column you use to sort the table can contain text, amounts, or dates. The Document Editor sorts text alphabetically, amounts numerically, and dates chronologically. You specify the type of information in the column by setting the **Type** property on the Table Column property sheet.

Figure 9-9 shows an example of the table rows sorted so that the entries appearing in column 1 are in ascending alphabetical order.

**Figure 9-9 A table sorted with column 1 in ascending alphabetical order**

<b>Employee</b>	<b>Monthly Sales</b>
Grayson, J.	\$14,535
Lee, B.	\$15,000
Phillips, J.	\$16,200
Smith, A.	\$9,000
Smith, W.	\$7,090

Figure 9-10 shows the same information sorted so that the entries in column 2 appear in descending numerical order.

**Figure 9-10 A table sorted with column 2 in descending numerical order**

<b>Employee</b>	<b>Monthly Sales</b>
Phillips, J.	\$16,200
Lee, B.	\$15,000
Grayson, J.	\$14,535
Smith, A.	\$9,000
Smith, W.	\$7,090

The sort key is the column or subcolumn by which to sort the table rows. You can use up to 12 sort keys; the table is sorted by the first key selected, then by the second key, and so forth. Figure 9-11 shows a table sorted first by the contents in column 1 (in ascending alphabetical order), then by the contents of column 2 (in ascending alphabetical order). Additionally, you can sort subrows within their respective rows.

**Figure 9-11 A table sorted with column 1 in ascending alphabetical order, then column 2 in ascending alphabetical order**

<b>Region</b>	<b>Employee</b>	<b>Monthly Sales</b>
Midwest	Grayson, J.	\$14,535
Midwest	Phillips, J.	\$16,200
Northeast	Lee, B.	\$15,000
Northeast	Smith, A.	\$9,000
Northeast	Smith, W.	\$7,090

## Long tables

---

*Long tables* are tables that are too long to fit on a single page when printed. On the screen, they appear as one long page, even after pagination. You can use the vertical scroll bar to scroll to a specified percentage of the length of the page.

When you print a document containing a table longer than one page, the table continues on the following pages. The Document Editor breaks the table at the table ruling line nearest to the bottom page margin. You can specify whether to repeat the table caption and column headings on each additional page of the table.

**Note:** Because the Document Editor does not continue a graphics frame over a page break, do not embed a long table within a graphics frame.

Figure 9-12 illustrates the appearance of a long table in the document window after pagination, and the printed copy with the headings repeated and not repeated.

The default selection of [Defer Table on Paginate] on the Table property sheet causes the printed table to begin on its own page. You can deselect this setting to start printing the table on the same page as its anchor. In either case, any text or graphics following the table appear on the same page as the end of the table, if there is room.

Figure 9-12 Examples of long tables

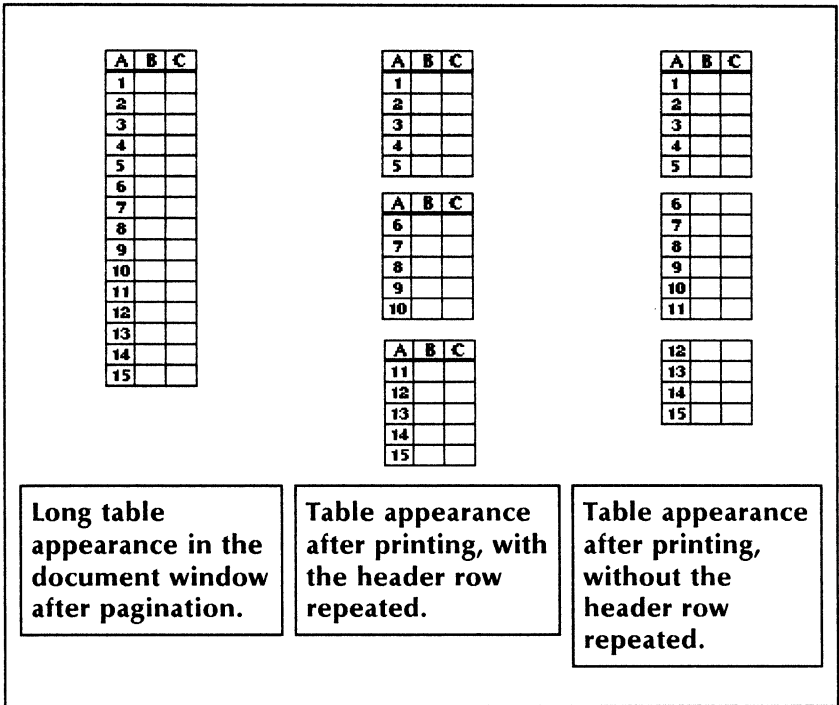
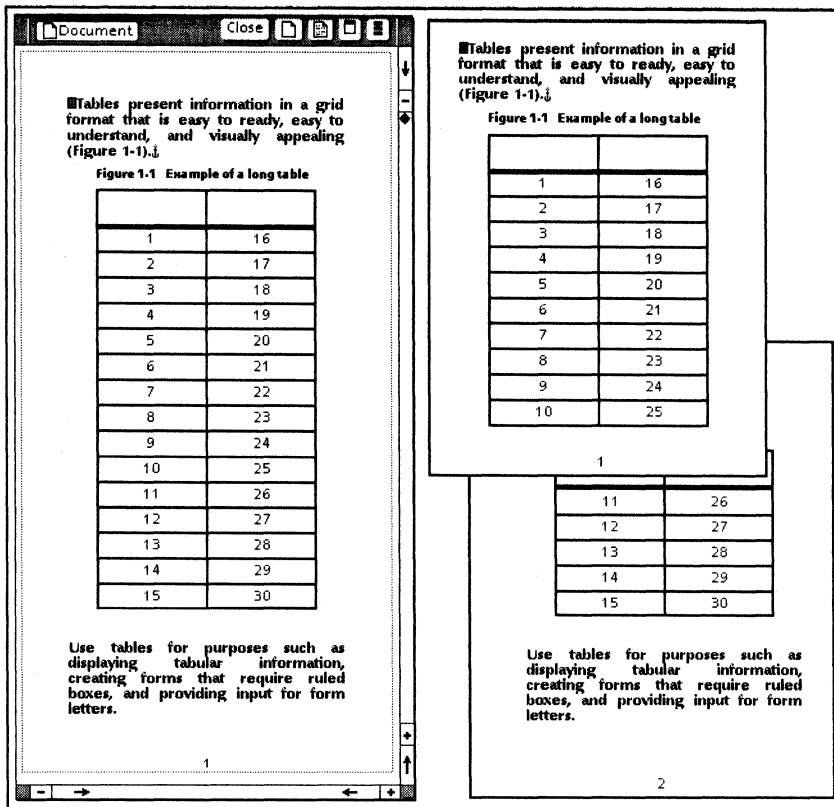


Figure 9-13 shows the appearance of a page with a long table. The table is shown as it would be printed with [Defer Table on Paginate] deselected, appearing on two pages with text before and after it.

Figure 9-13 Example of a long table with text



## Table commands

The following commands in the content auxiliary menu apply to tables:

[Select Table Row]

Selects the table row in which the caret is positioned.

[Select Table Column]

Selects the table column in which the caret is positioned.

**[Subdivide Table Column]**

Divides the selected table column or subcolumn into two subcolumns. You can change the default number of subcolumns created by modifying the **Number of Subcolumns** setting in the [Document Table Column Defaults] section of the User Profile.

**[Sort Table Selection]**

Sorts the rows of a table or the subrows of a divided repeating column in either ascending or descending order, as specified on the Table Sort Keys property sheet or the Table Column Sort Keys property sheet.

**[Refresh Table Lines]**

Erases and redraws the ruling lines for a selected table.

Additional commands in the content auxiliary menu apply to fields and fill-in rules in tables. Refer to Part 3 of this volume, "Fields and fill-in rules," for more information.

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## Methods for setting table properties

---

You can use three different methods for setting table properties.

- You can set properties on the various property sheets associated with tables (Table 9-2).
- You can use the Define/Expand feature to customize the properties for tables. Refer to the chapter titled "Define/Expand" in this volume for more information.

Table 9-2 **Property sheets associated with a table and its elements**

Selection	Property Sheet
Table	Table properties sheet Table Frame property sheet Table property sheet Table Header property sheet Table Sort Keys property sheet
Column	Table Column properties sheet Table Column property sheet Table Column Text property sheet Table Column Sort Keys property sheet
Row	Table Row properties sheet Table Row property sheet Table Row Text property sheet
Ruling line	Table Ruling Line properties sheet

- You can specify your own default table characteristics in the User Profile. The following User Profile sections set default table properties: [Document Table Defaults], [Document Table Row Defaults], [Document Table Column Defaults], [Document Table Header Row Defaults], and [Document Table Ruling Line Defaults]. Refer to the chapter titled “The User Profile” in the *General User Reference* volume in this library for more information; also refer to the document titled “User Profile Copy Source” in the help folder.

---

## Methods for editing tables

---

You can use all of the basic ViewPoint editing operations when editing tables or information in table cells. These operations include the following:

- Repeating an action with <AGAIN>.
- Copying information into cells with <COPY>.
- Copying rows, columns, tables, and text with <COPY>.
- Moving rows, columns, tables, and text with <MOVE>.
- Deleting rows, columns, subrows, tables, and text with <DEL>.
- Changing the properties of information in a table cell with the top-row function keys or the Character property sheet.
- Duplicating table properties or text properties with <SAME>.
- Paginating a document containing tables by using the pagination commands.
- Changing the properties of table elements by using property sheets.



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## The Table properties sheet

---

The Table properties sheet lets you specify properties that apply to the whole table. This property sheet appears when you select a table and press <PROP'S>. The **Display** setting enables you to select one of four associated property sheets:

- The Table Frame property sheet
- The Table property sheet
- The Table Header property sheet
- The Table Sort Keys property sheet

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## The Table Frame property sheet

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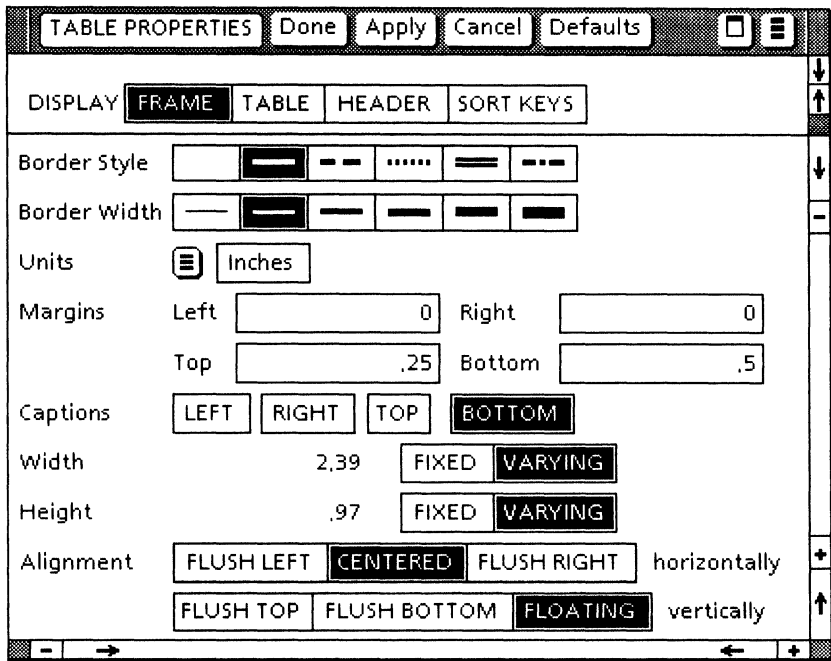
The Table Frame property sheet (Figure 9-14) lets you specify the appearance of the frame that contains the table. Properties on the sheet control exterior elements of the table such as the border, captions, and alignment on the page.

A table frame can be anchored or embedded; the **Alignment** and **Span** properties do not appear on the property sheet for an embedded table frame.

If you stretch the frame border away from the table border, you can make these borders coincide by changing the **Width** and **Height** properties to [Varying] on the Table Frame property sheet.

The properties for a table frame are the same as those for any other frame. Refer to the chapter titled, "Frames," in *Document Editor Reference* volume 3 for more information.

Figure 9-14 The Table Frame property sheet



## The Table property sheet

The Table property sheet (Figure 9-15) lets you do the following:

- Name the table.
- Specify the number of rows and columns.
- Specify whether the table is to be filled in by row or by column.
- Specify properties used in printing long tables that require more than one page.

Figure 9-15 The Table property sheet

### Name

Displays the name of the table. The Document Editor assigns a name to each table you create. The default name is the word "Table" followed by an integer; for example, "Table1."

The first table you enter into a document is Table1. The Document Editor increases the number by one for each new table, so that every table in the document has a unique name. If you move or copy a table from another document, the Document Editor assigns the default name with the next available number if the incoming name matches an existing table name.

You can change the table name. The name you choose should not include spaces if you will be using that name in a fill-in rule. The Document Editor will not let you assign one of the default names such as Table3.

**Number of Rows**

Specifies the number of rows in the table.  
The choices are:

[Fixed]

Specifies a fixed number of rows in the table.

[Varying]

Specifies that the number of rows can increase when the caret is in the last cell of the table and you press <SKIP/NEXT>. This setting appears when the fill-in direction is by-row.

**Number of Columns**

Specifies the number of columns in the table.  
The choices are:

[Fixed]

Specifies a fixed number of columns in the table. The maximum number of columns in a table is 43 if you are using a portrait page layout with no page margins, and 55 if you are using a landscape page layout with no page margins.

[Varying]

Specifies that the number of columns can increase when the caret is in the last cell of the table and you press <SKIP/NEXT>. This setting appears when the fill-in direction is by-column.

**Fill-in by**

Specifies the fill-in direction for the table according to the type of table frame (by-row or by-column) you entered into the document. The default setting is [Row] for a by-row table and [Column] for a by-column table. However, you may change your previous selection using this property.

[Row]

Causes <SKIP/NEXT> to move the caret to the next cell in the row (or the first cell

in the following row) when you are filling in the table. This selection also sets the **Number of Columns** property to [Fixed] and enables you to select either [Fixed] or [Varying] for the **Number of Rows** property. If you select [Varying] for the **Number of Rows** property, pressing <SKIP/NEXT> with the caret in the last (lower right) cell adds a new row.

[Column]

Causes <SKIP/NEXT> to move the caret down to the next cell in the column (or up to the first cell in the following column) when you are filling in the table. The selection also sets the **Number of Rows** property to [Fixed] and enables you to select either [Fixed] or [Varying] for the **Number of Columns** property. With [Varying] selected for **Number of Columns**, pressing <SKIP/NEXT> with the caret in the last (lower right) cell adds a new column.

The next three properties apply to long tables that cannot fit on a single printed page. Because a long table is not broken into segments on the screen display, you do not see the full effect of the following properties until you print the document.

[Repeat Top Caption On Print]

Prints the top caption (if one exists) of the table frame above each segment of the table that appears on a separate page. The default value is [Repeat Top Caption On Print] selected. If you deselect this property, the top caption appears only on the first page.

[Repeat Bottom Caption On Print]

Produces the same result as [Repeat Top Caption On Print], except that it applies to a bottom caption.

**[Defer Table On Paginate]**

Causes a long table to start on its own page when printed. This property may cause some blank space on the page that precedes the table. When you deselect this property, a long table can start on the remaining portion of the page that has the frame anchor. The default value is [Defer Table On Paginate] selected.

## The Table Header property sheet

You can use the Table Header property sheet (Figure 9-16) to determine the appearance of the headers at the top of each column. You can set properties to do the following:

- Determine if the header appears.
- Position the contents of the header.
- Determine the size of the header.

Figure 9-16 The Table Header property sheet

TABLE PROPERTIES Done Apply Cancel Defaults

DISPLAY FRAME TABLE **HEADER** SORT KEYS

Visibility **SHOW**  
 Repeat Header Row on Each Page

Units Inches

Contents **FLUSH LEFT** **CENTERED** FLUSH RIGHT horizontally  
 FLUSH TOP **CENTERED** FLUSH BOTTOM vertically

Text Direction **LEFT TO RIGHT** RIGHT TO LEFT

Height .42

Margins Top  Bottom

### Visibility

Specifies whether or not the header row of the table is to be visible.

#### [Show]

Displays the header row of the table. If you deselect [Show], the remaining properties disappear from the property sheet display, and the header row disappears from the table.

#### [Repeat Header Row on Each Page]

Displays the header row on every page when a long table is printed. If you deselect this property, the header row appears only on the first page.

**Note:** Do not confuse this property with the [Repeat Top Caption On Print] property on the Table property sheet, which repeats the top caption of the table frame with each printed segment of a long table.

The default settings are [Show] and [Repeat Header on Each Page] selected.

### Units

Displays the unit of measurement for the header row margins. An auxiliary menu displays the available choices: [Inches], [Millimeters], [Centimeters], [Points], and [Spaces]. (One inch equals 25.4 millimeters, 2.54 centimeters, 72 points, or 12 spaces.)

The default is the current value. (Selecting [Defaults] in the property sheet header does not change the [Units] value.

### Contents

Controls the horizontal and vertical position of the text within the margins of each column of the header row. You set top and bottom header row margins on this property sheet, and you set left and right column margins on the Table Column property sheet.

The choices for horizontal alignment are:

[Flush Left]

Aligns the contents of each cell in the header row flush with the left margin of the cell.

[Centered]

Centers the contents of each cell in the header row between the left and right margins of the cell.

[Flush Right]

Aligns the contents of each cell in the header row flush with the right margin of the cell.

The choices for vertical alignment are:

[Flush Top]

Aligns the contents of the header row flush with the top margin of the row.

[Centered]

Centers the contents of the header row between the top and bottom margins of the row.

[Flush Bottom]

Aligns the contents of the header row flush with the bottom margin of the row.

The default is [Centered] for both horizontal and vertical alignment.

### **Text Direction**

Specifies the horizontal direction of the text flow in the header row cells. The default is [Left To Right].

**Note:** If you are using the *VP Arabic Text* application or the *VP Hebrew Text* application, select [Right to Left].



**Height**

Shows the height of the header row. The height is automatically adjusted as you enter text. The default is 0.42 inches.

**Margins**

Sets the top and bottom margins within the header row, using the unit of measurement selected for the **Units** property. The **Margins** property has two settings:

**[Top]**

Specifies the distance between the top of the header text and the top border of the header row. The default is 0.13 inches.

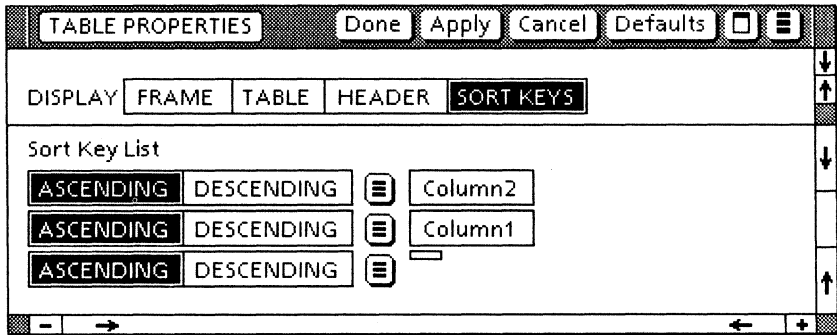
**[Bottom]**

Specifies the distance between the bottom of the header text and the bottom border of the header row. The default is 0.13 inches.

**The Table Sort Keys property sheet**

The Table Sort Keys property sheet (Figure 9-17) enables you to specify how you want to sort the contents of columns. The table rows are then reordered based on the assignments you make in the **Sort Key List**.

Figure 9-17 **The Table Sort Keys property sheet**



The **Sort Key List** includes up to 12 lines, one for each column that can serve as a sort key for the table. The top line specifies the first-level sort key; the second line specifies the second-level sort key; and so forth.

The sort levels correspond to the number of increasingly detailed arrangements of the data in the table. A first-level sort provides the basic pattern of arrangement; for example, a list of cars sorted by manufacturer. A second-level sort rearranges the data within each first-level grouping according to a more detailed pattern; for example, within each manufacturer, a list of cars sorted by year of manufacture. Successive sort levels become still more detailed: within year, by model; within model, by price range; within price range, by included options; and so on.

You must identify the type of data in the columns you use as sort keys, to ensure that sorting produces correct results. For example, numbers do not sort correctly unless you select [Amount] for the column **Type** property. You specify the column **Type** property on the Table Column property sheet.

Each line in the **Sort Key List** includes:

- Sort order: [Ascending] or [Descending]
- Sort keys auxiliary menu
- Sort keys auxiliary menu selections

### **Sort order**

[Ascending]

Specifies that the column whose name you select from the sort keys auxiliary menu is to be sorted in ascending order.

[Descending]

Specifies that the column whose name you select from the sort keys auxiliary menu is to be sorted in descending order.

The default is [Ascending].

### Sort keys auxiliary menu

Includes the names of columns that may be sorted in the order you specify. Each menu in a Sort Key List is identical.

Figure 9-17 shows an example of a Table Sort Keys property sheet with two sort keys selected. When you select a column from the sort keys auxiliary menu, the choice appears in the box to the right of the menu. In this example, the table rows in column 2 are to be sorted in ascending order, as the first-level sort.

The second sort key applies to any rows with identical data in column 2. Those rows are to be sorted so that the data in column 1 is in ascending order, as the second-level sort.

In cases where you expect a third-level sort to be helpful, you could select column 3 from the third sort keys auxiliary menu. Then, rows with identical data in columns 2 and 1 could be sorted according to the data in column 3.

---

## The Table Column properties sheet

---

The Table Column properties sheet enables you to control the number of columns in the table and how the contents of specific columns appear. This property sheet appears when you select a column or range of columns and press <PROP'S>. The **Display** setting enables you to select one of three associated property sheets:

- The Table Column property sheet
- The Table Column Text property sheet
- The Table Column Sort Keys property sheet

## The Table Column property sheet

The Table Column property sheet (Figure 9-18) controls the appearance of the selected column or columns. The property sheet also includes properties that allow the Document Editor to use fields and fill-in rules to automate data entries and updates. Refer to Part 3 of this volume, "Fields and fill-in rules," for more information.

Figure 9-18 The Table Column property sheet

### Name

Specifies the name of the column. The Document Editor automatically assigns a unique name to each column.

**Note:** If you select multiple columns and press <PROP'S>, the **Name** property does not appear because each column has a unique name; you cannot assign a common name to a group of columns.

The Document Editor looks up the column **Name** property when you use table row sorting or fill-in rules. You may want to copy the name in the column header into the **Name** box of the Table Column property sheet. By using the same name in the column header and **Name**, you can more easily recognize which columns you want to use in sorting or in fill-in rules.

**Note:** You cannot use a number as the column name or have spaces in the column name if you plan to use it in a CUSP program or a fill-in rule. If the name in the column header is more than one word, you will have to change it to a single word in the **Name** property.

### **Description**

Summarizes the contents of the column or columns. **Description** is useful when you are working with fields and fill-in rules. The [Prompt for Fields] command, discussed in the chapter titled "Fields" in this volume, displays the contents of this property during table fill-in.

### **Structure**

Lets you specify whether or not the column or the rows in the column are to be subdivided.

#### [Divided]

Specifies a subdivided column. The **Subcolumns** and **Subrow** properties appear, replacing the normal properties that apply to columns that are not divided. Figure 9-19 shows an example of the Table column sheet after you select [Divided].

Figure 9-19 Table Column property sheet with a divided column structure selected

TABLE COLUMN PROPERTIES Done Apply Cancel

Display **Column** TEXT SORT KEYS

Name Table1. Column1

Description

Structure **Divided** 2 Subcolumns

Subrows **SINGLE** REPEATING

### Subcolumns

Specifies the number of subcolumns to be created. The default is 2.

### Subrows

Designates whether or not rows are subdivided within the column.

#### [Single]

Designates that the rows will not be subdivided into subrows within the column.

#### [Repeating]

Designates that rows within the column may be divided into subrows.

The default is [Single].

### Contents

Aligns the text within the margins of the column. The choices are:

#### [Flush Left]

Aligns the contents of the column flush with the left margin of the column.

[Centered]

Centers the contents of the column between the column margins.

[Flush Right]

Aligns the contents of the column flush with the right margin of the column.

[Decimal Aligned]

Aligns the contents of the column on the decimal point of the numbers in the column, and displays a **Tab Setting** property. This property specifies how far to indent the decimal point from the left margin of the column.

The default is [Centered].

**Units**

Displays the unit of measurement used to set the **Width**, **Margins**, and **Tab Setting** properties. An auxiliary menu lists the available choices: [Inches], [Millimeters], [Centimeters], [Points], and [Spaces]. The default is the current value.

**Width**

Specifies the width of the column using the unit of measurement for the **Units** property. The default is 1.19 inches. The minimum column width is 0.2 inches.

**Margins**

Sets the left and right margins within the column, using the unit of measurement selected for the **Units** property.

The default is 0.06 inches for both left and right margins.

**Type**

Specifies the type of data to be entered in the column. Identifying the data type is important for sorting the table and using fill-in rules. During data entry, the Document Editor checks that you entered data of the

---

proper type when you press <SKIP/NEXT> to advance to the next cell.

The choices are:

[Any]

Specifies that entries may contain any characters with any associated properties.

[Text]

Specifies that entries may contain only letters, digits, and symbols, with default character properties. Numerals of type [Text] are recognized as text, not as numeric values.

[Amount]

Specifies that entries may consist only of numbers, a plus sign (+) or a minus sign (-), and a decimal point (or a comma, depending on the **Language** property). Other characters are allowable if specified within the **Format** property.

[Date]

Specifies that entries must be dates. Entries can use the format Month Day, Year (for example, October 29, 1989) or MM/DD/YY (for example, 4/9/89 or 10/29/89). You can specify a default date format in the **Format** property; see the "Fields" chapter in this volume for more information.

The default for **Type** is [Any], which does not restrict the characters you can put in the cells. However, numbers and dates entered in columns of type [Any] are assumed to be text. To use table sorting or fill-in rules that involve numbers or dates, you should specify the **Type** property and, in some cases, the **Format** property, on the Table Column property sheet.

[Required]

Indicates whether or not data must be entered in all cells in the column. If



selected, pressing the <SKIP/NEXT> key does not move the caret to the next cell until you enter data into the current cell. If you select [Update Fields] from the desktop auxiliary menu and a required cell is empty, the Document Editor places the caret in the cell and reports an error; see the "Fields" chapter in this volume for more information about the [Update Fields] command.

The default is [Required] not selected.

### Language

An unnamed property that displays the **Language** of the table, which determines how amount and date fields are displayed. An auxiliary menu lists the available choices, which depend on the optional ViewPoint language software you have installed.

For example, in the U.S., date format is 4/30/89; in the U.K. and other European countries, the date format reverses the month and day, as in 30/4/89.

The default is [US English].

### Text Direction

Specifies the horizontal direction of the text flow in the column cells.

**Note:** If you are using the *VP Arabic Text* application or the *VP Hebrew Text* application, select [Right to Left].

### Format

Enables you to place additional restrictions on data in the cells of a column, in addition to the **Type** property selected. To specify a format, you enter characters from the Field Special keyboard; refer to the "Fields" chapter in this volume for more information.

When the **Type** property is [Text], the characters you place in the **Format** property

specify the order and the type of characters that should be entered into the column.

When the **Type** property is [Amount] or [Date], the characters you place in the **Format** property control the format in which the amounts or dates are displayed.

**Note:** During data entry, if you enter text outside the **Format** specification, the Document Editor displays an advisory message when you press <SKIP/NEXT>. The caret does not move to the next cell. You can override the message by pressing <SKIP/NEXT> again or using the mouse to move the caret to another cell.

#### [Stop on Skip]

If selected, indicates that holding down the <SHIFT> key and pressing the <SKIP/NEXT> key in a previous column causes the caret to stop at the current column. Holding down <SHIFT> and pressing <SKIP/NEXT> in the current column advances the caret through all cells in the table until it either reaches the end of the table or finds another all in a column with [Stop on Skip] selected.

#### Range

Defines a range of acceptable entries for the column. Leave **Range** blank if all entries are acceptable. In some cases, using the **Range** property can help you discover errors made in data entry or in entries computed using fill-in rules. Special characters for specifying the range are available through the Field Special keyboard. Refer to the "Fields" chapter in this volume for more information on the **Range** property and the Field Special keyboard.

### Length

Defines the maximum number of characters accepted in column entries.

**Note:** Length shows a 0 when there are no restrictions on the length. If you replace the 0 with a number, the <SKIP/NEXT> key does not move the caret from the cell if your entry exceeds that number of characters.

### Skip if

Defines the conditions under which the column will be skipped (depending on the state of a field) when you press the <SKIP/NEXT> key. You can specify that the column should always or never be skipped. When you select [Empty] or [Not Empty], this property compares the field you name in the **Skip if** box with the choice you select.

The named field must exist in the same document. Refer to the "Fields" chapter in this volume for information on field names.

For example, you might identify a field named Field1 and select [Empty] in this option. Then, when you press <SKIP/NEXT> to move the caret into the next column, the Document Editor checks Field1. If Field1 is empty, the column is skipped and the caret appears in the next column. If Field1 is not empty, the caret appears in the column.

The choices are:

#### [Empty]

Causes <SKIP/NEXT> to move the caret to the column if the named field is empty. This option has no effect if the box after **Skip if** is blank.

#### [Not Empty]

Causes <SKIP/NEXT> to skip the column if the named field is not empty. This option has no effect if the box after **Skip if** is blank.

[Never]

Causes <SKIP/NEXT> never to skip the column.

[Always]

Causes <SKIP/NEXT> always to skip the column.

The default is [Empty].

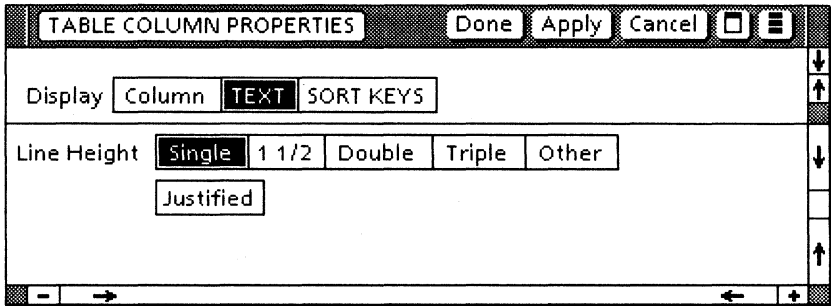
### Fill-in Rule

Defines the fill-in rule used by the Document Editor to enter information automatically into the column. Refer to Part 3 of this volume, "Fields and fill-in rules", for more information.

## The Table Column Text property sheet

You use the Table Column Text property sheet (Figure 9-20) to control the line height and the justification of the text in the selected column or columns.

Figure 9-20 **The Table Column Text property sheet**



### Line Height

Specifies the spacing between the lines of text in the column. The choices are:

[Single]

Specifies 1/6 inch (12 points).

[1 1/2]

Specifies 1/4 inch (18 points).

[Double]

Specifies 1/3 inch (24 points).

[Triple]

Specifies 1/2 inch (36 points).

[Other]

Lets you specify alternative spacing; an auxiliary menu appears for you to select the unit of measurement.

The default is [Single].

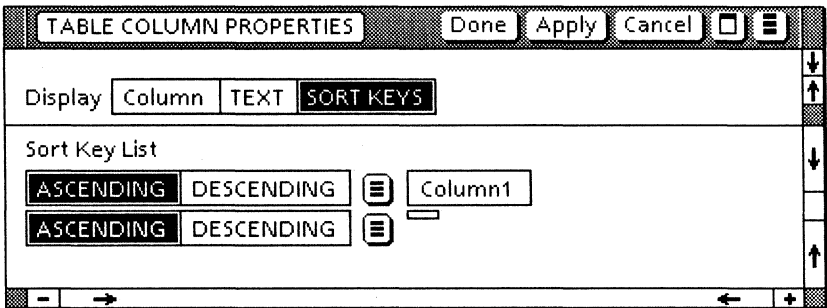
[Justified]

Specifies whether text appears right-justified in the column. The default is unjustified text.

## The Table Column Sort Keys property sheet

The Table Column Sort Keys property sheet (Figure 9-21) lets you specify the sorting order for information in repeating subrows. The sort keys list appears only if you selected [Divided] for the **Structure** property and [Repeating] for the **Subcolumns** property on the Table Column property sheet.

Figure 9-21 The Table Column Sort Keys property sheet



The properties appearing on this property sheet are identical to those already discussed on the Table Sort Keys property sheet. The only difference is that the choices listed in the **sort keys** auxiliary menu include only the subcolumns in the current selection, not the whole table.

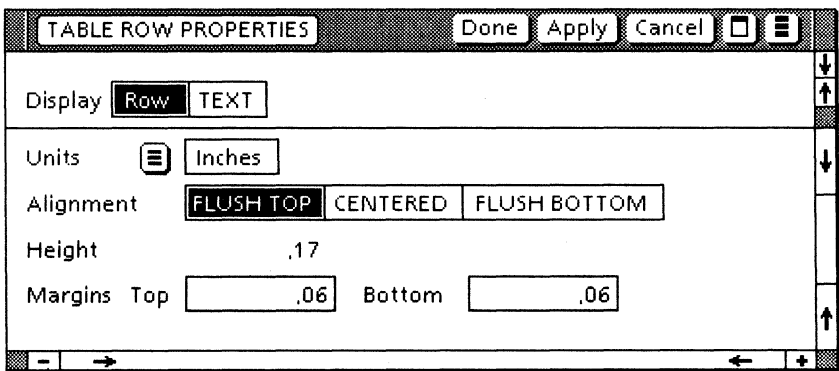
## The Table Row properties sheet

The Table Row properties sheet controls the vertical alignment and spacing of entries in selected table rows. This property sheet appears when you select a row or range of rows and press <PROP'S>. The **Display** setting enables you to select one of two associated property sheets: the Table Row property sheet and the Table Row Text property sheet.

## The Table Row property sheet

The Table Row property sheet (Figure 9-22) enables you to specify how the contents of the selected rows appear.

Figure 9-22 The Table Row property sheet



### **Units**

Displays the units of measurement for setting row margins. An auxiliary menu lists the available choices: [Inches], [Millimeters], [Centimeters], [Points], and [Spaces]. The default is the current selection.

### **Alignment**

Determines the position of text within the row. The choices are:

[Flush Top]

Aligns the text flush with the top margin of the row.

[Centered]

Centers the text between the top and bottom margins of the row.

[Flush Bottom]

Aligns the text flush with the bottom margin of the row.

The default is [Flush Top].

### **Height**

Displays the height of the row. The default is 0.21 inches.

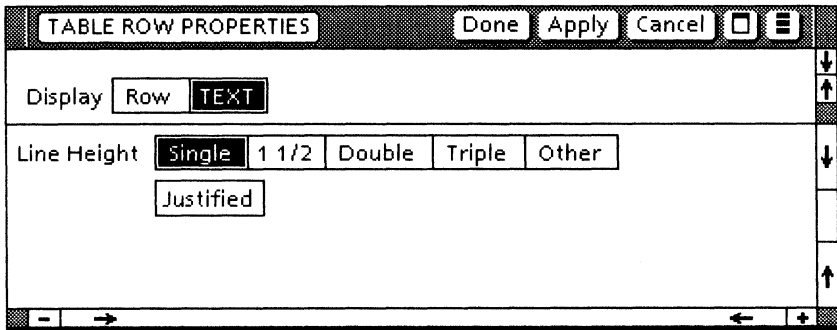
### **Margins**

Sets the top and bottom margins of a row, using the unit of measurement selected for the **Units** property. The default is 0.06 inches for both top and bottom margins.

## The Table Row Text property sheet

The Table Row Text property sheet (Figure 9-23) controls how text appears in a table row.

Figure 9-23 **The Table Row Text property sheet**



### Line Height

Specifies the spacing between the lines of text in a row. The choices are:

[Single]

Specifies 1/6 inch (12 points).

[1 1/2]

Specifies 1/4 inch (18 points).

[Double]

Specifies 1/3 inch (24 points).

[Triple]

Specifies 1/2 inch (36 points).

[Other]

Lets you specify alternative spacing; an auxiliary menu appears for you to select the unit of measurement.

The default is [Single].



**Justified**

Specifies whether text appears justified in each cell of the row. The default is unjustified text.

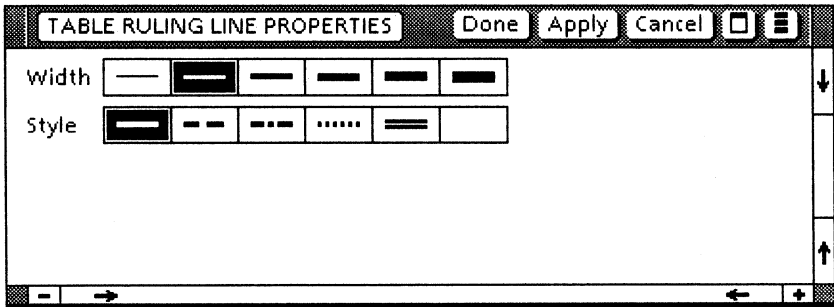
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## The Table Ruling Line properties sheet

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You use the Table Ruling Line properties sheet (Figure 9-24) to control the appearance of the ruling lines of a table. This property sheet appears when you select a ruling line or range of ruling lines and press <PROP'S>.

Figure 9-24 **The Table Ruling Line properties sheet**



**Width**

Sets the width of the selected ruling line. You can choose from six thicknesses for the ruling line. The default is the second choice.

**Style**

Determines the style of the table ruling lines, as well as whether or not the table has ruling lines. You can choose from five available ruling line styles. The last choice indicates that the selected ruling lines do not appear. The default is the first choice, a solid ruling line of the thickness specified for the **Width** property.

---

## Inserting a table in a document

---

1 2 3...

You can insert a table either as an anchored frame in a document or as an embedded frame in a graphics frame.

1. Select the location for the table.
2. Hold down <KEYBOARD> and press the top-row function key corresponding to <Special>.
3. Press <D> to insert a by-column table, or <F> to insert a by-row table. Then release <KEYBOARD>.

**Note:** After you insert a table, you can change its fill-in direction by changing the **Fill-in by** property on the Table property sheet.

If the selected location is within a document:

- The Document Editor inserts a table frame anchor at the caret position and inserts a frame containing a table beneath the anchor on the same page.
- When you paginate the document, the table appears immediately after the anchor or in a specified location, such as at the bottom of the page. If there is insufficient space on the page where you placed the anchor, the table appears on the following page.
- When you print the document, the table either continues on the same page as its anchor or starts on its own page, depending on the setting of [Defer Table on Paginate] property on the Table property sheet.

If the selected location of the table is in a graphics frame:

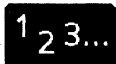
- The Document Editor inserts the frame containing the table at the caret position.
- The table is not linked to an anchor. You can reposition the table by using the <MOVE> key to move the table to another location in the graphics frame.

You can also insert a table by copying an existing table to another location, either in the same document or in another document. You can also copy an anchored table frame into a graphics frame, where it becomes embedded, or copy an embedded table frame into a document.

---

## Selecting table elements

---



You can select individual table elements or an entire table. You can then perform operations such as setting properties for parts or all of the table, and moving or copying rows and columns.

### Selecting a cell

---

1. Position the pointer in the cell.
2. Click the left mouse button.

### Selecting table columns

---

1. Select a cell in the column.
2. Point to another cell in the same column, and click the right mouse button. Alternatively, select [Select Table Column] from the content auxiliary menu.
3. To select a range of columns, point to another column, to the left or right of the column you selected, and click the right mouse button.

Alternatively, you can select a range of columns by selecting a header cell in the first column using the left mouse button, then selecting a header cell of the last column using the right mouse button.

If you select a subcolumn of a subdivided column, multiple-clicking the left mouse button selects the containing column and then the entire table.

## Selecting table rows

---

1. Select a cell in the row.
2. Point to another cell in the same row, and click the right mouse button. Alternatively, select [Select Table Row] from the content auxiliary menu.
3. To select a range of rows, point to another row, above or below the row you selected, and click the right mouse button.

If you select a subrow of a subdivided column, multiple-clicking the left mouse button selects the containing row and then the entire table.

## Selecting ruling lines

---

You can select all ruling lines within the table or a subset of them. You can also select the ruling surrounding the table.

**Note:** If you have previously selected the blank (invisible) style for the ruling lines, they do not appear unless you select [Show Structure] from the document auxiliary menu.

### Selecting a ruling line within a table

---

1. Position the pointer on the ruling line.
2. Click the left mouse button.

When you select a ruling line, small white rectangles appear at both ends of the line.

### Selecting a range of ruling lines within a table

---

1. Select a ruling line.
2. Point to a ruling line other than the one you selected.
3. Click the right mouse button.
4. Click the right mouse button on any other ruling line (horizontal or vertical) you want to include in the range.

### Selecting equal-level ruling lines within a table

---

You can select all ruling lines at the same level to change them as a group. For example, you may want all the horizontal ruling lines to be twice as thick as the vertical lines, or you may want to display only the vertical ruling lines.

1. Select a ruling line.
2. Click the left mouse button again to select all ruling lines at the same level. For example, if you select a ruling line of an undivided column, clicking the left mouse button selects all column ruling lines for undivided columns.

**Note:** This method does not extend the selection automatically to the horizontal ruling line that separates the header row from the data cells. If you want to include that line in the selection, select it with the right mouse button after you complete step 2.

## Selecting the ruling line surrounding the table

---

To select the ruling line around a table, you first need to stretch the frame border away from the table:

1. Select the frame border.
2. Select the <Stretch> alternate function key and stretch the frame border away from the table border.
3. Select the table border.

The Document Editor highlights the outside ruling line by placing small rectangles at points where lines intersect.

After you stretch the frame border away from the table border, you can treat the ruling line around the table the same as an inside line. You can select inside lines and use the right mouse button to extend the selection to include the ruling line around the table, or vice versa.

## Selecting an entire table

---

Use one of these methods to select an entire table:

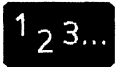
- Select the table frame border.
- Select a row or column and repeatedly click the left mouse button until you select the entire table.
- Select the frame anchor for the table. To display the anchor, select [Show Structure] from the document auxiliary menu.

You can copy, move, or delete any table you select with the methods listed above.

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## Refreshing ruling lines

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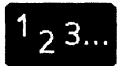
Sometimes when you make changes to the structure of a table, the order in which the ruling lines are erased and redrawn leaves some lines incomplete. The table left on the screen does not have all the ruling lines as they will appear on the printed page. The Document Editor lets you refresh the ruling lines so the table on the screen will show the latest changes.

1. Select the table containing the ruling lines you want refreshed.
2. Select [Refresh Table Lines] from the content auxiliary menu. The Document Editor redraws the current ruling lines of the table.

---

## Changing the number of elements in a table

---



The default size of a newly entered table is two columns by two rows. You can change the number of columns or rows in a table using four methods:

- For a default by-column table, the **Number of Columns** property is set to [Varying], and you can change the **Number of Rows** property to a new fixed number. The number of columns then automatically increases by one each time you press <SKIP/NEXT> with the caret in the last (lower right) cell of the table.

**Note:** Make sure that the cursor keys are disabled when you use the <SKIP/NEXT> key, or the caret will not move from one cell to another when you press <SKIP/NEXT>.

- For a default by-row table, the **Number of Rows** property is set to [Varying], and you can change the **Number of Columns** property to a new fixed number. The number

of rows then automatically increases by one each time you press <SKIP/NEXT> with the caret in the last (lower right) cell of the table.

- If you select a row and then start typing, the Document Editor inserts a new row following the existing row.
- You can copy or move existing rows or columns into the table using the <COPY> and <MOVE> keys.

### **Inserting a row during fill-in**

---

1. Select the table row above where you would like to insert a new row.
2. Type the information that you want to be in the first cell of the new row. The Document Editor automatically inserts a new row and puts the information you type into the first cell.

### **Copying or moving elements in a table**

---

You can use the <COPY> key to increase the number of columns or rows in a table, and the <MOVE> key to increase or rearrange columns or rows.

1. Select one or more columns or rows that you want to copy or move.
2. Press <COPY> or <MOVE>.
3. For columns, select the vertical ruling line to the left of the desired location of the new columns. For rows, select the horizontal ruling line above the desired location of the new rows.

If the table ruling lines are not visible, simply position the pointer between the columns or rows where you want to place the new columns or rows. The vertical or horizontal feedback arrows appear when you have



pointed to a place that can accept the columns or rows.

**Note:** When you copy columns, you may receive a warning message indicating that columns no longer have unique names. If you will be using column names in fill-in rules, update the **Name** property on the Table Column property sheet so that each column has a unique name.

## **Copying or moving elements between tables**

---

You can copy or move rows and columns between tables that do not have identical structures. However, keep these restrictions in mind if you are transferring data between tables:

- To copy or move columns successfully, make sure the columns in the destination table have the same number of rows as the columns being copied or moved. You can copy or move a subcolumn to become an undivided column as long as the columns in the table have the same number of rows as the subcolumn has. Conversely, you can copy or move an undivided column so that it becomes a subcolumn, as long as the number of rows matches.
- You can copy rows to any destination even if the column structures are different, as long as the number of column elements matches. For example, you can copy a row containing a column and two subcolumns to another table containing three undivided columns.

---

## Entering column headings

---

**1 2 3...**

The Document Editor automatically inserts a header row in each table you enter. Use the cells of the header row to identify each column in your table. If the header row of the table is not visible, select [Show] for the **Visibility** property on the Table Header property sheet.

When you use <SKIP/NEXT> within the header row, the caret advances through the header row.

**Note:** Make sure that the cursor keys are disabled when you use the <SKIP/NEXT> key, or the caret will not move from one cell to another when you press <SKIP/NEXT>.

1. Select the first cell in the table header row.
2. Type the desired column label.
3. Press <SKIP/NEXT> to move the caret to the next cell in the header row.
4. Repeat steps 2 and 3 until you complete the header row.

If you want to fill in only some of the cells in the header row, or if you want to change the contents of a cell, you can select the cell directly without using the <SKIP/NEXT> key.

---

## Subdividing columns and rows

---

**1 2 3...**

By choosing the appropriate layout of columns and rows, you can show the relationships between groups of data. You can customize your tables further by dividing columns into subcolumns and dividing rows into subrows.

## Dividing one column into two subcolumns

---

1. Select the column you want to divide.
2. Select [Subdivide Table Column] from the content auxiliary menu.

The Document Editor divides the column into two subcolumns. To create more than two subcolumns, use the next procedure.

## Dividing one column into several subcolumns

---

1. Select the column you want to divide and press <PROP'S>.
2. On the Table Column property sheet, select [Divided] for the **Structure** property.
3. Type the number of subcolumns you want for the **Subcolumns** property.
4. Select [Done] or press <PROP'S> to close the property sheet.

The Document Editor inserts the subdivided columns within the column you selected.

**Note:** If the column is too narrow for the subcolumns, the Document Editor displays an error message and does not remove the property sheet. You can either reduce the number of subcolumns or increase the column width to correct the error.

## Creating subrows

---

1. Select a column in a by-row table and press <PROP'S>.
2. On the Table Column property sheet, select [Divided] for the **Structure** property.
3. Type 1 for the **Subcolumns** property if you want the subrows in a single column. If you enter a number greater than 1, the column

will be divided into subcolumns as well as subrows.

**Note:** This step also divides the header with a horizontal ruling line. Select the line and make it a blank ruling line if you do not want the column header divided into two horizontal sections.

4. Select [Repeating] for the **Subrows** property.
5. Select [Done] or press <PROP'S> to close the property sheet.
6. Place the caret in the column you selected in step 1, and press <SKIP/NEXT>. A subrow appears. If you created subcolumns in step 3, place the caret in the right subcolumn and press <SKIP/NEXT> to create subrows.
7. Repeat step 6 with the caret in the bottom subrow to create additional subrows, until you have the column divided the way you want it.

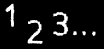
**Note:** Pressing <SKIP/NEXT> while in the last cell of the last subrow inserts a new subrow whether you need another one or not. Therefore, when you have inserted data in the last cell of the last subrow, use the mouse instead of <SKIP/NEXT> to select the next cell for data entry. Alternatively, press <SHIFT> and <SKIP/NEXT> to go to the next cell in the table.

8. If you unintentionally create an extra subrow, delete the extra subrow as described under "Deleting elements in a table" next.

---

## Deleting elements in a table

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1. Select the columns, rows, subcolumns, or subrows you want to delete.
2. Press <DEL>.

**Note:** You can delete a subrow only within the column or subcolumn containing it. If the subrow extends across multiple columns, you must delete it from each column.

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## Restoring a subdivided column

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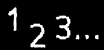


1. Select the column containing the subcolumn.
2. Press <PROP'S>.
3. Deselect [Divided] as the **Structure** property.
4. Select [Done] or press <PROP'S> to close the property sheet.

---

## Sorting data in a table

---



You can sort data in rows or in subrows. After you update a table, you can resort its contents.

---

## Sorting data in table rows

---

1. Select the table and press <PROP'S>.
2. Select [Sort Keys] for the **Display** setting.

**Note:** The **Sort Key List** includes one line for each column available for sorting. Each sort keys auxiliary menu lists the individual column names you can select as sort keys. It excludes columns containing subrows; you

can sort data in subrows only within the column containing the subrows, as described under "Sorting data in subrows," next.

3. From the sort keys auxiliary menu, select the column to be used for the first-level sort.

**Note:** Column and subcolumn names are listed in the sort keys auxiliary menu as they occur from left to right in the table. Duplicate column names may appear for subcolumns within columns. You can change subcolumn names on the Table Column property sheet to create unique names.

4. Select [Ascending] or [Descending] on the first line of the **Sort Key List**.
5. For additional levels of sorting, repeat steps 3 and 4 on each additional line of the **Sort Key List**.
6. Select [Apply] to see the results of the sort.
7. Select [Done] or press <PROP'S> to close the property sheet.

**Note:** If the results of a sort are unsatisfactory, check the **Type** property on the Table Column property sheet for the column you are sorting. For example, if you are sorting numeric data, the **Type** property should be set to [Amount]. If necessary, change the data type; then repeat the sort.

## Sorting data in table subrows

---

In some tables, you want to sort the data in a column according to the entries in the column subrows. Subrow sorting applies only to columns that have subcolumns and subrows.

To use subrow sorting, be sure to set the following properties on the Table Column property sheet:

- **Structure** [Divided]
- **Subrows** [Repeating]

Use the following procedure to sort data in table subrows:

1. Select the column that contains the subrows you want to sort, using the [Select Table Column] command in the desktop auxiliary menu.
2. Press <PROP'S> and select [Sort Keys] for the **Display** setting.

**Note:** If the [Sort Keys] option does not appear on the property sheet, you have selected a set of columns that cannot be sorted.

3. Select from the Sort Key auxiliary menu the name of the subcolumn you want to use in the first sort.
4. Specify the order of sort by selecting either [Ascending] or [Descending] in the first line of the **Sort Key List**.
5. Repeat steps 3 and 4 for each additional sort level you need.
6. Select [Apply] to see the results of the sort.
7. Select [Done] or press <PROP'S> to close the property sheet.

---

## Sorting data in updated tables

---

Once you have set up a **Sort Key List** for the columns and subcolumns you want to sort, you can update the table and re-sort it without reopening the Sort Keys property sheets. Use the following procedure:


1. Select the table.
2. Select the [Sort Table Selection] command in the content auxiliary menu.

The Document Editor reorders the rows and subrows based on the contents of the columns specified on the lists of sort keys in the table.

---

## Scrolling through the contents of a long table

---



Use these procedures to scroll through the contents of a long table:

- Click the [+] on the right side of your document window with the left mouse button to move to the top of the next page.
- Click the [+] on the right side of your document window with the right mouse button to move to the next section of a long table.
- If the bottom of the long page is showing, click the [+] on the right side of your document window with the right mouse button to display the top of the next page; click the right button again to display the bottom of that page.

**Note:** The table appears split only when it is printed. The table continues to appear as a long page on your screen even after you paginate it.



The Document Editor splits the long table at the row division nearest to the bottom page margin. (The table does not divide in the middle of a row, such as between subrows.) The Document Editor then inserts any text and graphics following the table on the last page of the table, if there is room.

## **Part 3**

# **Fields and fill-in rules**





Fields are structures within documents which reserve space for variable information such as names and addresses in form letters. Documents that typically contain fields include:

- Order forms
- Form letters
- Personnel records
- Reports

If you have the *VP List Manager* application, you can use a record file as the source of information for fields in your documents (see the *Information Management Reference* volume in this library).

You also can use a table as the source of field information in the Mail Merge feature of the Document Editor (see the “Mail Merge” chapter in this volume).

You can perform the same operations on the contents of a field as you can on text in a document, including:

- Changing the character properties
- Moving, copying, and deleting text

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## Key concepts of fields

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To use fields in a document, you first need to decide what type of field you need. After you insert fields, you define their properties and specify the order in which they will be filled.

## Document fields and graphics fields

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Two types of fields are available: document fields and graphics fields. Their properties are identical, but their uses vary.

### Document fields

---

A *document field* can contain standard text characters and alternate-keyboard characters. You can insert a document field into any text area of a document, including text frames and frame caption areas.

You can insert anchored frames into a document field if the field is in document text, but not if the field is in a text frame or a frame caption.

The text in the field can look like any text in the document, which is useful for creating a uniform appearance in form letters and reports. Alternatively, you can use any of the ViewPoint font or character properties to emphasize the text in a field.

### Graphics fields

---

A *graphics field* can contain the same text and alternate-keyboard characters as a document field. However, it cannot contain an anchored frame.

The graphics field exists within an embedded text frame and constitutes the entire contents of that frame. You can insert a graphics field in either an anchored or an embedded graphics frame. A graphics field is sometimes referred to as a form field.

Using graphics fields, you can construct office forms consisting of groups of graphics fields combined with other graphics and text. You can set properties for the frame of the graphics field as you would for any text frame (refer to the

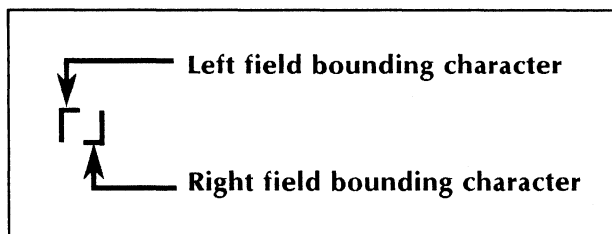
“Frames” chapter in *Document Editor Reference* volume 3 in this library).

## Field bounding characters

---

The field bounding characters are a pair of right-angle structure characters that mark the bounds, or limits, of a field (Figure 10-1). They occupy no space in a printed document, but appear in the displayed document when you select [Show Structure] from the document auxiliary menu.

Figure 10-1 **Field bounding characters**



## Properties of text within a field

---

When you enter text into an empty field, the font and other character properties of the text are determined by the properties of the left field bounding character.

You can set character properties for the left bounding character as you do for any other character. You also can change the properties of the characters in the field, using the same editing techniques you use for document text.

When a field is filled automatically, based on a field fill-in rule, the text appearance depends on the particular fill-in rule. For more information, refer to the “Appearance of field or table filled automatically” appendix in this volume.

## Fill-in order

---

The *fill-in order* of a document is the sequence in which the caret moves from field to field when you press <NEXT>. After you insert all the fields, you set the fill-in order to suit the needs of the document user. If necessary, you can edit or reset the fill-in order at any time.

You can also include tables in the fill-in order. Within each table, the fill-in direction of the table determines where the caret moves. The fill-in order need not include every field or table in the document.

When filling in fields, you can bypass a field in the fill-in order by pressing <SKIP> instead of <NEXT>, unless the property sheet for the field has specified that an entry is required.

## Prompts

---

When you create fields, you can enter prompts that will appear in the desktop message area when the fields are filled in. You enter a prompt in the **Description** property of the Field properties sheet. If you do not enter a prompt in the **Description** property, the field **Name** property appears as the prompt.

A prompt can provide a description of the information the field should contain. It can also specify whether the field is restricted to a certain type of entry, such as text or numerals, to a range of values, or to a particular format.

For prompts to appear during field fill-in, you need to select [Prompt for Fields].

## Field data types and restrictions

---

When you create a field, you can limit the type of data that can be entered or automatically filled into the field. The data type, which you select on

the Field properties sheet, can be set to any characters or to text, numeric amounts, or dates.

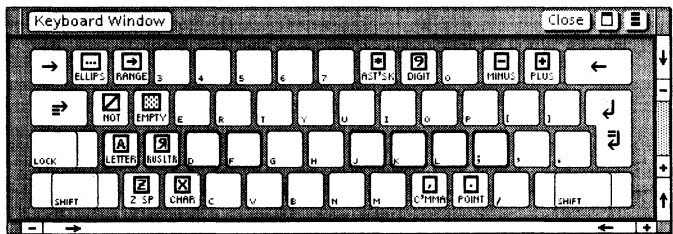
You also can restrict the format, range of acceptable characters, and length of the field contents. For example, if the only acceptable entries for a field are one or two characters long, you can restrict the field length to two characters. After you set restrictions on the type, range, format, or length of data entered in the field, the Document Editor can check entries for errors during field fill-in.

## The Field Special keyboard

The Field Special keyboard (Figure 10-2) contains the special symbols and characters you need to set field format and range restrictions.

The keyboard is available whenever the caret is in the **Format** or **Range** property in the Field properties sheet.

Figure 10-2 The Field Special keyboard



## Fill-in rules

When you create a field, you can define a rule that tells the Document Editor what to enter in the field.

For example, for an order form, you can define a rule that instructs the Document Editor to add the prices of all items ordered and put the total in a Total field. If you want to extract the value



of a field from another document, you can write a rule for that process, too.

As you press <NEXT> to move the caret from field to field, the Document Editor automatically fills in each field that has a fill-in rule. Selecting [Update Fields] from the content auxiliary menu fills in or updates all fields that have fill-in rules.

The value generated by a fill-in rule often depends on the values in other fields or tables in the document. When you change the value in one or more fields or tables, it is wise to select [Update Fields], to be certain that all fields with fill-in rules display the correct current values.

## Error checking

---

If you use <NEXT> or <SKIP> to exit a field, or you select the [Go to Next Field] command from the content auxiliary menu, that field is checked for errors in data type, range, format, or length. In addition, its fill-in rule, if any, is executed.

Any subsequent fields also are checked and their fill-in rules executed if you use <NEXT> or [Go to Next Field] to move through them. However, if you use <SKIP>, any fields subsequently skipped are not checked for errors or fill-in rule execution.

If you use the mouse to move the caret to a field and then make changes, no error checking or automatic fill-in occurs if you do not press <NEXT> or <SKIP> to exit the field.

## Field commands

---

The following commands for defining, filling in, and updating fields are available in the content auxiliary menu:

### [Update Fields]

Updates the contents of all fields and table columns that have fill-in rules and format

---

specifications. The Document Editor compares the entry in each field and table column with its property settings, checking for errors. If an error exists in the type, range, format, or length of an entry, the Document Editor stops to display a message and highlight the entry. Each time you select [Update Fields], updating and checking begin at the first field or table in the fill-in order. The process continues in sequence through the fill-in order and then through any fields or tables outside the fill-in order.

[Set Field/Table Fill-in Order]

Prompts you to select the fields (and tables) in the order in which they should be filled in.

[End Field/Table Fill-in Mode]

Completes the operation of setting the fill-in order.

[Edit Field/Table Fill-in Order]

Displays the Field/Table Fill-in Order Editor option sheet to let you change the fill-in order.

[Go to Next Field]

Moves the caret to the next field that appears in the document, in text sequence. Also selects all existing text in the field. If an anchored frame contains a field, the caret moves from the frame anchor to the field in the anchored frame, and then back to the text following the anchor. If an error exists in the type, range, format, or length of the current field entry, the Document Editor displays a message and highlights the field entry.

[Go to First Fill-in]

Moves the caret to the first field or table in the fill-in order.

The following command is available in the document auxiliary menu:

[Prompt for Fields]

Displays a prompt for each field, if you advance to the field using the <SKIP/NEXT> key or the [Go to First Fill-in] command. The prompt is the contents of the **Description** property on the Field properties sheet or, if that property is blank, the contents of the **Name** property. When selected, the command is replaced by [Don't Prompt for Fields]. [Don't Prompt for Fields] discontinues prompting for fields.

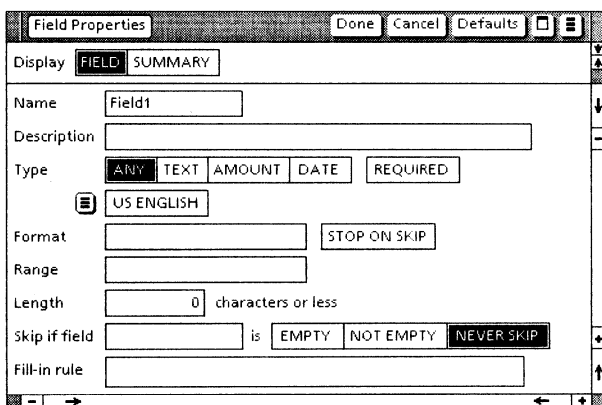
## The Field properties sheet

The Field properties sheet controls the contents and fill-in characteristics of a field. When you select a field by checking twice on a field bounding character, pressing <PROP'S> displays the Field properties sheet. The **Display** setting enables you to select one of two associated property sheets: the Field property sheet and the Summary property sheet.

### The Field property sheet

When you select [Field] for the **Display** setting, the Field property sheet appears (Figure 10-3). The Field property sheet lets you specify the name and description of a field, define its data type, and restrict its format and range. You can also specify a fill-in rule for the field.

Figure 10-3 The Field property sheet



#### Name

Specifies the field name. The *VP Document Editor* provides default names. It names the field by appending an integer to the word "Field," numbering the fields sequentially.

The first field you create is Field1, the fifth is Field5, and so forth.

When filling in fields, if you select [Prompt for Fields] from the document auxiliary menu, the contents of the **Name** property appear as the prompt in the message area if the **Description** property is blank.

You can change the default field name. The new field name must be unique within the document. If you plan to use the field name in fill-in rules or CUSP Button programs, it must follow these guidelines:

- It cannot contain spaces or punctuation characters.
- It cannot begin with a numeral.
- It cannot be a reserved word of the CUSP language. See the "Reserved words and name restrictions" appendix in this volume.

**Note:** You can work around the above restrictions by including one or more apostrophes in the field name when it is used in a fill-in rule or CUSP Button program. (See the "Reserved words and name restrictions" appendix in this volume.) However, to preserve readability, follow the guidelines above whenever possible.

---

### Description

Enables you to enter text describing the field contents. If you select [Prompt for Fields] in the document auxiliary menu before filling in fields, the contents of the **Description** property appear in the message area as the prompt for the field. (If the **Description** property is blank, the contents of the **Name** property comprise the prompt.)

### Type

Specifies the acceptable data type for the field. The choices are:

#### [Any]

Specifies that entries may contain any characters with any associated properties.

#### [Text]

Specifies that entries may contain only letters, numerals, and symbols. Numerals of type [Text] are recognized as text, not as numeric values.

#### [Amount]

Specifies that entries may consist only of numerals, a plus sign (+) or minus sign (-), and a decimal point (or a comma, depending on the **Language** property). Other characters are allowable, if specified within the **Format** property.

#### [Date]

Specifies that entries must be dates. Entries can use the format Month Day, Year (for example, October 29, 1989) or MM/DD/YY (for example, 4/8/89 or 10/29/89). You can specify a default date format in the **Format** property.

The default data type is [Any].

### [Required]

Specifies that the field must be filled in. If selected:

- Pressing <NEXT> does not move the caret to the next field if the required field is empty.
- Pressing <SKIP> does not skip the field, even if it already contains data.

**Note:** An entry in **Skip If** may override (take precedence over) the [Required] selection.

- Selecting [Update Fields] from the content auxiliary menu produces an error message if the field is empty.

In the default setting, **[Required]** is not selected.

### Language

Specifies the language of the field text. An auxiliary menu lists the available choices. The language you select determines the formats for fields of type [Amount] and [Date]. For example, 4/30/89 is interchanged with 30/4/89, as appropriate, when the fill-in rule specifies the current date.

The default language setting is determined by the **Default Keyboard** parameter in the [System] section of the User Profile.

### Format

Used in combination with field types [Text], [Amount], and [Date], enables you to control the format in which information appears. Leave this property blank if the field has no format restrictions.

When you use a format with field type [Text], it defines the order and type of characters to be entered. When you use a format with field type [Amount] or [Date], it defines the format in which the field contents are displayed.

You enter format characters from the Field Special keyboard into the **Format** text-entry box. Format characters are listed below for each field type.

### Type [Text]

#### format character    Limits the entry to

[ X ]	Any character
[ A ]	A letter or a space
[ 9 ]	A digit
[ Z ]	A digit or a space

You can also specify required punctuation in the format by entering it from the standard keyboard.

For example, if you want a field to contain a Social Security number, you enter the format:

[9][9][9]-[9][9]-[9][9][9][9]

Enter the hyphens from the standard keyboard.

If the person filling in the field uses letters instead of numbers, or forgets to enter hyphens, an error message appears when <NEXT> or <SKIP> is pressed or when [Update Fields] is selected from the content auxiliary menu.

### Type [Amount]

#### format character    Limits the entry to

[ + ]	A plus sign (+) or minus sign (-)
[ - ]	A minus sign (-) or no character
[ 9 ]	A digit
[ Z ]	A digit or a space
[ , ]	A comma or a space
[ . ]	A decimal point (period)
[ * ]	An asterisk (must be in the first position)



You can also specify currency symbols or other literal characters as part of the displayed format by entering them from the appropriate keyboard.

**Type [Date]  
format**

**Limits the entry to**

MM/DD/YY	An abbreviated date
Month Day, Year	A spelled-out date

You type the format exactly as shown above, using any combination of uppercase and lowercase.

The Document Editor automatically converts dates entered in other formats to the specified format. For example, if the date format is MM/DD/YY and you type January 1, 1988 when you fill in the field, the date appears in the field as 1/1/88. (It also appears as 1/1/88 if you enter 01/01/88.)

If you do not specify a format, the field accepts your keyboard entries in either format and leaves them unchanged. If the field is filled in by a fill-in rule and no format is specified, the form used is Month Day, Year.

Type [Date] formats are also affected by the **Language** property setting, as noted above.

**Stop on Skip**

If selected, indicates that pressing the <SKIP> key in a previous field causes the caret to skip any fields without [Stop on Skip], [Required], or overriding **Skip If** property settings selected and to stop at the current field.

In the default setting, [Stop on Skip] is not selected.

## Range

Defines the range of acceptable entries. Leave this property blank if the field has no range restrictions.

If you specify a range, and the person filling in the field enters data that is not in the range, an error message appears when <NEXT> is pressed or when [Update Fields] is selected from the content auxiliary menu.

To specify a range, you enter format characters from the Field Special keyboard and text and numbers from the standard keyboard. The format characters are:

### Format

#### character      Description



The *ellipsis* (or “wildcard”) stands for any number of characters or for no character.



The *range arrow* specifies alphabetical, numerical, or date order, standing for:

- “Between” if it separates two text, two numeric, or two date values
- “Before” if it precedes a value
- “At or after” if it follows a value



The *not* symbol excludes the value range it precedes.

Figures 10-4 and 10-5 illustrate some examples of ranges.

Figure 10-4 Examples of text ranges

Range	Acceptable entries
Smith	Smith
Smith☐	Any text that begins with Smith
☐Smith	Any text that ends with Smith
☐Smith☐	Any text that contains Smith
☐Jones☐Smith☐	Any text that contains Jones followed somewhere by Smith
Jones☛Smith	Any text whose alphabetical order is between Jones and Smith, inclusive
Smith☛	Any text whose alphabetical order is at or after Smith
☛Smith	Any text whose alphabetical order is at or before Smith
☐☐☐Smith☐	Any text not containing Smith

**Length**

Defines the maximum allowable number of characters for the field. Leave this property at 0 (zero) if the field has no length restrictions.

Figure 10-5 **Examples of amount and date ranges**

Range	Acceptable entries
100	100
100 <input type="checkbox"/>	Any number greater than or equal to 100
<input type="checkbox"/> 100	Any number less than or equal to 100
1 <input type="checkbox"/> 100	Any number between 1 and 100, inclusive
1/24/89 <input type="checkbox"/>	Any date equal to or after 1/24/89
1/1/89 <input type="checkbox"/> 12/31/89	Any date in 1989
<input checked="" type="checkbox"/> 0 <input type="checkbox"/> 9.99	Any number outside the range 0 through 9.99

### Skip If

Defines conditions for skipping a field (depending on the state of another field) when you press <NEXT> or <SKIP> or select [Update Fields]. The name you enter must be the name of a field in the same document. The choices are:

#### [Empty]

Specifies that this field should be skipped if the named field is empty. This option has no effect if the box after **Skip If** is blank.

#### [Not Empty]

Specifies that this field should be skipped if the named field is not empty. This option has no effect if the box after **Skip If** is blank.

[Never Skip]

Specifies that this field has no dependency on any other field. You enter nothing in the blank area.

The default is [Never Skip].

**Note:** The setting in the **Skip If** field overrides (takes precedence over) any setting for the **Required** or **Stop on Skip** properties.

### **Fill-in Rule**

Defines the fill-in rule used by the Document Editor to fill in the field automatically.

For more information about fill-in rules, see the "Fill-in rules for fields" chapter in this volume. For information about fill-in rules that refer to values in tables, see the "Fill-in rules and pathnames for tables" chapter in this volume.

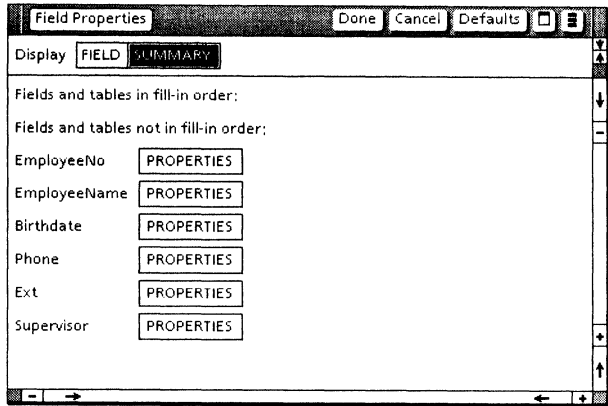
## **Summary property sheet**

---

When you select [Summary] for the **Display** property on the Field properties sheet, the Summary property sheet appears (Figure 10-6). The Summary property sheet lists the fields according to whether and in what order they are included in the established fill-in order. Use the Field Summary property sheet when you want to set the properties of several fields in sequence.

**Note:** The [Done] command on the Summary property sheet sets properties on all fields whose properties were changed, regardless of which properties are displayed at the time it is selected. However, the [Defaults] command returns to the default values only the properties of the fields for which properties are displayed.

Figure 10-6 The Summary property sheet



### Fields and tables in fill-in order

Lists the names and the order of the fields and tables currently included in the fill-in order. The first name listed is the first field or table in the order; the last name listed is the last field or table in the order.

### Fields and tables not in fill-in order

Lists the names of the fields and tables currently omitted from the fill-in order.

### [Properties]

Displays the properties of the field named beside it (Figure 10-7). You may change the properties using this display.

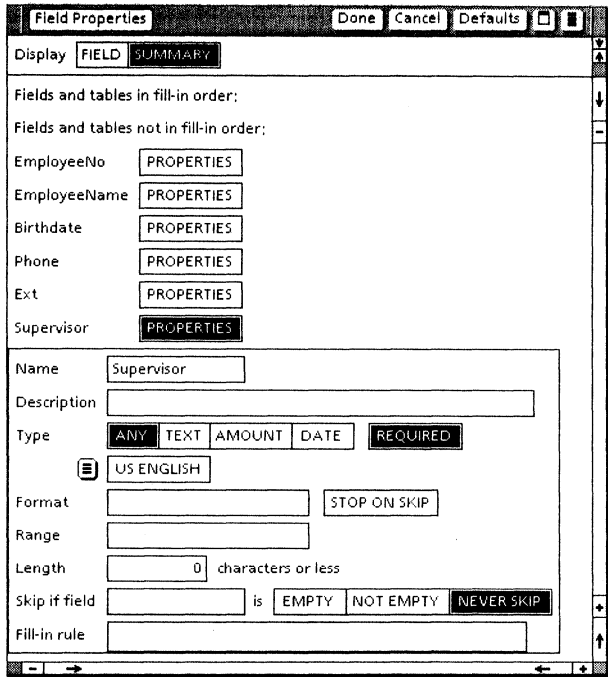
---

## The Field/Table Fill-in Order Editor option sheet

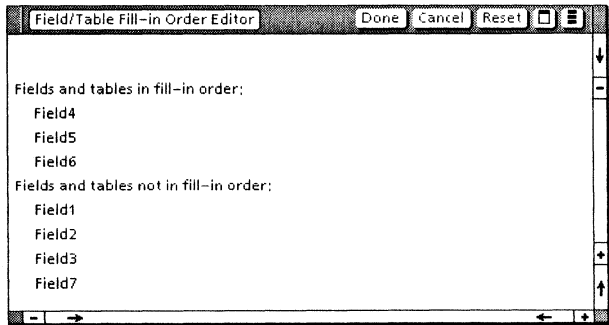
---

The option sheet for the Field/Table Fill-in Order Editor (Figure 10-8) enables you to set or change the fill-in order for the fields and tables in a document. The option sheet appears when you select the [Edit Field/Table Fill-in Order] command in the content auxiliary menu.

**Figure 10-7 Field Summary, displaying the properties of one field**



**Figure 10-8 The Field/Table Fill-in Order Editor option sheet**



## Field/Table Fill-in Order Editor option sheet commands

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The following commands are available in the floating items auxiliary menu:

**[Show Object]**

Highlights the field or table in the document for which properties are displayed.

**[Reset]**

Resets the fill-in order as it was when you first displayed the option sheet.

## Field/Table Fill-in Order Editor options

---

**Fields and tables in fill-in order**

Lists the names and the order of the fields and tables currently included in the fill-in order. The first name listed is the first field or table in the order; the last name listed is the last field or table in the order.

**Fields and tables not in fill-in order**

Lists the names of the fields and tables currently omitted from the fill-in order.

You can set or change the fill-in order by moving field or table names from one list to the other or from one position to another in the same list.



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## Creating fields in a document

---

1 2 3...

To create fields, you insert them, set their properties, and establish the fill-in order.

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## Inserting fields into a document

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You can insert document fields and graphics fields into a document. Although their field properties are the same, the methods for inserting them are different.

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### Inserting document fields

---

1. Open the document in which you want to insert document fields. Make sure the document is in edit mode.
2. Select [Show Structure] from the document auxiliary menu.
3. Select the character preceding the position for the document field.
4. Hold down <KEYBOARD>, then press the alternate function key corresponding to <Special> to access the Document Special keyboard.
5. Still holding down <KEYBOARD>, press the <Z> key to insert the document field.

The field bounding characters appear.

6. Release <KEYBOARD>.
7. To insert more document fields, copy the field you inserted to other locations, or repeat steps 4 through 6.

## Inserting graphics fields

---

1. Open the document in which you want to insert graphics fields. Make sure the document is in edit mode.
2. Select [Show Structure] from the document auxiliary menu.
3. Select a location inside an anchored or embedded graphics frame.
4. Hold down <KEYBOARD>, then press the alternate function key corresponding to <Special> to access the Graphics Special keyboard.
5. Still holding down <KEYBOARD>, press the <G> key to insert the graphics field.
6. Release <KEYBOARD>.
7. To insert more graphics fields, select the text frame containing the field you inserted, and copy it to other locations within anchored or embedded frames. Alternatively, you can repeat steps 3 through 6.

Alternatively, you can insert a graphics field by copying it from the Basic Graphics Transfer Document. It is named "Form Field" on the transfer document.

See the *Graphics Reference* volume in this library for more information on the Graphics Special keyboard and the Basic Graphics Transfer Document.

## Setting field properties

---

1. Point to either field bounding character of the field whose properties you want to set.
2. Double-click the left mouse button.

3. Press <PROP'S>. The Field property sheet appears.
4. Set the properties for the field. (Refer to "The Field properties sheet" earlier in this chapter for descriptions of the field properties.)

When the caret is in the box for the **Format** or **Range** property, you can hold down <KEYBOARD> and press <Special> to access the format and range symbols on the Field Special keyboard.

If you want to set the properties for several fields in sequence, refer to "Displaying and setting the properties of several fields" later in this chapter.

5. If you changed the **Format** or **Fill-in Rule** property of fields that already contain data, select [Update Fields] to see the effect of the changed properties.

## Setting text properties for field contents

---

When you insert a field into a document, the left field bounding character takes on the same character properties as the character that precedes it. The properties of the first character you enter inside the field are the same as the properties of the left field bounding character. If you want the field contents to have different character properties, follow this procedure:

1. Select the left field bounding character.
2. Press <PROP'S>, and set the character properties that you want for the field contents. Alternatively, you can use top-row function keys to set the properties.

You can change the properties of any characters that have been entered in the field the same way you change them in other document text.

For information on how the field contents appear when entered by a fill-in rule, refer to the “Appearance of field or table filled automatically” appendix.

## **Setting the fill-in order**

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The last step in creating fields is to set the fill-in order, using one of the two methods described below. Later, you can use these methods to edit the order or reset the order entirely.

### **Setting the fill-in order by selecting fields**

---

1. With the document open and in edit mode, select [Set Field/Table Fill-in Order] from the content auxiliary menu. Then select [Yes] to confirm that you want to recreate the fill-in order.
2. Select either field bounding character of the first field to be filled in.
3. Select either field bounding character of the next field to be filled in.
4. To specify a table in the fill-in order, select anywhere within the table or its frame.
5. Repeat steps 3 and 4 until you have selected all the fields and tables you want in the fill-in order.
6. Select [End Field/Table Fill-in Mode] from the content auxiliary menu.
7. If you want to verify the fill-in order, select [Edit Field/Table Fill-in Order] from the content auxiliary menu. The Field/Table Fill-in Order Editor option sheet displays the established fill-in order. Edit the order as needed, following the procedure in the next section.

### Setting or editing the fill-in order using the Field/Table Fill-in Order option sheet

---

1. Select [Edit Field/Table Fill-in Order] from the content auxiliary menu. The Field/Table Fill-in Order option sheet appears.
2. Select field or table names and move them under **Fields and tables in fill-in order** in the desired fill-in order. You can move single fields or tables, or blocks of fields and tables.  
  
**Note:** Position the pointer carefully to specify the destination. An arrow appears at the left margin when you select a valid destination.
3. To remove a field or table from the fill-in order, select the name and move it under **Fields and tables not in fill-in order**.
4. If you want to reset the order as it was when you opened the option sheet, select [Reset] from the floating items auxiliary menu.
5. If you want to verify which field or table corresponds to a field or table name, select the name in the option sheet and then select [Show Object] from the option sheet floating items auxiliary menu. The corresponding field or table is highlighted in the document.
6. Select [Done].

### Displaying and setting the properties of several fields

---

1. Point to either the left or right bounding character of any field in the document.
2. Double-click the left mouse button.
3. Press <PROP'S>. The Field property sheet appears.

4. Select [Summary] for the **Display** setting. The Summary property sheet appears.
5. Select [Properties] next to the name of the first field whose properties you want to display. The field properties appear.
6. To close the display of properties for that field, select [Properties] again.
7. To display the properties of several fields simultaneously, so you can scroll through them:
  - a. Select [Properties] for the last field whose properties you want to display.
  - b. Select [Properties] for each preceding field.
8. To change the field properties, select new settings for the properties you want to change.

**Note:** Selecting [Defaults] returns to default settings only the properties of the fields for which properties are displayed.
9. When you are finished, select [Done] or press <PROP'S>. The Document Editor saves all property changes, regardless of which properties were displayed at the time you closed the property sheet.
10. If you changed the **Format** or **Fill-in Rule** property of fields that already contain data, select [Update Fields] to see the effect of the changed properties.

---

## Filling in fields

---



These procedures assume you are filling in fields that you, or someone else, already created.

If you have a document on your desktop that you plan to fill in several times, use it as a template: copy and rename the document for each version you intend to fill in.

## Preparing to fill in fields

---

1. Open the document and place it in edit mode.
2. Select [Prompt for Fields] from the document auxiliary menu if you want to display prompts as you fill in the fields.
3. Select [Show Structure] from the document auxiliary menu if you want to display field bounding characters.

## Starting fill-in

---

1. Select [Go to First Fill-in] from the content auxiliary menu. The caret appears in between the bounding characters of the first field of the fill-in order.

2. Type the contents of the field.

You also can enter text by moving or copying information into the field. However, you must use the select-adjust method (not multiple clicks) to select the characters you want to move or copy into the field.

3. To change the field contents before exiting the field, use standard Document Editor operations.

## Moving from field to field

---

You can choose one of three ways to move the caret from field to field. The first two ways provide error checking for restricted fields, and the third way does not.

### **Moving to the next field in the fill-in order**

---

1. Press <NEXT>. The caret moves to the next field in the fill-in order, unless the current field contains an error.

If the next field has a fill-in rule, that field fills in automatically, and the caret appears in the following field.

2. If an error message appears, correct the current field and then press <NEXT>.

**Note:** If the current field is of type [Date] or [Amount], moving to the next field makes the date or amount format conform to the format specified in the field properties.

### **Moving to the next required field**

---

1. Press <SKIP>. The caret moves to the next required field in the fill-in order, unless the current field contains an error. A required field has the [Required], the [Stop on Skip], or an appropriate **Skip If** property setting selected.
2. If an error message appears, correct the current field and then press <SKIP>.

### **Moving quickly to any field**

---

1. If the field bounding characters are not displayed, select [Show Structure] from the document auxiliary menu.
2. Select the left bounding character of the field in which you want the caret to appear. The caret appears in the field.

**Note:** You can use this method to move the caret to any field in the document (not just the fields in the fill-in order); however this method does not provide error checking. Select [Update Fields] from the content auxiliary menu for error checking when you finish filling in the fields.



## Modifying text or data in a field

---

To return to a field you want to edit, you can use one of these two methods:

- Select text preceding the field and either press <NEXT> or select [Go to Next Field] from the content auxiliary menu. The Document Editor highlights all existing text in the next field, so you can replace everything in the field.
- Use the mouse to select characters inside the field. The mouse selects only the characters you specify; use this method for minor changes.

## Selecting error checking and automatic fill-in

---

1. Select [Update Fields] from the content auxiliary menu.

Error checking and fill-in rule execution begin at the first field or table in the fill-in order. The Document Editor compares the contents of the field or table with any restrictions entered on the Field property sheet or the Table Column property sheet.

When the Document Editor finds an error, it highlights it and displays a message.

2. If an error message is displayed, correct the error and again select [Update Fields] from the content auxiliary menu.
3. Repeat steps 1 and 2 until all errors are found and corrected.

After the Document Editor checks all fields and tables in the fill-in order, it checks all fields and tables not in the fill-in order. After it checks all fields and tables in the document, it displays a completion message.

---

## 11. Fill-in rules for fields

When defining properties for a field, you can specify what information should be entered automatically into the field. You specify the fill-in value by entering a formula, called a fill-in rule, on the Field property sheet. You write the rule in the fill-in rule programming language, which is included in *VP Document Editor* and is a subset of the CUSP programming language.

Using <NEXT> to advance through the fields, or selecting [Update Fields] from the content auxiliary menu, causes the Document Editor to fill a value into each field that has a fill-in rule.

Fill-in rules also enter values into tables. Much of the information in this chapter applies to table fill-in rules as well as to field fill-in rules. However, for complete information on table fill-in rules, see the "Table pathnames and fill-in rules" chapter in this volume.

---

### Key concepts of fill-in rules

---



A fill-in rule consists of a number, text, or a date, or an expression that results in a number, text, or a date.

### Fill-in rule syntax

---

Fill-in rule *syntax* governs the way you must write a fill-in rule to produce a given value and enter it into a field. You can specify values, called operands, and combine them with symbols and keywords, called operators, to generate the desired field entry.

The rules you write can be simple, or they can contain many elements. For example, a rule can be:

- A single value that enters the current date in the field.
- The name of another field, which copies the contents of that field into the current field.
- Symbols and values that define a mathematical operation, such as adding the values in two fields together, then multiplying by a number, then dividing by another number, and then subtracting a percentage (as it seems you sometimes have to do on your tax forms).

To create an effective fill-in rule for a field, you have to think about the result you want. Decide how you can define the result that should appear in the field. In some cases, you can define the result in terms of the contents of other fields and tables, applying various text, mathematical, and comparison operations.

The rules you write can even refer to the contents of a field or table in another document. For more information, see the “Fill-in rule access to other documents” chapter in this volume.

The fill-in rule syntax and examples shown in this chapter illustrate the punctuation you must use in fill-in rules, such as required spaces, commas, or semicolons. Also, you can refer to the “Spaces and punctuation in fill-in rules” appendix for guidelines and more examples.

## Rule results

---

If a field has a fill-in rule, the Document Editor evaluates it (making any necessary calculations) and enters the result into the field. The result is always a number, text, or a date. The fill-in rule you write can specify the result to be:

- A *constant*, which is a value that does not rely on other values.
- A *built-in value*, obtained using a special word in the fill-in rule language, such as CURRENTTIME for the current time.
- A value from another field, such as a name in the body of a letter, obtained from the salutation field.
- The evaluation of a mathematical calculation, such as a total price obtained from the sum of the prices in fields in an order form.
- The evaluation of a choice based on information in other fields, such as calculating shipping charges based on the state of residence.

The data type of a fill-in rule result must be compatible with the **Type** property of the field for which the rule is written. Table 11-1 depicts compatibility between data type and field type. An "X" indicates that the result of the fill-in rule will be accepted in the field.

A fill-in rule may use information from other fields or from tables. However, the result is entered only into the field that has the fill-in rule. For example, a fill-in rule for Field1 can use data from Field2, but the Field1 fill-in rule cannot enter data into Field2.

Table 11-1 **Compatible types for results and fields**

Data type of fill-in rule result	Field Type property			
	ANY	TEXT	AMOUNT	DATE
TEXT	X	X		
AMOUNT	X	X	X	
DATE	X	X		X

---

## Operands

---

An *operand* is a value that is operated on. In the arithmetic expression:

$$5 + 2$$

the numbers 5 and 2 are the operands.

In fill-in rules, operands can be:

- Constants (a specific numeric value, text string, or date)
- Field names (representing the amount, date, or text contained in the field)
- Built-in values
- Table pathnames (see the "Fill-in rules and pathnames for tables" chapter in this volume for more information)

**Note:** In amount fields that contain a fill-in rule result, the Document Editor precisely displays numerals up to 13 significant digits. It rounds numbers larger than 13 significant digits, adding zeros as required.

## Constants

---

When a fill-in rule for a field contains a constant, that constant always produces the same value. The value entered into the field may vary if there are additional elements in the fill-in rule; however, the constant itself does not vary.

### Numeric constants

---

Numeric constants are numbers, such as the number 5. A numeric constant cannot include a comma. For example, 10,000 cannot be a numeric constant, but 10000 can be.

You can use scientific notation to represent numeric constants. For example, you can use 1.6E3 or 1.6E+3 to represent the number 16000, or 3.5E-2 to represent 0.035. (Do not insert a space before or after the plus or minus sign when entering scientific notation.)

### Text constants

---

Text constants (sometimes called “text strings”) consist of a sequence (string) of characters within quotation marks (“ ”), such as the name “Minneapolis.” The quotation marks tell the Document Editor that the text within them is a constant, rather than a field name or anything else. The quotation marks do not appear in the actual field.

If you want to enter a quotation mark as part of a text constant, you must precede it with another quotation mark. Two examples are:

Text desired: 3"  
Text constant: "3""

Text desired: The name “Minneapolis”  
Text constant: "The name ""Minneapolis"""

Text constants may consist of numbers or dates within quotation marks. The Document Editor can automatically convert text constants

consisting of digits to numbers. However, it cannot recognize a date entered as a text constant unless you convert it with the MAKEDATE operator (refer to “Conversion operators” and “Test operators” at the end of the “Operator syntax” section of this chapter).

Text constants have the following characteristics:

- You can assign character properties to them.
- They can include spaces, tabs, and new-line and new-paragraph characters.
- They can include characters from any alternate keyboard except the Special keyboard.

### **Dates**

---

You can convert a text constant to a date by preceding it with the MAKEDATE operator. The Document Editor converts the text constant to the default Month Day, Year format or to the format specified on the Field property sheet. It also adjusts the month-day order based on the **Language** property of the field.

You can add or subtract a number to or from a date. The result is a new date that is the specified number of days later or earlier than the original date. You also can subtract one date from another, which results in a number.

**Note:** Legal workstation dates fall within the range of year 1900 to year 2050.

### **Built-in values**

---

The fill-in rule language provides eight built-in values. You can use a built-in value alone or in combination with other elements.

The built-in values and the result each produces are as follows:

**CURRENTTIME**

The current time of day, in the form [h]h:mm followed by "am" or "pm"; for example, 8:00 am. The time is entered only in U. S. format, not in a format such as 0800. The field type must be [Any] or [Text].

**CURRENTDATE**

The current date; for example, October 16, 1988, or 10/16/88 if MM/DD/YY is the format specified for a field of type [Date]. The field type must be [Any], [Text], or [Date].

**CURRENTMONTH**

An amount that corresponds to the order of the current month in the year. For example, if the current month is January, the result is 1; if it is February, the result is 2. The field type must be [Any], [Text], or [Amount].

**CURRENTDAY**

An amount that corresponds to the current day of the month. If today is May 8, the result is 8. The field type must be [Any], [Text], or [Amount].

**CURRENTYEAR**

An amount that corresponds to the current year. The field type must be [Any], [Text], or [Amount].

**CURRENTUSER**

The name of the person logged on to the workstation. The field type must be [Any] or [Text].

The value of CURRENTUSER is your user name in its primary form. The name does not include user domain and organization names, nor any alias you may have used when logging on.



### THE NAME OF THIS DOCUMENT

The name of the document containing the field. The field type must be [Any] or [Text]. You must include a space between the words of this built-in value.

### PI[]

The mathematical constant pi, which begins with 3.1415926. The number of decimal places depends on the format specified. The brackets following PI must be empty. The field containing PI[] must be of type [Any], [Text], or [Amount].

### Field names

---

You can use a field name as a fill-in rule or as an element of a fill-in rule. When a fill-in rule contains a field name, the contents of the named field are used in determining the value of the field containing the fill-in rule.

A field name consisting of *alphanumeric* characters (letters and numerals) can be entered, as is, into a fill-in rule. If the field name includes nonalphanumeric characters such as spaces, precede each of those characters with an apostrophe (') in the fill-in rule. See the "Reserved words and name restrictions" appendix.

### Operators and the CHOOSE expression

---

*Operators* are symbols such as + or \*, or keywords such as MIN or SQUAREROOT, that work on the operands in fill-in rules. The order in which the operations are performed is described later under "Combining operations in fill-in rules."

The types of operators in the fill-in rule language are:

- **Arithmetic operators**, which perform simple mathematical functions such as addition and multiplication, as well as more complex

functions such as calculating the standard deviation.

- **Text operators**, which create new text constants and find the text constant that is first or last in alphabetical order.
- **Conversion operators**, which convert values to another data type for use as operands in fill-in rules, and **test operators**, which evaluate whether values can be successfully converted to different data types.
- **Count operators**, which count the number of elements in part or all of a table.

The CHOOSE expression chooses a calculation to perform based on the results of one or more conditions. These conditions are stated using comparison operators, which evaluate whether values are equal to, greater than, or less than each other; and logical operators, which combine or negate comparison operations.

The next section, "Operator syntax," explains how to use CHOOSE expressions and arithmetic, text, comparison, logical, conversion, and test operators in fill-in rules. See the "Fill-in rules and pathnames for tables" chapter in this volume for information on how to use count operators.

---

## Operator syntax

---



In the following syntax descriptions, words shown in all-uppercase letters represent words that you must type as shown, letter for letter. However, you can type them in uppercase, lowercase, or mixed case.

Words shown in lowercase boldface letters represent information that you supply in your particular application. Typical lowercase, boldface words include **amount**, **date**, and **text**, representing the type of data permitted as operands in fill-in rules.

The syntax descriptions show an ellipsis (...) where you can continue supplying operands for a fill-in rule. Otherwise, you must enter all punctuation exactly as shown in the syntax descriptions.

The syntax descriptions indicate the data type that results from each operation. Keep in mind that the data type of the fill-in rule result must be compatible with the data type of the field for which the rule is written. See Table 11-1 earlier in this chapter for compatible result and field types.

Generally, you can choose to include or omit spaces between operators and operands. The syntax descriptions state where exceptions apply to this convention. Also, you can refer to the "Spaces and punctuation in fill-in rules" appendix for examples of fill-in rule punctuation.

---

## Arithmetic operators

---

Arithmetic operators work on numeric constants and on field references to numeric constants. In addition, some arithmetic operators work on dates.

---

### The + (addition) operator

---

Action: Adds values.

Syntax 1: **amount + amount**

Result: [Amount]

Example: Field1 + 2

If the value of Field1 is 3, this fill-in rule adds 2 to that value and yields a result of 5.

Syntax 2: **date + amount**

Result: [Date]

**Note:** This syntax is valid only if the date operand is:

- A reference to a type [Date] field
- A text constant representing a legal date, preceded by the MAKEDATE conversion operator

Example: Field1 + 5

If the value of date field Field1 is 8/6/88, this fill-in rule adds 5 to that value and yields a result of 8/11/88.

---

### The - (subtraction) operator

---

Action: Subtracts one value from another.

Syntax 1: **amount - amount**

Result: [Amount]

Example: Field1 - 2

If the value of Field1 is 5, this fill-in rule subtracts 2 from that value and yields a result of 3.

Syntax 2: **date - amount**  
Result: [Date]

**Note:** This syntax is valid only if the date operand is:

- A reference to a type [Date] field
- A text constant representing a legal date, preceded by the MAKEDATE conversion operator

Example: Field1 - 5

If the value of date field Field1 is 8/6/88, this fill-in rule subtracts 5 from that value and yields a result of 8/1/88.

Syntax 3: **date - date**  
Result: [Amount]

**Note:** This syntax is valid only if each date operand is:

- A reference to a type [Date] field
- A text constant representing a legal date, preceded by the MAKEDATE conversion operator

Example: Field1 - Field2

If the values of date fields Field1 and Field2 are 8/6/88 and 8/1/88, respectively, this fill-in rule subtracts 8/1/88 from 8/6/88 and yields a result of 5.

---

**The \* (multiplication) operator**

---

Action: Multiplies values.

Syntax: **amount \* amount**

Result: [Amount]

Example: PI[] \* 2

This fill-in rule multiplies the value of pi by 2 and yields a result of 6.28.

---

**The / (division) operator**

---

Action: Divides one value by another.

Syntax: **amount / amount**

Result: [Amount]

Example: Field1 / 10

If the value of Field1 is 250, this fill-in rule divides that value by 10 and yields a result of 25.

---

**The % (percentage) operator**

---

Action: Divides a value by 100.

Syntax: **amount%**

Result: [Amount]

Example: 50% \* Field1

If the value of Field1 is 32, this fill-in rule calculates 50 percent of that value and yields a result of 16.

---

**The - (unary minus) operator**

---

Action: Reverses the sign of a value.

Syntax: **-amount**

Result: [Amount]

Example: -Field1

If the value of Field1 is 5, this fill-in rule yields a result of -5. If the value of Field1 is -5, this fill-in rule yields a result of 5.

### **The EXP (exponent) operator**

---

Action: Calculates an amount equal to the power of a value or the power of the mathematical constant e.

Syntax 1: EXP[**amount,power**]

Result: [Amount]

Example: EXP[Field1, 3]

If the value of Field1 is 2, this fill-in rule calculates that value to the third power and yields a result of 8.

Syntax 2: EXP[**power**]

Result: [Amount]

Example 1: EXP[1]

This fill-in rule yields the mathematical constant e. (The constant begins with 2.71828.)

Example 2: EXP[2]

This fill-in rule yields  $e^2$ . (It begins with 7.389056.)

### **The LN (natural logarithm) operator**

---

Action: Computes a natural logarithm. A natural logarithm is a logarithm to the base e, where e is a numeric constant whose value is EXP[1].

Syntax: LN[**amount**]

Result: [Amount]

Example 1: LN[1]

This fill-in rule yields 0 ( $e^0 = 1$ ).

Example 2: LN[2]

This fill-in rule yields 0.6931 ( $e^{.6931} = 2$ ).

---

### The LOG (logarithm) operator

---

Action: Computes a logarithm.

Syntax: LOG[**base**, **arg**]

Result: [Amount]

**Note:** LOG computes the logarithm to the base **base** of **arg** by dividing the natural logarithm of **arg** by the natural logarithm of **base**.

Example 1: LOG[10, 100]

This fill-in rule yields 2 ( $10^2 = 100$ ).

Example 2: LOG[10, .001]

This fill-in rule yields a result of -3 ( $10^{-3} = .001$ ).

Example 3: LOG[3, 81]

This fill-in rule yields 4 ( $3^4 = 81$ ).

Example 4: LOG[2.35, 1.87]

This fill-in rule yields .73 ( $2.35^{.73} = 1.87$ ).

---

### The MAX (maximum) operator

---

Action: Finds the highest value in a list of values.

Syntax 1: MAX[**amount**, **amount**, ...]

Result: [Amount]



Example: MAX[50, Field1]

If the value of Field1 is 65, this fill-in rule yields a result of 65.

Syntax 2: MAX[**date, date, ...**]

Result: [Date]

**Note:** This syntax is valid only if each date operand is:

- A reference to a type [Date] field
- A text constant representing a legal date, preceded by the MAKEDATE conversion operator

Example: MAX[Field1, Field2]

If the values of date fields Field1 and Field2 are 8/6/88 and 8/1/88, respectively, this fill-in rule finds the later date and yields a result of 8/6/88.

### The MEAN operator

---

Action: Calculates the mean (average) of a list of values.

Syntax: MEAN[**amount, amount, ...**]

Result: [Amount]

Example: MEAN[Field1, Field2, Field3]

If the values of Field1, Field2, and Field3 are 3, 7, and 20, respectively, this fill-in rule calculates the average of those values  $((3+7+20)/3)$  and yields a result of 10.

---

## The MIN (minimum) operator

---

Action: Finds the lowest value in a list of values.

Syntax 1: MIN[**amount, amount, ...**]  
Result: [Amount]

Example: MIN[50, Field1]

If the value of Field1 is 65, this fill-in rule yields a result of 50.

Syntax 2: MIN[**date, date, ...**]  
Result: [Date]

**Note:** This syntax is valid only if each date operand is:

- A reference to a type [Date] field
- A text constant representing a legal date, preceded by the MAKEDATE conversion operator

Example: MIN[Field1, Field2]

If the values of date fields Field1 and Field2 are 8/6/88 and 8/1/88, respectively, this fill-in rule finds the earlier date and yields a result of 8/1/88.

---

## The MOD (modulo) operator

---

Action: Divides one value by another and yields the remainder.

Syntax: **amount MOD amount**  
Result: [Amount]

**Note:** You must insert a space between MOD and its operands.

Example: 16 MOD 3

This fill-in rule divides 16 by 3 and yields the remainder, 1.

### The **PRODUCT** operator

---

Action: Multiplies a list of values.

Syntax: **PRODUCT[amount, amount, ...]**

Result: [Amount]

Example: **PRODUCT[Field1, Field2, Field3]**

If the values of Field1, Field2, and Field3 are 1, 2, and 4, respectively, this fill-in rule multiplies those values and yields a result of 8.

### The **SQUARE** operator

---

Action: Multiplies a value by itself.

Syntax: **SQUARE[amount]**

Result: [Amount]

Example: **SQUARE[Field1]**

If the value of Field1 is 4, this fill-in rule squares that value and yields a result of 16.

### The **SQUAREROOT** operator

---

Action: Yields the square root of a value.

Syntax: **SQUAREROOT[amount]**

Result: [Amount]

Example: **SQUAREROOT[Field1]**

If the value of Field1 is 16, this fill-in rule calculates the square root of the value and yields a result of 4.

---

### The STANDARDDEVIATION operator

---

Action: Calculates the standard deviation of a list of values.

Syntax: STANDARDDEVIATION  
[amount, amount, ...]

Result: [Amount]

**Note:** The formula that calculates the standard deviation uses N (rather than N-1) as the divisor.

Example: STANDARDDEVIATION  
[Field1, Field2, Field3]

If the values of Field1, Field2, and Field3 are 9, 10, and 11, respectively, this fill-in rule yields a result of .82.

---

### The SUM operator

---

Action: Adds a list of values.

Syntax: SUM[amount, amount, ...]

Result: [Amount]

Example: SUM[Field1, Field2, Field3, Field4]

If the values of Field1, Field2, Field3, and Field4 are 10, 20, 30, and 40, respectively, this fill-in rule adds those values and yields a result of 100.

---

### Trigonometric operators

---

Action: Each of the following operators performs its respective trigonometric operation on an amount, interpreted as radians.

Syntax:      SIN[amount]  
                 COS[amount]  
                 TAN[amount]  
                 ARCSIN[amount]  
                 ARCCOS[amount]  
                 ARCTAN[amount]

Result:       [Amount]

## Text operators

---

Text operators enable you to create text constants by joining (concatenating) other text constants, numeric constants, dates, or built-in values; or field references to any of these values. You also can use the MIN and MAX operators to determine which text constant is first or last in alphabetical order.

### The & (concatenation) operator

---

Action:       Links text, amounts, and dates together as one text constant. A concatenation operation can serve as a text operand in other operations.

Syntax:       **value & value ...**

Result:       [Text]

Example 1:    Field1 & Field2

If the value of Field1 is the text constant "WIDGET" and the value of Field2 is the numeric constant 6402, this fill-in rule results in "WIDGET6402."

Example 2:    Field1 & " " & Field2

A space is enclosed in the quotation marks in this example. If the values of Field1 and Field2 are "Steve" and "Smith," respectively, the result of the fill-in rule is "Steve Smith." The fill-in rule inserts the space between

“Steve” and “Smith” by concatenating it as a text constant.

Example 3: “Date: ” & CurrentDate

If the current date is 8/6/88, this fill-in rule results in the text constant “Date: 8/6/88.”

Example 4: CURRENTDAY & “-” &  
CURRENTMONTH & “-” &  
CURRENTYEAR

This fill-in rule reproduces the current date in a numerical format. If the current date is 8/6/88, this fill-in rule results in the text constant “6-8-1988.”

### **The MAX (maximum) operator**

---

Action: Finds the text constant that is last in alphabetical order among a list of text constants.

Syntax: MAX[**text, text, ...**]

Result: [Text]

Example: MAX[Field1, Field2, Field3]

If the values of Field1, Field2, and Field3 are “Jones,” “Smith,” and “Adams,” respectively, this fill-in rule results in the text constant “Smith.”

### **The MIN (minimum) operator**

---

Action: Finds the text constant that is first in alphabetical order among a list of text constants.

Syntax: MIN[**text,text,...**]

Result: [Text]

Example: MIN[Field1,Field2,Field3]

If the values of Field1, Field2, and Field3 are "Jones," "Smith," and "Adams," respectively, this fill-in rule results in the text constant "Adams."

## Comparison operators

---

Comparison operators state a condition that is either true or false. If the condition is true, the result of the comparison is "yes"; if the condition is false, the result of the comparison is "no."

One use of comparison operators is to compare operands in the CHOOSE expression, described later in this chapter. The CHOOSE expression enters a value in the field based on the result of one or more comparisons.

### Notes:

- Comparisons are made between two operands of the same data type (two amounts, two dates, or two text values). When comparing an operand of type [Text] or [Any] with an operand of type [Amount], the Document Editor automatically makes any conversion of type required, as described later in this chapter under "Conversion operators" and "Test operators."

To compare an operand of type [Text] or [Any] with an operand of type [Date], you must use a conversion operator to convert the text value to a date.

- In comparisons of text constants, the value that is first in alphabetical order is considered the lower value.
- In date comparisons, the earlier date is considered the lower value. In date comparisons, the Document Editor ignores the use of different date formats as long as they are valid.

---

**The = (equal to) operator**

---

Action: Compares two operands and results in “yes” if their values are equal.

Syntax: **value = value**

**Note:** You can enter the = symbol from either the standard keyboard or the math keyboard.

Example 1: Field1 = Field2

The result is “yes” if the fields have these respective values:

- 5 and 5
- 37 and “37”
- Hawaii and Hawaii
- January 1, 1988 and 1/1/88, if both fields are of type [Date]

Example 2: Field1 = 3\*5

The result is “yes” if the value of Field1 is 15.

---

**The # or ≠ (not equal to) operator**

---

Action: Compares two operands and results in “yes” if their values are not equal.

Syntax: **value # value**

**Note:** You can enter this operator using either the # symbol from the standard keyboard or the ≠ symbol from the math keyboard.



Example: Field1 # Field2

The result is "yes" if the fields have these respective values:

- 6 and 7
- High and Low

The result is "no" if the fields have these respective values:

- 6 and 6
- High and High

### **The > (greater than) operator**

---

Action: Compares two operands and results in "yes" if the first operand has a higher value than the second operand.

Syntax: **value > value**

Example: Field1 > Field2

The result is "yes" if the fields have these respective values:

- 30 and 25
- Brown and Adams
- 1/1/88 and 1/1/87

### **The < (less than) operator**

---

Action: Compares two operands and results in "yes" if the first operand has a lower value than the second operand.

Syntax: **value < value**

Example: Field1 < Field2

The result is "yes" if the fields have these respective values:

- 25 and 30
- Adams and Brown
- 1/1/87 and 1/1/88

---

**The > = (greater than or equal to) operand**

---

**Action:** Compares two operands and results in “yes” if the value of the first operand is greater than or equal to the value of the second operand.

**Syntax:** **value > = value**

**Note:** You can enter this operator using the > = symbols from either the standard keyboard or the math keyboard.

**Example:** Field1 > = Field2

The result is “yes” if the fields have these respective values:

- 25 and 25
- 26 and 25
- California and Arizona

---

**The < = (less than or equal to) operator**

---

**Action:** Compares two operands and results in “yes” if the value of the first operand is less than or equal to the value of the second operand.

**Syntax:** **value < = value**

**Note:** You can enter this operator using the < = symbols from either the standard keyboard or the math keyboard.

**Example:** Field1 < = Field2

The result is “yes” if the fields have these respective values:

- 5 and 20
- 10 and 10
- Johnson and Olson

## Logical operators

---

Logical operators state a logical condition that is either true or false. If the condition is true, the result of the comparison is "yes"; if the condition is false, the result of the comparison is "no."

One use of logical operators is to evaluate the results of operations in the CHOOSE expression. The CHOOSE expression and the order in which operations are performed are described later in this chapter.

### The AND operator

---

**Action:** Evaluates the results of two or more comparison or logical operations, and results in "yes" if the result of every operation is "yes."

**Syntax:** **operation AND operation**

**Note:** You must insert a space between AND and its operands.

**Example 1:** Field1 > 10 AND Field1 < 20

If the value of Field1 is 15, the result is "yes".

If the value of Field1 is 22, the result is "no."

**Example 2:** Field1 = Field2 AND  
Field2 > Field3 AND  
Field3 < Field4

The result is "yes" if the four fields have these respective values:

5, 5, 3, 10

The result is "no" if the fields have these respective values:

5, 5, 7, 10

(The value of Field2 is not greater than the value of Field3.)

## The OR operator

---

**Action:** Evaluates the results of two or more comparison or logical operations, and results in "yes" if the result of any single operation is "yes."

**Syntax:** **operation OR operation**

**Note:** You must insert a space between OR and its operands.

**Example 1:** Field1 = 10 OR Field1 = 20

If the value of Field1 is either 10 or 20, the result is "yes"; if it is any other value, the result is "no."

**Example 2:** Field1 < = Field2 OR  
Field2 > = Field3 OR  
Field3 # Field4

The result is "yes" if the fields have the following respective values:

10, 5, 3, 3

(One of the conditions is true: The value of Field2 is greater than the value of Field3.)

## The NOT operator

---

**Action:** Reverses the result of a comparison or logical operation.

**Syntax:** NOT **operation**

**Note:** You must insert a space between NOT and its operand.

**Example:** NOT Field1 = 10

If the value of Field1 is 10, the result is "no." Any other value yields a result of "yes."

## The CHOOSE expression

---

The CHOOSE expression evaluates several conditions or criteria and performs the fill-in rule associated with the first such criterion that produces a "yes" result.

**Syntax:** CHOOSE  
    criterion -> fill-in rule;  
    criterion -> fill-in rule;  
    ...;  
    ...;  
    ...;  
    OTHERWISE -> fill-in rule

### Notes:

- You must insert a space after CHOOSE.
- Indenting the criteria of a CHOOSE expression improves readability, but is optional.
- Enter the -> symbol by typing a hyphen followed by a greater-than symbol. A space is optional before the hyphen and after the greater-than symbol.

- A semicolon must follow each criterion/fill-in rule pair. Do not place a semicolon after the word CHOOSE or after the fill-in rule that follows the OTHERWISE condition.

When evaluating a CHOOSE expression, the Document Editor looks for the first criterion that produces a “yes” result; then it performs the fill-in rule associated with that criterion, which completes the operation.

If none of the criteria results in “yes,” the Document Editor performs the fill-in rule associated with the keyword OTHERWISE, which completes the operation.

Example: CHOOSE

```
State = "California" -> Total * .06;  
State = "Nebraska" -> Total * .04;  
OTHERWISE -> Total * .07
```

This CHOOSE expression calculates state sales tax according to the following conditions (the field containing the CHOOSE expression is named Tax):

- If the value of the State field is the text constant “California,” the Document Editor multiplies the value of the Total field by .06 and inserts the result in the Tax field.
- If the result of the first criterion is “no” and the value of the State field is the text constant “Nebraska,” the Document Editor multiplies the value of the Total field by .04 and inserts the result in the Tax field.
- If the results of the two criteria are both “no,” the Document Editor multiplies the value of the Total field by .07 and inserts the result in the Tax field.

## Conversion operators

---

The Document Editor normally converts values within fill-in rules automatically from one data type to another, as it does in the following situations:

- It converts amounts and dates to text constants when they are used as operands of the & (concatenation) text operation.
- It converts text constants containing digits to amounts when they are used as operands in arithmetic operations.

To explicitly specify data type conversion within fill-in rules, you can use one of three conversion operators: `MAKEDATE`, `MAKETEXT`, and `MAKEAMOUNT`.

Conversions to text cannot result in calculation errors; a text constant is treated as a string of characters and has no value other than a place in alphabetical order. In contrast, conversions to amounts or dates can result in calculation errors if the original value cannot be converted.

To avoid errors in amount and date conversions, you can instruct the Document Editor to first test whether a value can be converted to an amount or a date. The `ISVALIDAMOUNT` and the `ISVALIDDATE` test operators are available for this operation. Refer to "Test operators" later in this chapter for more information.

Of the three conversion operators, the `MAKEDATE` operator is the one used most frequently. If text has been used as a date, the only way to include it as a date in an operation is to convert it using the `MAKEDATE` operator.

### The MAKEDATE operator

---

**Action:** Converts text to a date within the current fill-in rule.

**Syntax:** MAKEDATE[**text**]

**Result:** [Date]

**Note:** The value of the text as a date must be a legal workstation date.

**Example:** MAKEDATE["September 11, 1988"]  
+ 10

The text constant is converted to a date, the amount 10 is added to it, and the date September 21, 1988 is displayed in the field.

### The MAKETEXT operator

---

**Action:** Converts an amount or a date to text within the current fill-in rule.

**Syntax 1:** MAKETEXT[**amount**]

**Syntax 2:** MAKETEXT[**date**]

**Result:** [Text]

**Example:** MAKETEXT[95] & "orders have been filled to date"

The amount 95 is converted to text, and the combined string, "95 orders have been filled to date," is entered in the field.

The result is the same if the amount 95 is the value in a field named Field1, and the operation is written as follows:

MAKETEXT[Field1] & "orders have been filled to date"



**Note:** The MAKETEXT operation is usually unnecessary because the Document Editor performs the conversion automatically. You may want to include a MAKETEXT operation simply to make it clear to yourself or another reader of your fill-in rule that the operation does occur.

### **The MAKEAMOUNT operator**

---

**Action:** Converts text consisting of digits to an amount within the current fill-in rule.

**Syntax:** MAKEAMOUNT[**text**]  
**Result:** [Amount]

**Note:** The text must consist of digits, such as 20. Words like "twenty" cannot be converted.

**Example:** MAKEAMOUNT["20"] \* 5

The text "20" is converted to the amount 20 and multiplied by 5. The amount 100 is entered in the field.

The result is the same if the text "20" is the value in a field named Field1, and the operation is written as follows:

MAKEAMOUNT[Field1] \* 5

**Note:** The MAKEAMOUNT operation is usually unnecessary because the Document Editor performs the conversion automatically. You may want to include a MAKEAMOUNT operation simply to make it clear to yourself or another reader of your fill-in rule that the operation does occur.

## Test operators

---

Use the test operators ISVALIDAMOUNT and ISVALIDDATE in CHOOSE operations to test whether a value can be converted to an amount or a date before converting it.

### The ISVALIDAMOUNT operator

---

**Action:** Tests whether a value can be converted to an amount. The result is "yes" if the operand can be converted to an amount.

**Syntax:** ISVALIDAMOUNT[**text**]

**Example:** ISVALIDAMOUNT["4567"]

The result is "yes."

### The ISVALIDDATE operator

---

**Action:** Tests whether a value can be converted to a date. The result is "yes" if the operand can be converted to a legal workstation date.

**Syntax:** ISVALIDDATE[**text**]

**Example:** ISVALIDDATE["1-2-88"]

The result is "no."

(However, the result would be "yes" if the text constant were "1/2/88.")

---

## Combining operations in fill-in rules

---

**1 2 3...**

Complex fill-in rules combine several operations to achieve the desired result. When you write complex fill-in rules, you must make sure that:

- Each operator has its own operands.
- The Document Editor evaluates the operations in the order you intend.

---

## Specifying operands for each operator

---

In fill-in rules, operators cannot share operands. For example, to express the comparison, "X is less than Y and greater than Z," you must express the complete relationship: "X is less than Y and X is greater than Z." The comparison operation is:

$X < Y$  AND  $X > Z$

---

## Defining the order of operation

---

The order of operation determines the order in which different operations in the same fill-in rule are performed.

---

### Using standard operator order

---

Normally, the Document Editor performs operations in sequence according to the following standard order of priority:

1. Arithmetic operators ARCCOS, ARCSIN, ARCTAN, COS, EXP, ISVALIDAMOUNT, ISVALIDDATE, LN, LOG, MAX, MEAN, MIN, PRODUCT, SIN, SQUARE, SQUAREROOT, STANDARDDEVIATION, SUM, and TAN; text operators MIN and MAX; conversion operators MAKEAMOUNT, MAKEDATE, and MAKETEXT; and count operators COUNT and COUNTALL

2. Arithmetic operators - (unary minus) and %
3. Arithmetic operators \*, /, and MOD
4. Arithmetic operators + and - (subtraction)
5. Text operator &
6. Comparison operators =, # ( $\neq$ ), <, <=, >, and >=
7. Logical operator NOT
8. Logical operator AND
9. Logical operator OR

The Document Editor performs operations having the same order of priority as they appear, from left to right. For example, if the fill-in rule is:

$$8-3 + 4$$

the first operation is to subtract 3 from 8, and then add 4 to the result:

$$(8-3) + 4$$

### Using parentheses to control order of operation

You can use parentheses to redefine the order in which to process operators. The Document Editor performs operations within parentheses first, from the innermost set of parentheses to the outermost.

The following example shows how the results can differ when you use parentheses to redefine the order of operation:

Without parentheses:

$$\begin{aligned} 3 + 4 * 7 \text{ is processed as } & 3 + (4 * 7) \\ & = 3 + 28 \\ & = \underline{31} \end{aligned}$$

With parentheses:

$$(3 + 4) * 7 \text{ is processed as } 7 * 7 \\ = \underline{49}$$

In another example, you might want a fill-in rule to evaluate whether the date in Field1 is not in the year 1988 (is prior to January 1, 1988 or after December 31, 1988) AND matches the date in Field2. Without parentheses, this fill-in rule will not always give you the correct evaluation:

```
Field1 < MAKEDATE["1/1/88"]  
OR  
Field1 > MAKEDATE["12/31/88"]  
AND  
Field1 = Field2
```

The AND operation is performed first, according to operator order, as follows:

The date in Field1 is compared to the date December 31, 1988 AND to Field2.

If the date in Field1 is later than December 31, 1988 and matches the date in Field2, the result is "yes." The entire expression results in "yes."

If the date is prior to December 31, 1988 or does not match the date in Field2, the result of the first operation is "no." In that case, the other OR condition is evaluated: If Field1 is prior to January 1, 1988, the entire expression results in "yes." Contrary to your intention, the date is not compared to the date in Field2.

The Document Editor performs the operations in the fill-in rule as if it were written with parentheses, as follows:

```
((Field1 > MAKEDATE["12/31/88"]) AND  
(Field1 = Field2))  
OR (Field1 < MAKEDATE["1/1/88"])
```

If you want to force the Document Editor to process the OR operation first, you can write:

```
((Field1 < MAKEDATE["1/1/88"]) OR
(Field1 > MAKEDATE["12/31/88"]))
AND (Field1 = Field2)
```

Written with these parentheses, the operation results in "yes" if the date in Field1 is not in the year 1988 and also matches the date in Field2.

---

## Using a CHOOSE expression to eliminate space between \$ and digits

---

1 2 3...

Parentheses also guarantee the proper order of operations in the following example. The example is useful for a total field in a form if you want no space between the dollar sign (or other currency symbol) and the first digit.

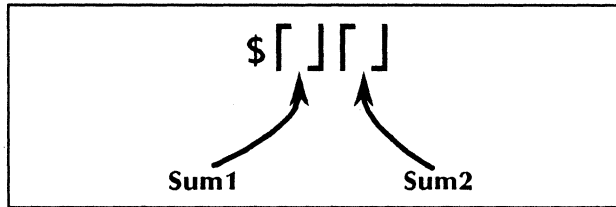
You can set a format such as \$[Z][Z][9][.][9][9] for an amount field that contains the sum of two or more other fields. The appearance of the total will vary, however, depending on the number of digits before the decimal. The [Z] format characters insert a space if the amount is less than 100 and two spaces if it is less than 10. Thus various totals may appear as \$400.00, or \$ 95.50, or \$ 0.75.

If you want such totals to appear as \$400.00, or \$95.50, or \$0.75, with no space between the dollar sign and the first digit, follow this example:

1. In the document, enter the \$ and two fields, with no space between them, at the position where the total should appear.

In this example, the fields are named Sum1 and Sum2 (Figure 11-1). Sum1 will contain the integer part of the total, and Sum2 will contain the decimal part.

Figure 11-1 Two fields for the integer and decimal parts of an amount



The amount fields to be summed are named A1 and A2.

2. For the Sum1 field, set its type to [Any] and enter the following as its fill-in rule:

CHOOSE

$(A1 + A2) < 1 \rightarrow "0";$

OTHERWISE  $\rightarrow$

$(A1 + A2) - ((A1 + A2) \text{ mod } 1)$

3. For the Sum2 field, set its type to [Amount] and its format as [.] [9] [9]. Enter the following as its fill-in rule:

$(A1 + A2) \text{ mod } 1$

You can substitute the names of any number of fields in every occurrence of  $(A1 + A2)$  in the fill-in rules; for example,  $(A1 + A2 + A3)$ , or using SUM, substitute  $(\text{SUM}[A1, A2, A3, A4])$ .

---

## Using CHOOSE expressions for alternate entries in forms

---

1 2 3...

CHOOSE expressions are useful for fields, typically in form letters, that enter data or space characters only if certain conditions are met by a preceding field. Examples are:

- A space character that is entered only if there is data in the middle initial field for a name in an inside address.
- A new-line character that is entered only if there is data in a company name field in an inside address.
- Text that is entered only if a certain field has data or contains an amount that falls in a certain range.
- The singular form of a noun that is entered if an amount field contains the value 1, or the plural form of the noun if it is greater than 1.

Figure 11-2 shows a form letter with fields set up for these kinds of entries.

The fill-in rule for each of the optional fields in the form letter consists of a CHOOSE expression.



Figure 11-2 A form letter with fields set up for optional entries

```

                                {DateToday*}

{FirstName} {Initial}{OpSpace}{LastName}
{Company}{OpNewLine}{Address}

Dear {FName+}:

xxx xxx xxxxxx xxx xxx xxxxxx xxxxxx xxx xxxxxx xxx
xxxxx xxx xxxxxx xxxxxx xxxxxx xxx.  xxx xxx xxx xxxxxx
xxxxx xxx xxxxxx xxx xxxxxx xxxxxx xxx {Quantity}
{OpNoun} xx xxxxx.

{OpParagraph}xxxxx xxxxxx xxx xxxxxx xxx xxxxxx xxx
xxxxx xxxxxx xxxxxx xxx.  xxx xxx xxx xxxxxx xxxxxx xxx
xxxxx.  xxx xxx xxx xxxxxx xxxxxx xxx xxxxxx xxx xxxxxx xxx
xxxxx xxx.

Yours truly

xxxxx x. xxxxxxx

```

\*Fill-in rule is CurrentDate  
+Fill-in rule is FirstName

### The OpSpace field

The fill-in rule for the OpSpace field is:

```

CHOOSE
  Initial = "" -> "";
  OTHERWISE -> " "

```

In the fill-in rule, the quotation marks on the Initial line contain nothing, whereas those on the OTHERWISE line contain a space character. The

OpSpace field will insert a space if you enter data in the Initial field; otherwise, it will not.

## The OpNewLine field

The fill-in rule for the OpNewLine field is:

CHOOSE

Company = "" -> "";  
 OTHERWISE -> "  
 "

The quotation marks on the Company line of the fill-in rule contain nothing, whereas those on the OTHERWISE line contain a new-line character. The OpNewLine field will start a new line if the Company field contains data; otherwise, it will not.

## The OpNoun field

The fill-in rule for the OpNoun field is:

CHOOSE

Quantity = 1 -> "box";  
 OTHERWISE -> "boxes"

If the value in the Quantity field is 1, then the singular form, "box," is entered in the OpNoun field. Otherwise, the plural form of the noun is entered.

## The OpParagraph field

The fill-in rule for the OpParagraph field is:

CHOOSE

Quantity > 10 -> "You are entitled to a quantity discount of 10% on your order, and you will see an entry to that effect on the invoice when the equipment is delivered.

";  
 OTHERWISE -> ""

If the value in the Quantity field is greater than 10, the text that begins on the Quantity line of the fill-in rule is entered in the field, including the new-paragraph character that follows it (in other words, all the characters between the quotation marks).

If the value is 10 or less, the field remains empty and there is no unwanted extra space between paragraphs.

---

## Using table pathnames in field fill-in rules

---

You can use table pathnames as operands in fill-in rules for fields or table columns. The “Fill-in rules and pathnames for tables” chapter describes the use of table pathnames to specify tables or parts of tables, such as rows or columns.

When using table pathnames as operands in fill-in rules for fields, keep the following points in mind:

- Some operators work on a single value, while other operators work on lists of values. Similarly, some table pathnames represent single values (a single cell or field in a table), while others represent lists of values (such as an entire row or column). Make sure that the table pathname you use is an appropriate operand for the operator of the fill-in rule.
- Table columns have associated data types, just as fields do.

---

## Detecting errors in fill-in rules

---

If a fill-in rule you write contains an error, the Document Editor notifies you in one of two ways:

- When you select [Done] after entering the rule, the property sheet stays open. The Document Editor highlights the part of the

rule containing the error, and displays a message. In this case, check for syntax errors in the fill-in rule.

- When you move the caret out of a field using <NEXT>, or when you select [Update Fields] from the content auxiliary menu, the Document Editor opens the property sheet. It highlights the part of the rule containing the error, and displays a message that identifies the type of error.

Possible reasons for errors in this case include a fill-in rule with a nonexistent or misspelled name for a field, table, table column or subcolumn, or a nonexistent table row number.

If the Document Editor enters an unexpected value into a field, check the operator order and use of operands in the fill-in rule for the field. You may need to add parentheses to force the operator order you want, or you may need to correct text you have used to specify an operand.

**Note:** If the Document Editor displays just a # symbol in a field or table cell, it indicates that the amount calculated by the fill-in rule does not fit within the format defined for the field or column. Change the format to accommodate the larger amount.

Some error messages use the term CUSP. The fill-in rule language in the Document Editor is a subset of the CUSP programming language.



---

## 12. Fill-in rules and pathnames for tables

Use fill-in rules for tables to enter values automatically into table columns and subcolumns.

Fill-in rules for tables use the same operators and operands as fill-in rules for fields (described in the “Fill-in rules for fields” chapter in this volume). However, a table fill-in rule works differently from a field fill-in rule in these ways:

- A table fill-in rule fills values into each cell of a column or subcolumn, rather than into just one cell.
- The table structure enables you to write fill-in rules that perform count operations to determine the number of elements in part or all of a table.

The Order table in Figure 12-1 is the basis for examples in this chapter.

Figure 12-1 **The Order table, with a fill-in rule in the TotalPrice column**

Item		Qty	PriceEach	TotalPrice	Status
OrderNo	Description				
32-1041	Letter Holder	1	6.95	6.95	SENT
42-6004	Bird Feeder	1	22.95	22.95	SENT
65-1010	Bath Towels	3	14.95	44.85	BACK
45-6676	Ornaments	5	4.95	24.75	SENT

You can write a fill-in rule for the TotalPrice column in the Order table to multiply each entry

in the Qty column by its respective value in the PriceEach column.

When you press <NEXT> to advance through the table, or select [Update Fields] from the content auxiliary menu, the Document Editor fills in the TotalPrice column.

---

## Key concepts of table fill-in rules

---



A fill-in rule for a table column or subcolumn can include the same operands as a field fill-in rule:

- Numeric and text constants
- Field references
- Built-in values

In addition, fill-in rules for tables and fields can refer to values in tables by including special operands called pathnames.

---

## Pathnames as operands

---

A *pathname* specifies a table, column, subcolumn, row, repeating row, or single cell. It is similar to a field reference, but refers instead to one or more values in a table. Some pathnames can serve as complete fill-in rules, while others must be operands within fill-in rules.

**Note:** For restrictions on the name of a table, column, or subcolumn used in a pathname, see the “Reserved words and name restrictions” appendix.

---

## Pathnames representing lists of values

---

A table pathname that refers to an entire table, column, subcolumn, row, or repeating row represents a list of values. It is a suitable operand for operations on lists of values, such as SUM, MEAN, and MIN operations. It is not suitable as the sole fill-in rule of a field or table column.

## Pathnames representing single values

---

You can construct a pathname that refers to a single table entry by naming the intersecting row and column containing the entry. This type of pathname is a suitable operand for any operator that works on a single value. It also can serve as the sole fill-in rule for a field or table column.

## Pathnames specifying a separate calculation for each column entry

---

Although a column pathname represents a list of values, you can use a form of pathname syntax that specifies a separate calculation for each entry in a column. For example, you can write a fill-in rule for the Order table TotalPrice column using this syntax; data is calculated separately for each row in the column.

## Data types for table pathnames

---

The data type of the values represented by a table pathname is the data type assigned to the column or subcolumn in which they exist.

Keep the data type of the values in mind when writing fill-in rules that contain pathnames. The source and destination data types must be compatible in the same way as field data types (refer to Table 11-1 in the “Fill-in rules for fields” chapter in this volume for compatible data types).



---

## Table pathname syntax

---



A table pathname can specify the entire table; a column or subcolumn; a row or repeating row, either explicitly or by a criterion; or a single table entry.

---

### Table pathname

---

The pathname for an entire table is simply the name of the table as shown in the **Name** property on the Table property sheet.

---

### Table column pathnames

---

A table column pathname specifies a list of values in a table column or subcolumn. It also can specify entry-by-entry calculation of table column or subcolumn values.

---

#### Pathname for a full table column

---

To specify the pathname for a table column, type the table name followed by a period (.) and the name of the column. The column name is the **Name** property entered in the Table Column property sheet. (The Table Column property sheet also shows the table name, preceding the column name.)

Syntax:     **table.column**

Example:    Order.Item

This column pathname specifies the entire list of values in the Item column of the Order table, shown earlier in Figure 12-1.

---

#### Pathname for a table subcolumn

---

To specify a subcolumn, use the same pathname you used to specify the column. Then add

another period and the name of the subcolumn. The subcolumn name is the **Name** property entered in the Table Column property sheet for the subcolumn. (The property sheet for the subcolumn also shows the name of the table and the column in which the subcolumn is contained, preceding the subcolumn name.)

Syntax: **table.column.subcolumn**

**Note:** Continue adding subcolumn names to the pathname to specify subcolumns of subcolumns.

Example: Order.Item.Description

This subcolumn pathname specifies the list of values in the Description subcolumn within the Item column of the Order table.

### **Pathname for entry-by-entry calculation of a table column or subcolumn**

---

A table column or subcolumn pathname accesses all values in the column or subcolumn as a single list. For separate calculations of the column entries, use the [THIS ROW] construct in the fill-in rule for the column.

The construct can refer only to rows in the same table as the column or subcolumn. It cannot refer to rows in a different table.

Place [THIS ROW] after the table name, before the first period in the pathname. A space or new-line character between the table name and the left bracket is optional. Do not space between the right bracket and the period that follows it.

Syntax: **table[THIS ROW].column**

Example: Order[THIS ROW].Qty \*  
Order[THIS ROW].PriceEach

This fill-in rule for the TotalPrice column multiplies the value in a row

of the Qty column by the value in the PriceEach column in the same row. The operation is performed in every row of the TotalPrice column.

## Table row pathnames

---

Pathnames for table rows can specify either the row number of a row within a table or a criterion for selecting a row within a table.

### Row-number pathname for a main row

---

You can specify a main (nonrepeating) table row by identifying its position in the table (row 1, row 2, row 3, and so forth).

Syntax: **tablename[ROW number]**

**Note:** In any table, row 1 begins after the row containing the column headings. The word ROW and the row number must appear within brackets. You must include a space between ROW and the number. A space between the table name and the left bracket is optional.

Example: Order[ROW 3]

This row pathname specifies row 3 in the Order table, which contains the information for the Bath Towels order item.

### Row-number pathname for a repeating row

---

The pathname for a repeating row consists of the main row pathname followed by the repeating row pathname. The repeating row pathname consists of the column name for the repeating row followed by the row number of the repeating row.

Syntax: **table**[ROW number].**column**[ROW number]

**Note:** The row number of the repeating row reflects its order within the main row, not within the table.

Example: Families[ROW 2].Children[ROW 2]

Refer to the Families table in Figure 12-2 for this example of a row number for a repeating row. The pathname leads to the table named Families, down to its second main row, across to the Children column, and down to the second subrow of that column. The identified subrow contains the name "Michael" and age "2."

Figure 12-2 The Families table

LastName	Children	
	Name	Age
Morris	Susan	10
	Jeff	8
	Toni	5
Owens	Larry	9
	Michael	2
Smith		
Jackson	Harvey	11

**Row-criterion pathname for table rows**

A row criterion refers to an entry in the table that satisfies a condition or criterion that you specify.

The row containing the entry then becomes the specified row.

Specifying a table row using a row criterion can be more convenient than using its row number for these reasons:

- You can write a fill-in rule without having to scroll through a document to find the table and count the rows.
- If you add or delete rows in the table, a fill-in rule with a row-criterion pathname still refers to the correct row and entry even if the row numbers change.

Syntax: **table**  
[ROW CALL IT **arbitraryname** WITH  
**arbitraryname.column = value**]

You assign an arbitrary name to identify the row containing the specified entry. Assigning a descriptive arbitrary name helps you formulate meaningful row criteria.

The arbitrary name can be any name not already used as a field name or table column name in the document. However, it cannot be a reserved word of the fill-in rule language (see the "Reserved words and name restrictions" appendix).

Use any comparison or logical operator to describe the relationship between the entry and the value you supply. (The syntax above uses the equal sign. The greater-than and less-than operators are often useful, also.)

The value can be any acceptable operand in the fill-in rule language. If you specify a field name or a table entry pathname for the value, you can base the criterion on whatever value

is in that field or table cell during fill-in rule processing.

Example: Order[ROW CALL IT Back WITH  
Back.Status = "BACK"]

This row-criterion pathname specifies the first row in the Order table that contains the text string "BACK" in the Status column.

In the remainder of this chapter, the syntax description uses the abbreviation **arb** for the arbitrary name.

### Row-criterion pathname for repeating rows

You can use the row-criterion syntax to specify a repeating row by including the syntax in the main row specification, the repeating row specification, or both, depending on your application.

Syntax: **table**  
[ROW CALL IT **arb1** WITH  
**arb1.column1 = value1**].**column2**  
[ROW CALL IT **arb2** WITH  
**arb2.column3 = value2**]

In this syntax:

- First, you identify the main row that contains the repeating rows.
- To do this, you specify that it is the main row that has a certain value in a certain column (**value1** in **column1** in the syntax).
- Next, you identify the column (of that main row) that contains the repeating rows (**column2** in the syntax).
- Then, you identify the repeating row. To do this, you specify that it is the repeating row that has a

certain value in a certain subcolumn  
(**Value2** in **column3** in the syntax).

**Notes:**

- A fill-in rule with a row criterion finds only the first instance that satisfies the criterion.
- Using row-criterion pathnames on large tables can be inefficient (because the system must search the entire table until it finds a row that satisfies the criterion), and it is usually unnecessary. You often can redesign your approach or your table so that you can use row-number pathnames.

## Table entry pathnames, with examples

---

The examples in this section refer to the Order and Families tables (Figures 12-3 and 12-4).

Figure 12-3 **The Order table**  
(same as Figure 12-1)

Item		Qty	PriceEach	TotalPrice	Status
OrderNo	Description				
32-1041	Letter Holder	1	6.95	6.95	SENT
42-6004	Bird Feeder	1	22.95	22.95	SENT
65-1010	Bath Towels	3	14.95	44.85	BACK
45-6676	Ornaments	5	4.95	24.75	SENT

Figure 12-4 **The Families table**  
(same as Figure 12-2)

LastName	Children	
	Name	Age
Morris	Susan	10
	Jeff	8
	Toni	5
Owens	Larry	9
	Michael	2
Smith		
Jackson	Harvey	11

A pathname for a single table entry consists of the row pathname followed by a period and the name of the column where the entry is located.

**Pathname for an entry in a main row and main column**

To specify an entry located in a main table row, add the column name to the row pathname.

Syntax 1: **table[ROW number].entrycolumn**

Example: Order[ROW 3].Qty

This entry pathname specifies the value in the Qty column of the row for the "Bath Towels" item in the Order table (the value is 3 in the example).

Syntax 2: **table[ROW CALL IT arb WITH Arb.column = value].entrycolumn**



Example: Order[ROW CALL IT Back WITH  
Back.Status = "BACK"].Qty

This row-criterion entry pathname specifies the value 3 in the Qty column of the "Bath Towels" row, using the value "BACK" in the Status column as the criterion for selecting the row.

### **Pathname for an entry in a main row and subcolumn**

---

To specify an entry that is part of a subcolumn, add to the row pathname both the column name and the subcolumn name.

Syntax 1: **table**  
[ROW **number**].**column.subcolumn**

Example: Order[ROW 3].Item.Description

This entry pathname specifies the "Bath Towels" entry in the Description subcolumn of the Item column in the Order table.

Syntax 2: **table** [ROW CALL IT **arb**  
WITH **arb.column1 =**  
**value**].**column2.subcolumn**

Example: Order  
[ROW CALL IT Back WITH Back.Status  
= "BACK"].Item.Description

This row-criterion entry pathname also specifies the "Bath Towels" entry, using the value of "BACK" in the Status column as the criterion for selecting the row.

### **Pathname for an entry within a repeating row**

---

The pathname for an entry within a repeating row consists of the repeating row pathname followed by the subcolumn name for the cell.

Syntax 1: **table**  
 [ROW **number**].**column**  
 [ROW **number**].**subcolumn**

Example: Families  
 [ROW 1].Children[ROW 2].Name

This entry pathname specifies the name "Jeff" in the second repeating row of the Name subcolumn, in the Children column of the Families table.

Syntax 2: **tablename**[ROW CALL IT **arb1** WITH  
**arb1.column1 = value1**].**column2**  
 [ROW CALL IT **arb2** WITH  
**arb2.column3 = value2**].**subcolumn**

Example: Families  
 [ROW CALL IT Ln WITH  
 Ln.LastName = "Morris"].Children  
 [ROW CALL IT Ch WITH Ch.Age =  
 8].Name

This row-criterion entry pathname also specifies the name "Jeff" in the Families table. It uses the value "Morris" to identify the LastName row and the value "8" to identify the Age repeating row.

**Note:** You can use both row-number syntax and row-criterion syntax to specify an entry in a repeating row, depending on your application.

## COUNT and COUNTALL operator syntax

---



Use COUNT and COUNTALL to count the number of elements in a table. Elements include columns, rows, and cells. Neither operator counts column headings.

Syntax: COUNT[operand, operand, ...]  
 COUNTALL[operand, operand, ...]

Result: [Amount]

An operand can be a table name or a pathname that specifies a portion of a table.

**Note:** With multiple operands, the Document Editor first counts the number of elements in the table or table portion specified by each operand. Then it calculates the sum of all the elements counted for all the operands.

COUNT and COUNTALL generally yield different results. They yield the same result only when the operand includes the most subdivided levels of a table, and none of the cells is empty.

### The COUNT operator

---

COUNT yields the number of non-empty, immediate (next-level) elements in the specified table or table portion. It counts non-empty columns, main rows, and repeating rows, but not subcolumns.

**If the operand specifies a:**

**COUNT yields the number of non-empty:**

Table

Main rows in the table

Column

Rows or repeating rows in the column

Row

Columns in the row (excluding subcolumns)

See “Writing fill-in rules to count table elements” later in this chapter for examples of fill-in rules that use COUNT.

## **The COUNTALL operator**

---

COUNTALL yields the total number of elements, non-empty and empty, in a table, column, or row. It counts all levels of elements, including subcolumns. See “Writing fill-in rules to count table elements” for examples of fill-in rules that use COUNTALL.



## Writing fill-in rules to count table elements



The following sample fill-in rules count the elements in the Families table (Figure 11-5).

Figure 12-5 **The Families table**  
(same as Figure 12-4)

LastName	Children	
	Name	Age
Morris	Susan	10
	Jeff	8
	Toni	5
Owens	Larry	9
	Michael	2
Smith		
Jackson	Harvey	11

To count	Fill-in rule	Result
Families in the table	COUNT[Families]	4
Children in the table	COUNT[Families.Children]	6
Children in the Morris family	COUNT [Families[ROW CALL IT Fam WITH Fam.LastName = "Morris"].Children.Name] or COUNT [Families[ROW 1].Children]	3

To count	Fill-in rule	Result
Elements in entire table	COUNTALL[Families]	18
Elements in Children column	COUNTALL [Families.Children]	14
Elements in Morris row	COUNTALL [Families[ROW 1]]	7
Columns in the Morris row	COUNT[Families[ROW 1]]	2
Subrows in the Age subcolumn	COUNTALL [Families.Children.Age]	7
Non-empty Subrows in the Age subcolumn	COUNT [Families.Children.Age]	6

The fill-in rule that determines which family has more than two children is:

Families

[ROW CALL IT Two WITH  
COUNT[Two.Children.Name] > 2].LastName

In this example, the row criterion is "the main row that has more than two entries in the Name subcolumn of the Children column." The result of the fill-in rule is "Morris."

## Writing fill-in rules for column totals

1 2 3...

You can write fill-in rules that calculate the total starting salaries and total current salaries in the Employees table (Figure 12-6).

Figure 12-6 The Employees table

LastName	Salary	
	Starting	Current
Arndt	1900	2300
Lear	2100	2550
Sabiers	1850	2200

You can use one of two ways to create a Total row for the table:

- Add a new last row and enter the word "Total" in its first column. Write CHOOSE expressions as fill-in rules for the Starting and Current subcolumns that sum the subcolumn values and enter the totals in the last row.
- Add a one-row table beneath the main table. Write fill-in rules in the one-row table that sum the Starting and Current subcolumns.

## Adding a Total row to a table

---

Figure 12-7 shows the Employees table with a new Total row at the bottom. To fill in the totals, you can write similar CHOOSE expressions as fill-in rules for the Starting and Current subcolumns. Each expression performs the following operations:

- It looks for the word "Total" in the LastName column.
- For the row containing Total, it calculates the sum of all values in the subcolumn and subtracts any previous total. It then inserts the new total in the Total cell.
- For all other rows, it retains whatever value you enter.

Figure 12-7 **The Employees table with a Total row**

LastName	Salary	
	Starting	Current
Arndt	1900	2300
Lear	2100	2550
Sabiers	1850	2200
<b>Total</b>	<b>5850</b>	<b>7050</b>

1. For the Starting subcolumn, enter the following fill-in rule on the Table Column property sheet:

CHOOSE

Employees

[THIS ROW].LastName = "Total" ->  
SUM[Employees.Salary.Starting] -

Employees[THIS ROW].Salary.Starting;

OTHERWISE ->

Employees[THIS ROW].Salary.Starting

2. For the Current subcolumn, enter the following fill-in rule on the Table Column property sheet:

CHOOSE

Employees

[THIS ROW].LastName = "Total" ->  
SUM[Employees.Salary.Current] -

Employees[THIS ROW].Salary.Current;

OTHERWISE ->

Employees[THIS ROW].Salary.Current

3. Select [Update Fields] from the content auxiliary menu and watch the Total row values fill in.

The advantage of this method is that you create just one table, whereas the next method involves




creating an additional table. The disadvantage is slower execution, because the Document Editor must check each row to see if "Total" is the entry in its LastName column.

## Placing a one-row table below a table

---

You can use a one-row table with no caption or column headers to create a Total row (Figure 12-8) that appears unified with the main table.

Figure 12-8 A one-row table



--	--	--

### Creating a one-row table

---

1. Copy the main table.
2. Delete all the rows of the new table (a new blank row appears).
3. Set the top margin to zero.
4. "Turn off" the display of column headings by canceling the selection of [Show] in the Table Header property sheet.

### Unifying the tables

---

1. Set the bottom margin of the main table to zero. Make sure the **Caption** property is not set to [Bottom].
2. Move the one-row table so it aligns immediately beneath the main table. You now have an apparently unified table (Figure 12-9).

Figure 12-9 The Employees table with the one-row table below it

LastName	Salary	
	Starting	Current
Arndt	1900	2300
Lear	2100	2550
Sabiers	1850	2200
<b>Total</b>	<b>5850</b>	<b>7050</b>

### **Making the unified tables appear “seamless”**

To create a “seamless” joining of the tables (no space at all between the two tables), set these properties for each table:

1. Stretch the table frame border and set its border style to the blank setting.
2. Select the outer table ruling lines which are now visible and set them to the desired width and the solid-line style.
3. Display the Table Frame property sheet and, set the height to [Varying] to shrink the border around the table.

### **Entering the fill-in rules**

1. Enter the following fill-in rule for the second column of the one-row table:  
SUM[Employees.Salary.Starting]
2. Enter the following fill-in rule for the third column of the one-row table:  
SUM[Employees.Salary.Current]

3. Select [Update Fields] and watch the Total row values fill in.

---

## Writing fill-in rules that compare table values and find averages

---

1 2 3...

You can use table pathnames to compare table values and find the average.

### Using column and row-number pathnames

---

The following examples are based on the Results table test scores, shown in Figure 12-10. Each entry in the Data column represents a score for one person (the "subject"). The scores for each subject are contained in repeating rows within main rows for Test A and Test B.

Figure 12-10 The Results table

Test	Data			
	Trial1	Trial2	Trial3	Trial4
A	10	12	17	16
	12	16	22	21
	15	20	23	23
B	22	19	26	20
	26	25	24	21
	21	27	25	30

**To calculate**

**Write**

The average of all scores in the table

MEAN[Results.Data]

The difference between the largest and smallest scores

MAX[Results.Data] - MIN[Results.Data]

The average score of Test A

MEAN[Results [ROW 1].Data]

The average score of the third subject in Test A

MEAN[Results [ROW 1].Data[ROW 3]]

For the first subject, the difference between the Trial1 and Trial4 scores for Test B

Results[ROW 2].Data[ROW 1].Trial1 - Results[ROW 2].Data[ROW 1].Trial4

**Using row-criterion pathnames**

Figure 12-11 shows the Employees table used earlier to illustrate fill-in rules for column totals, with an additional row for "Washington."

Figure 12-11 **The Employees table with an additional row**

LastName	Salary	
	Starting	Current
Arndt	1900	2300
Lear	2100	2550
Sabiers	1850	2200
Washington	2150	2150

You can use a row-criterion pathname in the fill-in rule that calculates the difference between Arndt's current and starting salaries:

```
Employees[ROW CALL IT Emp WITH  
  Emp.LastName = "Arndt"].Salary.Current -  
  Employees[ROW CALL IT Emp WITH  
  Emp.LastName = "Arndt"].Salary.Starting
```

You can write a fill-in rule that yields the name of an employee whose starting and current salaries are the same. In this example, the arbitrary name in the row criterion is "Same."

The fill-in rule is:

```
Employees[ROW CALL IT Same WITH  
  Same.Salary.Current =  
  Same.Salary.Starting].LastName
```

The fill-in rule yields the last name "Washington."

---

## Creating a form letter that accesses table data

---

1 2 3...

Although the following example is practical only if there is just one order item on back-order, it is useful for its illustration of field fill-in rules that access data in tables.

You can create a form letter (Figure 12-12) that accesses a table named Order (Figure 12-13) and a table named Status (Figure 12-14).

Figure 12-12 A form letter, showing blank fields

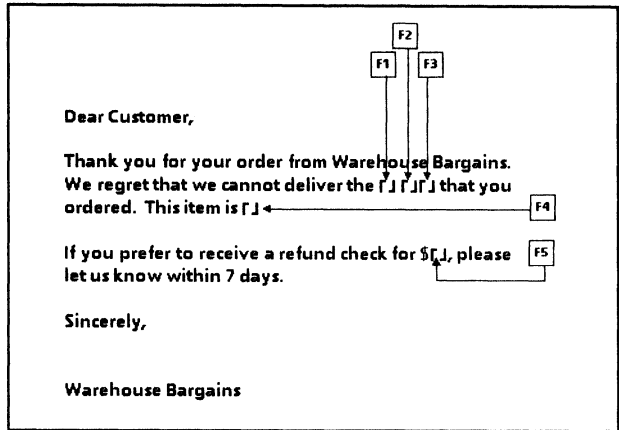


Figure 12-13 The Order table (data source for form letter)

Item		Qty	PriceEach	TotalPrice	Status
OrderNo	Description				
32-1041	Letter Holder	1	6.95	6.95	SENT
42-6004	Bird Feeder	1	22.95	22.95	SENT
65-1010	Bath Towel	3	14.95	44.85	BACK
45-6676	Ornament	5	4.95	24.75	SENT

Figure 12-14 **The Status table, for descriptions of status codes on the Order table items**

Code	Description
BACK	temporarily out of stock. We will send your order within 3 weeks.
OUT	no longer available. We will credit your account.

Here are the fill-in rules you can write for the fields in the form letter:

**Field F1**

```
Order[ROW CALL IT Back WITH  
Back.Status = "BACK"].Qty
```

This fill-in rule searches the Order table for the row with a value of "BACK" in the Status column, and specifies the entry in the Qty column for that row.

**Field F2**

```
Order[ROW CALL IT Back WITH  
Back.Status = "BACK"].Item.Description
```

This fill-in rule accesses the same row and specifies the entry in the Description subcolumn.

**Field F3**

```
CHOOSE  
F1 > 1 -> "s";  
OTHERWISE -> ""
```

This fill-in rule enters an "s" if the quantity in field F1 is greater than one, to make the item plural. Otherwise, no character is entered.

**Field F4**

Status[ROW CALL IT Back WITH  
Back.Code = "BACK"].Description

This fill-in rule searches the Status table for the row with the value of "BACK" in the Code column, and then specifies the entry in the Description column.

**Field F5**

Order[ROW CALL IT Back WITH  
Back.Status = "BACK"].TotalPrice

This fill-in rule searches the Order table for the row with "BACK" in the Status column, and specifies the value in the TotalPrice column.

The resulting filled-in form letter is shown in Figure 12-15.

Figure 12-15 **Form letter, filled in**

Dear Customer,

Thank you for your order from Warehouse Bargains. We regret that we cannot deliver the 3 Bath Towels that you ordered. This item is temporarily out of stock. We will send your order within 3 weeks.

If you prefer to receive a refund check for \$44.85, please let us know within 7 days.

Sincerely,

Warehouse Bargains



## Creating a table that accesses data from another table

1 2 3...

The previous procedure showed an Order table in which a clerk enters all the order information for each item. Instead, you can base some columns of that table on the contents of the Inventory table shown in Figure 12-16.

Figure 12-16 The Inventory table

StockNo	Description	Price	OnHand
32-1041	Letter Holder	6.95	25
42-6004	Bird Feeder	22.95	49
65-1010	Bath Towel	14.95	211
45-6676	Ornament	4.95	1543

You can write fill-in rules for the Order table Description and PriceEach columns that access the Description and Price columns of the Inventory table. The following fill-in rules require the following **Type** property settings for columns in the Order and Inventory tables:

Order table column	Inventory table column	Type
OrderNo	StockNo	[Text]
PriceEach	Price	[Amount]
Qty	OnHand	[Amount]

The fill-in rules are:

### Description subcolumn of the Order table

Inventory

```
[ROW CALL IT Item WITH
Item.StockNo = Order
[THIS ROW].Item.OrderNo].Description
```

This fill-in rule looks in the Inventory table for the order number entered in the Order table, row by row. It then inserts the corresponding Description entry into the Description column of the Order table.

**PriceEach column of the Order table**

```
Inventory[ROW CALL IT Item  
WITH Item.StockNo =  
Order[THIS ROW].Item.OrderNo].Price
```

This fill-in rule performs the same order number look-up as the fill-in rule for the Description subcolumn. Then it inserts the corresponding Price entry into the PriceEach column of the Order table.

Fill-in rules enable you to construct tables so that only unique, identifying information needs to be entered by you or others; the Document Editor fills in the rest.



---

## 13. Fill-in rule access to other documents

You can write a fill-in rule that refers to a field or table in another document on the desktop. When you write a fill-in rule that accesses another document, you can use all the fill-in capabilities described in the “Fill-in rules for fields” and “Fill-in rules and pathnames for tables” chapters earlier in this volume.

The document you refer to in your rule must be directly on the desktop or in a container (such as a folder or book) on the desktop. It cannot be in a file drawer.

A fill-in rule can access an open document more quickly than a closed document.

---

### Key concepts of fill-in rule access to other documents

---



Within a fill-in rule that accesses another document, you create an object reference that includes the object name and an icon reference.

The object name is the name of the field, table, or table element that contains the data. These names follow the guidelines stated in the “Fill-in rules for fields” and “Fill-in rules and pathnames for tables” chapters earlier in this volume.

The *icon reference* is a reference to the icon or icons that contain the object. All icons referred to must be on the desktop, either directly on the desktop or in a container on the desktop. They cannot be in a file drawer.

When you construct an object reference you can use one of two syntaxes: expanded or terse.

## Expanded syntax for object references

---

The expanded syntax you can use for object references uses English phrases that are easy to remember. This syntax identifies the name, type, and location of each icon containing the object.

Syntax 1: **object** IN THE **icontype** WHOSE NAME IS **iconname**

In this syntax, the icon containing the object is directly on the desktop.

For **icontype**, you can specify Document, Folder, Book, MailFolder, FormsFolder, or RecordFile.

For **iconname**, you can supply a text value, such as text enclosed in quotation marks (" "), or the name of a field of type [Text]. The text value or field contents must be the complete, exact name shown on the icon property sheet.

The complete icon name might not appear in full on the icon on the desktop. To make sure you specify the complete name without errors, copy the name from the icon property sheet to your fill-in rule.

**Note:** You can use any combination of uppercase and lowercase letters in object references.

Syntax 2: **object** IN THE **icontype** WHOSE NAME IS **iconname1** IN THE **icontype** WHOSE NAME IS **iconname2**

In this syntax, the icon that contains the object (**iconname1**) is within a container that is directly on the desktop (**iconname2**).

You continue appending **IN THE icontype WHOSE NAME IS iconname** phrases for each higher-level container in which the object is located.

**Example:** Total **IN THE** Document **WHOSE NAME IS** "Expenses" **IN THE** Folder **WHOSE NAME IS** "Reports"

This object reference is to the field named Total in the document named Expenses in the folder named Reports.

## **Terse syntax for object references**

---

The terse syntax for object references is an abbreviated form of the expanded syntax. Whereas the expanded syntax names the icons from the innermost icon first to the outermost icon last, the terse syntax names the outermost icon first and the innermost icon last, followed by the object name. In terse syntax, you do not specify the icon type.

**Syntax 1:** **iconname:object**

In this syntax, the object is contained in an icon directly on the desktop.

**Note:** Do not include spaces in terse syntax. If a name contains spaces or other non-alphanumeric characters, enter an apostrophe (') before each such character. You can use any combination of uppercase and lowercase letters in these references.

**Syntax 2:    iconname1:iconname2:object**

In this syntax, the icon that contains the object (iconname2) is within a container that is directly on the desktop (iconname1).

The reference begins with the highest-level container in which the object is located, and lists each successive lower-level container that contains the object.

**Example 1: Reports:Expenses:Total**

This object reference is to the field named Total in the document named Expenses in the folder named Reports.

**Example 2: August' Reports:Gross' Income:Total**

This object reference is to the field named Total in the document named Gross Income in the folder named August Reports.

## Clarifying object references within fill-in rules

1 2 3...

When you are using expanded syntax, the Document Editor evaluates the entire phrase following the final WHOSE NAME IS to determine the name of the final container. You may need to use parentheses to clarify the container name.

For example, the following expression requires parentheses for proper evaluation:

```
Field1 IN THE Document WHOSE NAME IS "X"
      IN THE Folder WHOSE NAME IS "Y"
      IN THE Folder WHOSE NAME IS "Z" + 22
```

Without parentheses, the Document Editor attempts to evaluate the expression as if you had written:

```
Field1 IN THE Document WHOSE NAME IS "X"
      IN THE Folder WHOSE NAME IS "Y"
      IN THE Folder WHOSE NAME IS ("Z" + 22)
```

This order of evaluation produces an execution error and a message that an operation was attempted on an object of incorrect type. (Addition cannot be performed on text.)

If your purpose is to add 22 to Field1 in the document X, which is in the folder Y within the folder Z, you must enclose the entire reference for Field1 in parentheses, as follows:

```
(Field1 IN THE Document WHOSE NAME IS "X"
  IN THE Folder WHOSE NAME IS "Y"
  IN THE Folder WHOSE NAME IS "Z") + 22
```

**Note:** Terse syntax requires no parentheses within fill-in rules. The previous expression can be simply stated in terse syntax as follows:

```
Z:Y:X:Field1 + 22
```



---

## Referring to multiple objects

---

**1 2 3...**

If a fill-in rule refers to two or more objects within the same document, it must include a complete reference to each of them.

In addition, you may need to use parentheses to specify the desired order of operation in the fill-in rule (refer to the example in “Combining operations in fill-in rules” in the “Fill-in rules for fields” chapter in this volume).

The following rule tells the Document Editor to multiply by 2 the average of the values in the Expense fields in three documents named Y86expenses, Y87expenses, and Y88expenses. All three documents are in the Reports folder.

Expanded syntax example:

```
2 * MEAN
  [Expense IN THE Document WHOSE
   NAME IS "Y86expenses" IN THE Folder
   WHOSE NAME IS "Reports",

   Expense IN THE Document WHOSE
   NAME IS "Y87expenses" IN THE Folder
   WHOSE NAME IS "Reports",

   Expense IN THE Document WHOSE NAME IS
   "Y88expenses" IN THE Folder WHOSE NAME
   IS "Reports"]
```

Terse syntax example:

```
2 * MEAN
  [Reports:Y86expenses:Expense,
   Reports:Y87expenses:Expense,
   Reports: Y88expenses:Expense]
```

## Using icon references in CHOOSE expressions

1 2 3...

You can use icon references in CHOOSE operations.

For example, you can use icon references in a fill-in rule for a field named Total that calculates the sales tax on an order form. In this case, a field named State contains the name of the state in which the customer lives. This field is contained in a document named Residence, which is on the desktop.

The rule you write calculates the sales tax according to these conditions:

<b>If the customer resides in:</b>	<b>The sales tax is:</b>
California	6%
Nebraska	4%
Any other state	7%

The following CHOOSE expressions provide the correct sales tax calculation.

Expanded syntax example:

```

CHOOSE
  (State IN THE Document WHOSE NAME
   IS "Residence") = "California" ->
    Total * .06;
  (State IN THE Document WHOSE NAME
   IS "Residence") = "Nebraska" ->
    Total * .04;
  OTHERWISE -> Total * .07

```

Terse syntax example:

```

CHOOSE
  (Residence:State) = "California" -> Total * .06;
  (Residence:State) = "Nebraska" -> Total * .04;
  OTHERWISE -> Total * .07

```

---

## Using icon references with table pathnames

---

**1 2 3...**

You can access information in a table in another document by using a table pathname as the object name.

Refer to the status table in Figure 13-1 as you study the following example. The example uses row-criterion syntax to refer to a table cell in another document.

Figure 13-1 **Status table, contained in the Shipment document**

Code	Description
BACK	temporarily out of stock. We will send your order within 3 weeks.
OUT	no longer available. We will credit your account.

Example: A field in a document containing a form letter can use either of the following fill-in rules to access the Status table in the Shipment document. The data needed is in the Description column in the same row as the value "BACK" in the Code column.

Expanded syntax:

Status

```
[ROW CALL IT Back WITH Back.Code =  
"BACK"].Description IN THE Document  
WHOSE NAME IS "Shipment"
```

Terse syntax:

```
Shipment:Status[ROW CALL IT Back WITH  
Back.Code = "BACK"].Description
```

The result of the fill-in rule is: "temporarily out of stock. We will send your order within 3 weeks."

**Part 4**

**Mail Merge**





Mail Merge enables you to merge text from a source table into one of three kinds of template documents: forms, labels, and lists.

To use Mail Merge, you should be familiar with tables and fields, described in the "Tables" and "Fields" chapters of this volume.

**Note:** Mail Merge generates Interpress masters for forms and labels, which print only on laser printers such as the networked NS8000 printer or the Xerox Documenter 4045 local laser printer. You cannot print the merged documents on a character printer. (For list document output, you can choose either a ViewPoint document or a printout at an Interpress printer.)

## Key concepts of Mail Merge



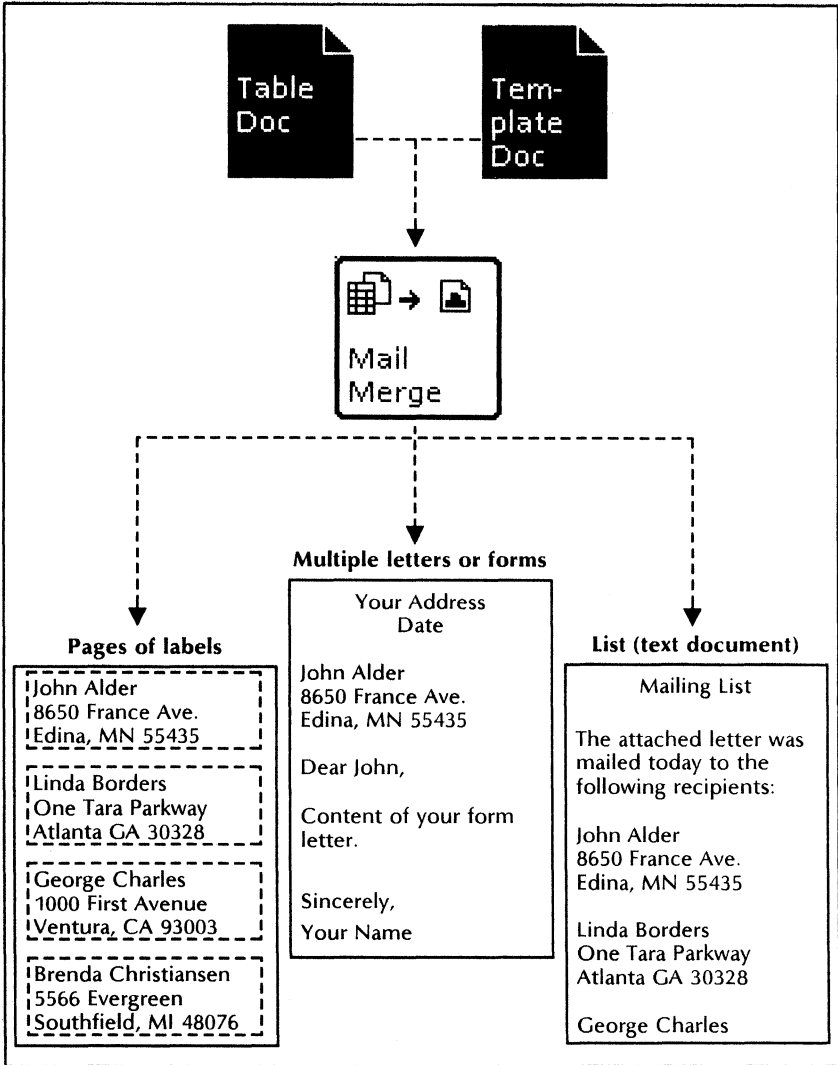
Using Mail Merge, you merge a table, such as the table shown in Figure 14-1, with a template document.

Figure 14-1 A table in the Table Doc document

LastName	FirstName	Address	Telephone	Position
Alder	John	8650 France Ave. Edina, MN 55435	(519) 433-6732	Sales Rep
Borders	Linda	One Tara Parkway Atlanta, GA 30328	(468) 323-7714	Manager
Charles	George	1000 First Avenue Ventura, CA 93003	(818) 525-9030	Analyst
Christiansen	Brenda	5566 Evergreen Southfield, MI 48076	(519) 873-4955	Editor
Daniels	Ruth	7800 Park Blvd. Dallas, TX 78213	(214) 592-4489	Physician

The result of the merge is a form, label, or list document, examples of which are shown in Figure 14-2. Your result depends on the template document you use.

Figure 14-2 The Mail Merge process



## The Mail Merge icon

---

You merge your table and template documents by copying them to the Mail Merge icon (Figure 14-3). This icon is located in the Basic Icons divider, in the Workstation divider of the directory.

Figure 14-3 The Mail Merge icon



You cannot open or display properties for the Mail Merge icon. When you copy a table and a template document to the Mail Merge icon, the Mail Merge option sheet appears.

## Mail Merge results

---

You can choose one of the following options for the output of a Mail Merge operation:

- The Form Letters option, which generates multiple printed documents, one document for each table row. Although typically used for letters, this option can be used for many kinds of forms, including graphic forms, and for Documenter envelopes.
- The Address Labels option, which generates printed label pages, with one label for each table row and multiple labels on a page. (Each label is a graphics field.) This option can be used for any kind of labels, including address labels, equipment labels, and parts labels. The labels can include graphics.
- The Address List option, which generates a document you can save or print, with one



text section for each table row. The action performed by this option is the reverse of the *VP Data Capture* action, which copies text to a table.

You can specify a "filter" to restrict a merge operation to certain rows of your table. For example, you can specify that Mail Merge use only rows with "Chicago" in an address column.

## Your source table

---

You can use any table, with any number of columns, as the source table for a merge operation.

You specify which columns to use in the merge operation. Although your table can have divided columns, any columns used in the merge operation must be undivided.

When you use Mail Merge, you need to know the table name, as shown on the Table property sheet, and the column names as shown on the Table Column property sheets (not the names in captions or column headings).

The column name must have no leading or trailing spaces. In addition, if you use a fill-in rule to produce form letters, the column name must have no spaces within it.

You can have more than one table in a source document, but you can specify only one table at a time for the merge operation.

## Your template document

---

Your template document determines how the results of a Mail Merge operation appear. You can create three different types of template documents: a Form Letter template, an Address Label template, and an Address List template.

---

## Form Letter template

---

For a Form Letter template, you can use any document that has one or more fields to be filled in from the columns of one table row. For example, Figure 14-4 shows a document with fields for the first name, last name, and address. It has another field for the first name in the salutation.

Figure 14-4 A Form Letter template

The diagram shows a rectangular box representing a form letter template. Inside the box, the text is as follows:

- At the top, the text "Your Address" is followed by "Date" on the next line.
- Below that, there are three field markers: two pairs of square brackets with a vertical line through them, and one pair below them.
- Then, the text "Dear" is followed by a field marker.
- Next, the text "Content of your form letter or other form." is centered.
- Finally, the text "Sincerely," is followed by "Your Name" on the next line.

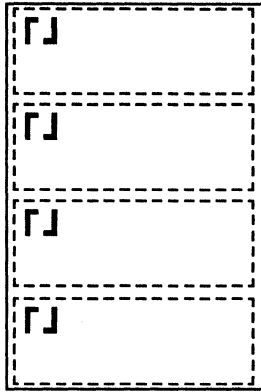
---

## Address Label template

---

For an Address Label template, you can use any document that has a field at each label position. The template illustrated in Figure 14-5 has four graphics fields and will generate four labels to a page.

Figure 14-5 An Address Label template

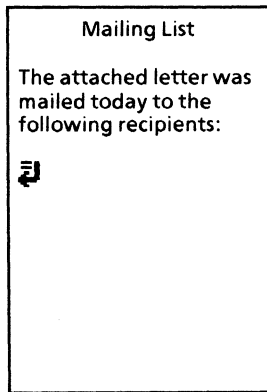


### Address List template

---

For an Address List template, you can use a document with any combination of text and graphics. The last character of the document must be a new-paragraph character in text, as illustrated in Figure 14-6, which indicates where the list is to be merged into the document.

Figure 14-6 An Address List template



## Filter specifications

---

In Mail Merge, a *filter* is a combination of text and certain symbols that specify what a column must contain for a row to be used in the merge operation. Filters enable you to merge only certain rows of a table into your template document. You can think of a filter as the electronic equivalent of a sieve or sifter.


For the filter, you can use the contents of any column as the criterion for the merge, whether or not that column is to be merged. For example, you can specify in the filter that a row should contain the text string "yes" in a column, even though that column will not be merged (because you want to generate documents only for rows with "yes" in the column, but do not want "yes" in your output documents).

## Printing options

---

You can print documents created by Mail Merge only on Interpress printers. These printers include the networked NS8000 laser printer and the Xerox Documenter 4045 local laser printer, but not a character printer.

You can use the standard printing options when printing merged documents. The results are the same as for any other icon, except that the merged documents are always printed in one batch (collated). The entire batch is printed after you select [Start] on the Printing option sheet.



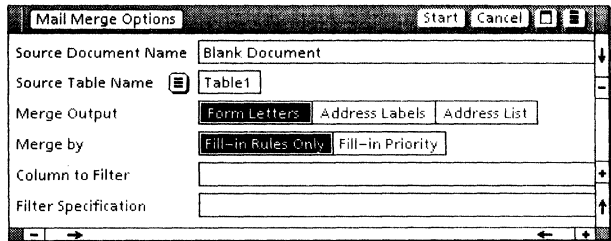
---

## The Mail Merge options sheet

---

When you copy your table document and template document to the Mail Merge icon, the Mail Merge options sheet appears (Figure 14-7).

Figure 14-7 **The Mail Merge options sheet for Form Letters**



**Note:** One of the documents you copy to the Mail Merge icon must contain a table. If neither document contains a table, or if you copy only one document to the Mail Merge icon, the option sheet does not appear, and the operation is canceled.

---

## Mail Merge options sheet commands

---

[Start]

Copies data from the source table to a copy of the template document. The pointer changes to a graphic representation of merged data.

When using the [Form Letters] and [Address Labels] options, you must select an Interpress printer icon to print the merged documents. Any other selection cancels the merge action.

When using the [Address List] option, you can select an Interpress printer icon, a blank area of the desktop, or an appropriate document container (such as a folder), to print or save the merged document.

[Cancel]

Cancels the merge operation.

## Mail Merge options

---

### Source Document Name

If only one of your documents contains a table, the name of that document automatically appears in read-only text. Otherwise, select the name of the document that contains the source table from the auxiliary menu that appears.

### Source Table Name

If your source document contains only one table, the table name appears in this field. If the source document contains multiple tables, select the appropriate table name from the auxiliary menu.

Only one table can be the source table for a merge operation. (If you want to merge multiple tables either combine them into one table or perform multiple merge operations.)

### Merge Output

Select one of three options for the merge output:

[Form Letters]

Merges table row data into the template document, matching fields to table columns, and generating one document for each table row.

[Address Labels]

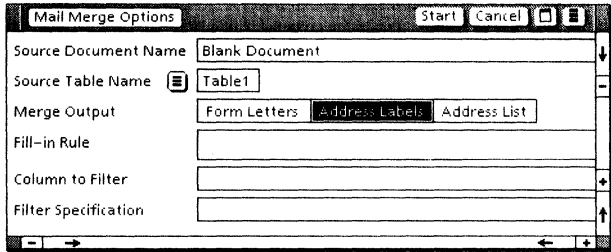
Merges table row data into each field of a label template, generating one label for each table row.

[Address List]

Merges table row data into paragraphs of a text document.

If you select either [Address Labels] or [Address List] for the **Merge Output** option, a **Fill-in Rule** option replaces the **Merge by** option on the option sheet (Figure 14-8).

Figure 14-8 **The Mail Merge options sheet for Address List and Address Labels**



**Merge By**

If you choose [Form Letters] for **Merge Output**, you have the following options for determining which columns to use in the merge operation:

[Fill-in Rules Only]

Merges data into a field only if the field has a fill-in rule that names a table column. Otherwise, the field is ignored by Mail Merge. The default is [Fill-in Rules Only].

[Fill-in Priority]

Causes Mail Merge to attempt to merge data into all fields. For this option, Mail Merge uses three priorities to determine which column, if any, can be used to fill a template field (or replace its contents).

- **Priority 1:** If the field has a fill-in rule that names a column, Mail Merge uses the data from that column. (If

the field has a fill-in rule that does not match a column name, Mail Merge does nothing with the field. The existing contents of the field remain.)

- **Priority 2:** If the field does not have a fill-in rule that names a column, Mail Merge checks the position of the field in the fill-in order and uses the column that corresponds to that position. For example, if the field is in third position in the fill-in order, Mail Merge uses the third column.
- **Priority 3:** If the field does not have a fill-in rule that names a column and the field is not in the fill-in order, Mail Merge checks the physical position of the field in the paginated template document and uses the column that corresponds to that position.

For example, if the field is the third field in the document, Mail Merge uses the third column. Mail Merge counts fields from the top left corner of the document, left to right and top to bottom.

If there is no column that corresponds to the physical position of the field, Mail Merge does not fill the field or replace its contents. For example, if the field is the sixth field in the document and the source table contains only five columns, Mail Merge ignores that field.

If you select [Fill-in Priority], you should first paginate your template document using the [Paginate] command. Any other paginate command could produce unexpected results.



### Fill-in Rule

If you choose [Address Labels] or [Address List] for **Merge Output**, use the Fill-in Rule option to name the table columns to use in the merge operation, in the order their data is to appear. Also specify any text or punctuation characters you want to separate the merged data. As with any text string in a fill-in rule, enclose the characters in quotation marks.

Connect the column names and characters with ampersands (&). Spaces before or after the ampersands are optional and are ignored by Mail Merge.

### Column to Filter

If you want Mail Merge to use all rows of the table, enter nothing in the **Column to Filter** box and nothing in the **Filter Specification** box.

If you want only certain table rows to be used in the merge operation, enter a column name in the **Column to Filter** box and a filter in the **Filter Specification** box.

### Filter Specification

Enter your requirement for the contents of the column named in **Column to Filter**. You can use four symbols in a filter specification, available from the Field Special keyboard (Figure 14-9) when the caret is in the **Filter Specification** box.

The symbols are:





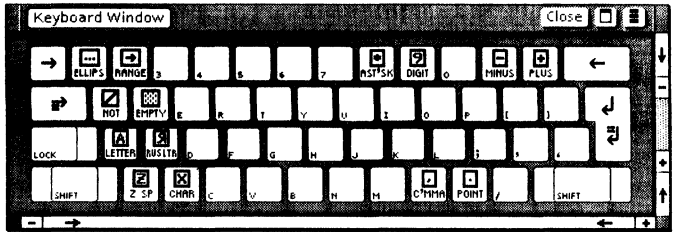
Symbol	Name
	Ellipse
	Range arrow
	Not symbol
	Empty symbol

Figure 14-9 The Field Special keyboard



You can specify that the column named in the **Column to Filter** option must:

- **Contain an exact value**—To specify that a column must contain a certain value, enter that exact value. Examples of exact values are:

John J. Jones  
 January 10, 1989  
 500  
 yes

- **Contain a range of data**—For a description of how to specify a range using the range arrow and the ellipsis, refer to the **Range** property description in “The Field properties sheet” section of the “Fields” chapter in this volume.

Examples of ranges are:


January 1, 1988  January 31, 1988



Aa  Gg

100 

- **Be empty**—To specify that the column must be empty, enter the empty symbol.

- **Not contain a specific value or not be empty**—To specify that the column must not contain a certain value or range or that it must not be empty, simply enter the not symbol before the value, range, or empty symbol. Examples are:

 January 10, 1989

 50  100

The only rows that are merged are those that meet your specification.

---

## Generating form letters

---

1 2 3...

In Mail Merge, a “form letter” is any document with fields to be filled in from a table row. Each table row generates a unique printed version of the document.

When creating a form letter template, keep in mind the method you need to use for merging data into its fields. Although the initial steps for creating the template are the same, the final steps depend on which of the following two methods you use to merge the template with a source table:

- **Fill-in Rules Only method**—This method enables you to merge data into only those fields containing fill-in rules that name the source column for their data. In most cases, you will find this method easiest for achieving the results you want.

You must use the [Fill-in Rules Only] method if you want to merge the same column data into more than one field (such as first name data in the inside address and in the salutation of a letter). You should also use this method if your template has some fields you do not want filled from your source table.

- **Fill-in Priority method**—This method enables you to fill every field in the document without having to insert fill-in rules into the fields. With this method, you can set up a template so the fields are filled either by their position in the fill-in order or by their physical position in the document.

The Fill-in Priority method is fast and easy for a situation such as this: Your template has only three fields, to be filled from the first, second, and third columns of a table. You can simply set

the fill-in order of the fields to match the positions of the columns that are to fill the fields.

## Creating the form letter template

---

1. Rename a copy of the Blank Document icon, open it, and place it in edit mode.
2. Type the template in the desired format, using the page layout and text properties you want.
3. Insert document fields (or graphics fields, if appropriate) where you want data to be merged from the source table.

You also can insert fields with arbitrary fill-in rules (such as CurrentDate) into the form.

4. If you want the appearance of the field contents to be different from the text that precedes the field, edit the text properties of the left bounding character of the field. The merged data assumes the properties of the left bounding character (not the properties of the text in your source table).
5. Complete the procedure below that corresponds to the method you want Mail Merge to use when it combines data from your source table.

### Fill-in Rules Only method

---

1. Display the Field property sheet for a field that should be filled in from a column.
2. In the **Fill-in Rule** property, type the name of the column that contains the data to be merged.

The name must be one word and it must be entered exactly as shown on the Table Column property sheet (not the text in the column heading). However, you can use any combination of uppercase and lowercase

letters. You can use the same column name as the fill-in rule for more than one field.

3. Repeat steps 1 and 2 for each field that should be filled in from a column.
4. Select [Close] from the document header.

Figure 14-10 shows a table, a form letter template, and the respective field fill-in rules you can use to merge data from the table into the template. It also shows the first result of the Mail Merge operation. In this example, the column names on the Table Column property sheets are the same as the column headings.

Figure 14-10 Example of the Fill-in Rules Only method

<b>Source table:</b>				
LastName	FirstName	Address	Telephone	Position
Alder	John	8650 France Ave. Edina, MN 55435	(519) 433-6732	Sales Rep
Borders	Linda	One Tara Parkway Atlanta, GA 30328	(468) 323-7714	Manager

<p><b>Form letter template:</b></p> <p>[ ] [ ] [ ] [ ]</p> <p>Dear [ ],</p> <p>Body of letter . . .</p>	<p><b>Field fill-in rules:</b></p> <p>FirstName LastName Address</p> <p>FirstName</p>
-------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------

**Merge result:**

John Alder  
8650 France Ave.  
Edina, MN 55435

Dear John,

Body of letter . . .

## Fill-in Priority, fill-in order method

---

1. In your template document, select [Edit Field/Table Fill-in Order] in the content auxiliary menu.
2. Arrange the field names under **Fields and tables in fill-in order** in the sequence you want them filled from source table columns. For example, if you want a field named LastName to be filled from the second column in your table, make LastName the second name in the fill-in order.

**Note:** Because you can list each field only once in the fill-in order, you can use each column in your source table only once.

3. Select [Done].
4. Select [Close] from the document header.

**CAUTION:** When you use the [Fill-in Priority] method, Mail Merge attempts to fill all fields in your template. If your template has fields that Mail Merge should not fill, use the [Fill-in Rules Only] method.

Figure 14-11 shows an example of using the fill-in order method for filling in data from the source table. None of the fields in Figure 14-11 has a fill-in rule; they are filled from source table columns according to their positions in the fill-in order. Figure 14-11 also shows the first result of the Mail Merge operation.

Figure 14-11 Example of the Fill-in Priority, fill-in order method

Source table:				
LastName	FirstName	Address	Telephone	Position
Alder	John	8650 France Ave. Edina, MN 55435	(519) 433-6732	Sales Rep
Borders	Linda	One Tara Parkway Atlanta, GA 30328	(468) 323-7714	Manager

<b>Form letter template:</b>	<b>Fill-in order:</b>
<pre> [ ] [ ] [ ] [ ] </pre>	FirstName LastName Address
Dear Member,	
Body of letter . . .	
	<b>Merge result:</b>
	John Alder 8650 France Ave. Edina, MN 55435  Dear Member,  Body of letter . . .

### Fill-in Priority, field position method

1. Arrange each field in the template document in the physical position that corresponds to the position of the column with the data to be merged. For example, if you want a field filled from the third column of your source table, make the field the third field in the document.



Determine the field position by starting in the top left corner of the document and counting fields from left to right, top to bottom.

**Note:** Because each field has a unique position in the document, you can use each column in the source table only once.

2. Check the fill-in order by selecting [Edit Field/Table Fill-in Order] in the content auxiliary menu. If any field names are listed under **Fields and tables in fill-in order**, move them under **Fields and tables not in fill-in order**.
3. Select [Paginate] in the document auxiliary menu.
4. Select [Close] from the document header.

**CAUTION:** When you use the [Fill-in Priority] method, Mail Merge attempts to fill all fields in your template. If you have fields in your template that should not be filled by Mail Merge, use the [Fill-in Rules Only] method.

Figure 14-12 shows an example of using the field position method for filling in data from the source table. The fields have no fill-in rules and are not in the fill-in order. (This table has a different column arrangement from that in the previous examples.) Figure 14-12 also shows the first result of the Mail Merge operation.

Figure 14-12 Example of the Fill-in Priority, field position method

Source table:				
FirstName	LastName	Address	Telephone	Position
John	Alder	8650 France Ave. Edina, MN 55435	(519) 433-6732	Sales Rep
Linda	Borders	One Tara Parkway Atlanta, GA 30328	(468) 323-7714	Manager

<p><b>Form letter template:</b></p> <p>[ ] [ ] [ ] [ ]</p> <p>Dear Member,</p> <p>Body of letter . . .</p>	<p><b>Merge result:</b></p> <p>John Alder 8650 France Ave. Edina, MN 55435</p> <p>Dear Member,</p> <p>Body of letter . . .</p>
----------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------

## Merging and printing form letters

1. Update any fields in the template that have a fill-in rule other than a column name (such as a fill-in rule of CurrentDate).

Updating is done most easily by selecting inside the field and pressing <NEXT>. (Selecting [Update Fields] will cause errors if you have fields with the Mail Merge abbreviated fill-in rules for column names.)

Update such fields before merging data because Mail Merge acts on fill-in rules only if they name columns in your source table.

2. Use the select-adjust method to copy both the template and the source table document to the Mail Merge icon. The Mail Merge options sheet appears.

3. Complete the Mail Merge options sheet as follows:
  - Select [Form Letters] for **Merge Output**.
  - If necessary, select the name of the table document in the auxiliary menu for **Source Document Name**.
  - If necessary, select a table name from the auxiliary menu for **Source Table Name**.
  - For the **Merge by** option, select [Fill-in Rules Only] or [Fill-in Priority], depending on how you want the fields in your template to be filled.
  - If desired, fill in the boxes for **Column to Filter** and **Filter Specification**. You may need to filter to reduce the number of form letters to the maximum that can be printed at a local laser printer.

**Note:** You can filter for a unique entry to test the results of the merge operation, before you merge the entire set of rows. For example, you can filter for a unique last name so you can check the printout of one letter before you print a large batch of letters.

4. Select [Start].

The table data merges with the template, the option sheet closes, and the pointer shape changes to a small graphic of merged data.

5. Select a printer icon and complete the Printing option sheet as desired. If your template is more than one page long, select [Repaginate] for the **Before Printing** option.

**Note:** If you select anything except an icon for an Interpress printer, the merge operation is canceled. You can generate only printed documents with the [Form Letters] option, not electronic documents.

6. Select [Start] in the Printing option sheet header.

One document is printed for each row of the table. The cover sheet for the printout has the same name as your template document.

---

## Generating address labels

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A black square icon containing the white text "1 2 3...".

In Mail Merge, the [Address Labels] option merges one row of table data into each field of a template, until all specified data has been placed into fields. The resulting output consists of one or more pages of printed labels.

---

## Creating the label template

---

1. Rename a copy of the Blank Document icon, open it, and place it in edit mode.
2. Insert an anchored graphics frame and stretch it to full-page size.
3. Insert a graphics field at the position that matches the first label position on your label stock.
4. Size the text frame of the graphics field to match the size of the labels in your label stock.
5. Select the left field bounding character and set the text properties you want for the merged data.
6. Copy the graphics field to each remaining position on the page, to match the number and positions of labels on your label stock.

7. Select [Paginate] from the document auxiliary menu.
8. Set the fill-in order of the fields according to the sequence in which data is to merge from source table rows into label fields.
9. Select [Close] in the document header.

The fields need no fill-in rules. If there are any fill-in rules, they are ignored by the [Address Labels] option.

Alternatively, you can use an existing label template, such as the "33 Labels" template in the Office Accessories Templates, Tools, and Transfers folder, included in the *VP Office Accessories* software package. Used with Mail Merge, it produces pages of labels, 33 labels to a page (3 across and 11 down), as illustrated in Figure 14-13.

## Merging and printing address labels

---

If you have not set a fill-in order in your label template, you may want to do so now. Otherwise, the source data will merge into your label fields in random order.

1. Use the select-adjust method to copy your source table document and label template document to the Mail Merge icon.

The Mail Merge options sheet appears.

Figure 14-13 33 Labels template

⌈J	⌈J	⌈J
⌈J	⌈J	⌈J
⌈J	⌈J	⌈J
⌈J	⌈J	⌈J
⌈J	⌈J	⌈J
⌈J	⌈J	⌈J
⌈J	⌈J	⌈J
⌈J	⌈J	⌈J
⌈J	⌈J	⌈J
⌈J	⌈J	⌈J
⌈J	⌈J	⌈J
⌈J	⌈J	⌈J



2. Complete the Mail Merge options sheet as follows:

- Select [Address Labels] for **Merge Output**.
- If necessary, select the name of the table document from the auxiliary menu for **Source Document Name**.
- If necessary, select a table name from the auxiliary menu for **Source Table Name**.
- If desired, fill in the boxes for **Column to Filter** and **Filter Specification**.

**Note:** You can filter for a unique entry to test the results of the merge operation, before you merge the entire set of rows. For example, you can filter for a unique last name and check the printout of one label before you merge batches of labels.

- Enter a fill-in rule to define the structure of the label data. Use an ampersand (&) to connect the column names and other characters that are to appear in the label.

The ampersand can be preceded and followed by one or more spaces, tabs, new-line characters, or new-paragraph characters.

The column names must match exactly the names on the Table Column property sheets, although you can use any combination of uppercase and lowercase characters. Any other characters you want in the labels must be contained in quotation marks (" ").

Figure 14-14 shows an example of using Mail Merge to generate address labels. In this example, the table column names on the Table Column property sheets are the same as the column headings.

**Figure 14-14 Example of the Address Labels method**

<b>Source table:</b>				
<b>LastName</b>	<b>FirstName</b>	<b>Address</b>	<b>Telephone</b>	<b>Position</b>
Alder	John	8650 France Ave. Edina, MN 55435	(519) 433-6732	Sales Rep
Borders	Linda	One Tara Parkway Atlanta, GA 30328	(468) 323-7714	Manager

<b>Label layout desired:</b>	<b>Option sheet fill-in rule:</b>
FirstName LastName Address	FirstName & " " & LastName & " " & Address

**Merge result:**

John Alder  
 8650 France Ave.  
 Edina, MN 55435

**Note:** In the fill-in rule, the space that will separate the first and last names is enclosed in quotation marks, as is the new-line character that starts the second line. Spaces before or after the ampersand (&) are ignored.

If you want to use the same fill-in rule often, either type it in a document and copy it to the option sheet when needed, or make it an entry in your Define/Expand dictionary.



3. Select [Start].

The table data merges with the template, the option sheet closes, and the pointer shape changes to a small graphic of merged data.

If an error exists in your fill-in rule, the option sheet does not close and an error message appears in the message area.

Look for errors such as extra spaces in a column name, omission of a pair of quotation marks, or omission of a left or right quotation mark.

Correct any errors and select [Start] again.

**Note:** If you misspell a column name, no error message is posted. The data from that column does not appear in your printout.

4. Select an Interpress printer icon and complete the Printing option sheet as desired, selecting [Repaginate] for the **Before Printing** option.

**Note:** If you select anything other than an icon for an Interpress printer, the merge operation is canceled. You can generate only printed documents with the [Address Label] option, not electronic documents.

5. Select [Start] in the Printing option sheet header.

Pages of labels are printed, with data from one table row in each label field. The cover sheet for the printout has the same name as your template document.

6. Copy the label printouts to label stock. Use a copier rather than a printer for the label stock, because printers may melt the label glue and become damaged (an operation not covered by printer maintenance agreements).

---

## Generating an address list

---

**1 2 3...**

You can use the [Address List] option to generate an electronic or printed text document from a table.

The properties of the last new-paragraph character in your template determine the text properties of the data that is merged from the table, except as noted in the following procedures.

---

### Creating the list template

---

1. Rename a Blank Document icon, open it, place it in edit mode, and set the page layout properties.
2. Enter any text or graphics you want at the beginning of the document. End with a new-paragraph character in document text (not in text contained in a frame).
3. Set the text properties of the last new-paragraph character to the settings you want for the table data to be merged.

**Note:** The character and paragraph properties of the merged text will be the same as those for the last new-paragraph character in your template. If your table data has only one line of text in each column, the properties will be the same for the entire merged document. They also will be entirely the same if your table data has multiple lines of text in columns, but the lines are separated by new-line characters.

However, if the merge operation encounters a new-paragraph character on the second line of a column, the paragraph properties of that new-paragraph character are applied to all text entered from that point onward in the merged document. If the merge operation

encounters a different new-paragraph on another (second or later) line, its paragraph properties are applied from that point onward (and so forth).

To produce the results you want, you may find it better to use two new-paragraph characters to end each text section (in your fill-in rule) than to set the After Paragraph spacing in your template.

4. Select [Paginate] from the document auxiliary menu.
5. Select [Close] from the document header.

## Merging and saving a list

---

1. Use the select-adjust method to copy the source table document and the list template document to the Mail Merge icon. The Mail Merge option sheet appears.
2. Complete the Mail Merge options as follows:
  - Select [Address List] for **Merge Output**.
  - If necessary, select the name of the table document from the auxiliary menu for **Source Document Name**.
  - If necessary, select a table name from the auxiliary menu for **Source Table Name**.
  - If desired, fill in the boxes for **Column to Filter** and **Filter Specification**.

**Note:** You can filter for a unique entry to test the results of the merge operation, before you merge the entire set of rows.

- Enter a fill-in rule to define the structure of the merged data. Use an ampersand (&) to connect the column names and other characters that are to appear in each section of merged data.

The ampersand can be preceded and followed by one or more spaces, tabs, new-line characters, or new-paragraph characters.

The column names must match exactly the names on the Table Column property sheets, although you can use any combination of uppercase and lowercase characters. Any other characters you want in the labels must be contained in quotation marks (" ").

Figure 14-15 shows an example of using Mail Merge to generate an address list.

Figure 14-15 **Example of the Address List method**

<b>Source table:</b>				
LastName	FirstName	Address	Telephone	Position
Alder	John	8650 France Ave. Edina, MN 55435	(519) 433-6732	Sales Rep
Borders	Linda	One Tara Parkway Atlanta, GA 30328	(468) 323-7714	Manager

<b>Layout desired:</b>	<b>Option sheet fill-in rule:</b>
LastName, First Name Address	LastName & " " & FirstName & " " & Address

**Merge result:**

Alder, John  
                   8650 France Ave.  
                   Edina, MN 55435

Borders, Linda  
                   One Tara Parkway  
                   Atlanta, GA 30328

**Note:** In the fill-in rule in Figure 14-15, the comma and space that will separate the last and first names are enclosed in quotation marks, as are the new-line character and tab that start the second line.

3. Select [Start].

The table data merges with the template, the option sheet closes, and the pointer shape changes to a small graphic of merged data.

**Note:** If an error exists in your fill-in rule, the option sheet does not close and an error message appears in the message area.

Look for errors such as extra spaces in a column name, omission of a pair of quotation marks, or omission of a left or right quotation mark.

Correct any errors and select [Start] again.

4. If you want to save the merged document, select any available position on the desktop, or select any suitable container, such as a folder, book, or file drawer.

A document icon, with the same name as your list template, appears on the desktop or is placed in the selected container. It contains one section of text for each table row, and you can edit and manipulate it like any other document.

**Note:** If you select anything other than the desktop, an appropriate container, or an Interpress printer icon (for printing, discussed next), the merge operation is canceled.

## Printing a list

---

1. Select an Interpress printer icon and complete the Printing option sheet as desired, selecting [Repaginate] for **Before Printing**.

2. Select [Start] in the Printing option sheet header.

A paginated document is printed, with a section of text for each table row.

**Note:** If you select an Interpress printer icon, the document is not saved.

---

## Controlling spacing for tables with blank cells

---

1 2 3...

To separate data in your output documents, you usually enter space and new-line characters in your form letter template or in the fill-in rule option for labels or lists. For some source tables, you need to enter such characters in certain table cells before you merge the data.

The exceptional situation occurs when some rows have data in a certain column and others have no data in that column. For example, in the Clients table in Figure 14-16, the Jones row has data in the Initial and Company columns, but the Smith row does not. Merged into the layout, specified either in a form letter template or in the fill-in rule option for labels or lists, the merged data includes unwanted spaces.

In the merged document, the Smith text has an extra, unwanted space between the first and last name and an extra new-line character between the name and the address line.

Figure 14-16 Example of unwanted spaces in merged data

<b>Clients Table:</b>				
<b>LastName</b>	<b>FirstName</b>	<b>Initial</b>	<b>Company</b>	<b>Address</b>
Jones	John	J.	ABC Corp.	123 Main Enid, OK
Smith	Samuel			23 Elm Fargo, ND

**Layout:**  
 FirstName space Initial space LastName new-line  
 Company new-line  
 Address

**Merge results:**  
 John J. Jones                      Samuel Smith  
 ABC Corp.  
 123 Main                              23 Elm  
 Enid, OK                              Fargo, ND

## Adding individual spaces

If you have a situation such as that illustrated in Figure 14-16 within a short table, follow this procedure:

1. In the Initial column of the table, enter a space after each entry. If a cell has no entry, leave the cell blank.
2. In the Company column, enter a new-line character after each entry. If a cell has no entry, leave the cell blank.

- Use the following layout for the merge operation:

```
[FirstName] space [Initial][LastName] new-line
[Company][Address]
```

The result is:

John J. Jones	Samuel Smith
ABC Corp.	23 Elm
123 Main	Fargo, ND
Enid, OK	

## Adding spaces with fill-in rules

Rather than manually adding individual space and new-line characters to table entries, you can write column fill-in rules to quickly add such characters where they are needed. If you have a situation such as that illustrated in Figure 14-16 within a long table, use this procedure:

- For the Initial column, enter the following fill-in rule in the Table Column property sheet to add a space if there is an entry:

CHOOSE

```
Clients[THIS ROW].Initial = "" ->"";
OTHERWISE -> Clients[THIS ROW].Initial
& " "
```

- For the Company column, enter the following fill-in rule in the Table Column property sheet to add a new-line character if there is an entry:

CHOOSE

```
Clients[THIS ROW].Company = "" ->"";
OTHERWISE ->
Clients[THIS ROW].Company& "
"
```

- Select [Update Fields].



4. Use the following layout for the merge operation:

[FirstName] space [Initial][LastName] new-line  
[Company][Address]

The result is:

John J. Jones	Samuel Smith
ABC Corp.	23 Elm
123 Main	Fargo, ND
Enid, OK	

---

## A. Fill-in rule operators, expression, and built-in values

### Arithmetic operators

Operator	Syntax	Result
+ (addition)	amount + amount	[Amount]
	date + amount	[Date]
- (subtraction)	amount - amount	[Amount]
	date - amount	[Date]
	date - date	[Amount]
* (multiplication)	amount * amount	[Amount]
/ (division)	amount / amount	[Amount]
% (percentage)	amount%	[Amount]
- (unary minus)	-amount	[Amount]
ARCCOS	ARCCOS[amount]	[Amount]
ARCSIN	ARCSIN[amount]	[Amount]
ARCTAN	ARCTAN[amount]	[Amount]
COS	COS[amount]	[Amount]
EXP (exponent)	EXP[amount, power]	[Amount]
	EXP[power]	[Amount]
LN	LN[amount]	[Amount]

**Arithmetic operators (continued)**

<b>Operator</b>	<b>Syntax</b>	<b>Result</b>
LOG	LOG[base,arg, ...]	[Amount]
MAX (maximum)	MAX[amount, amount, ...]	[Amount]
	MAX[date, date, ...]	[Date]
MEAN	MEAN[amount, amount, ...]	[Amount]
MIN (minimum)	MIN[amount, amount, ...]	[Amount]
	MIN[date, date, ...]	[Date]
MOD (modulo)	amount MOD amount  <b>Note:</b> You must insert a space between MOD and its operands.	[Amount]
PRODUCT	PRODUCT[amount, amount, ...]	[Amount]
SIN	SIN[amount]	[Amount]
SQUARE	SQUARE[amount]	[Amount]
SQUAREROOT	SQUAREROOT[amount]	[Amount]
STANDARDDEVIATION	STANDARDDEVIATION [amount, amount, ...]  <b>Note:</b> The formula that calculates the standard deviation uses N (rather than N-1) as the divisor.	[Amount]
SUM	SUM[amount, amount, ...]	[Amount]
TAN	TAN[amount]	[Amount]

## Text operators

Operator	Syntax	Result
& (concatenation)	value & value	[Text]
MAX (maximum)	MAX[text, text, ...]	[Text]
MIN (minimum)	MIN[text, text, ...]	[Text]

## Comparison operators

Operator	Syntax	Result
= (equal to)	value = value	"yes" or "no"
# (not equal to)	value # value value ≠ "yes" or "no"	"yes" or "no"
> (greater than)	value > value	"yes" or "no"
< (less than)	value < value	"yes" or "no"
>= (greater than or equal to)	value >= value	"yes" or "no"
<= (less than or equal to)	value <= value	"yes" or "no"

## Logical operators

Operator	Syntax	Result
AND	operation AND operation  <b>Note:</b> You must insert a space between AND and its operands.	"yes" or "no"
NOT	NOT operation  <b>Note:</b> You must insert a space after NOT; you must also insert a space before NOT, unless it begins the fill-in rule.	"yes" or "no"
OR	operation OR operation  <b>Note:</b> You must insert a space between OR and its operands.	"yes" or "no"

## Conversion operators

Operator	Syntax	Result
MAKEAMOUNT	MAKEAMOUNT[text]	[Amount]
MAKEDATE	MAKEDATE[text]	[Date]
MAKETEXT	MAKETEXT[amount]	[Text]
	MAKETEXT[date]	[Text]

## Test operators

Operator	Syntax	Result
ISVALIDAMOUNT	ISVALIDAMOUNT[text]	"yes" or "no"
ISVALIDDATE	ISVALIDDATE[text]	"yes" or "no"

## Count operators

Operator	Syntax	Result
COUNT	COUNT[operand, operand, ...]	[Amount]
COUNTALL	COUNTALL [operand, operand, ...]	[Amount]

## CHOOSE expression

Operator	Syntax	Result
CHOOSE	<p>CHOOSE                      criterion -&gt; fill-in rule;                      criterion -&gt; fill-in rule;                      ...;                      ...;                      ...;                      OTHERWISE -&gt; fill-in rule</p> <p><b>Note:</b> You must insert a space following CHOOSE.</p>	The value of the fill-in rule for the first criterion that results in "yes"

**Built-in values**

<b>Value</b>	<b>Data Type</b>
CURRENTTIME	[Any] or [Text]
CURRENTDATE	[Any], [Text], or [Date]
CURRENTMONTH	[Any], [Text], or [Amount]
CURRENTDAY	[Any], [Text], or [Amount]
CURRENTYEAR	[Any], [Text], or [Amount]
CURRENTUSER	[Any] or [Text]
THE NAME OF THIS DOCUMENT	[Any] or [Text] <b>Note:</b> You must include a space between the words of this built-in value.
PI[ ]	[Any], [Text], or [Amount]

---

**B.****Fill-in rule  
operator order**

The Document Editor performs operations within fill-in rules in the following sequence:

1. It first evaluates the expressions within parentheses, from the innermost set of parentheses to the outermost.
2. It then performs operations in the following order of priority:

Order	Operator
1st	ARCCOS, ARCSIN, ARCTAN, COS, COUNT, COUNTALL, EXP, ISVALIDAMOUNT, ISVALIDDATE, LN, LOG, MAKEAMOUNT, MAKEDATE, MAKETEXT, MAX, MEAN, MIN, PRODUCT, SIN, SQUARE, SQUAREROOT, STANDARDDEVIATION, SUM, TAN
2nd	- (unary minus), %
3rd	*, /, MOD
4th	+, -
5th	& (concatenation)
6th	=, # (≠), <, <=, >, >=
7th	NOT
8th	AND
9th	OR



3. For operators that have the same order of priority, the Document Editor evaluates them in the order they appear in the fill-in rule, from left to right.

Use parentheses to ensure the desired order of evaluation.

---

## C. Reserved words and name restrictions

---

### Guidelines for naming objects

---

Follow these guidelines when naming a field, table, or column that will be used in a fill-in rule:

- The name should not contain spaces or punctuation characters.
- The name should not begin with a numeral.
- The name should not be a reserved word of the CUSP language (see "Reserved words" later in this appendix).

---

### Workarounds for restrictions

---

If an object name does not follow the recommended naming restrictions, you still can refer to it in a fill-in rule in the following ways:

- Insert an apostrophe before each space or punctuation character.
- Insert an apostrophe before the numeral that begins a name.
- Insert an apostrophe anywhere inside the reserved word.

For example: Comment is a reserved word. If a column in Table1 is named Comment, you cannot write a fill-in rule such as the following:

```
SUM[Table1.Comment]
```

The Document Editor displays an error message and the property sheet does not close.

You can write the fill-in rule as follows:

```
SUM[Table1.C'omment]
```

Names containing apostrophes are difficult to read and add "clutter" to fill-in rules. Whenever possible, avoid names that will require apostrophes.

**Note:** Do not place an apostrophe before a space in an icon name that is enclosed in quotation marks in an icon reference. Such names must appear exactly as shown on the property sheet for the icon.

---

## Reserved words

---

The following table lists words that are reserved for special use in the CUSP language. An asterisk (\*) indicates words that are reserved but not currently used in fill-in rules.

**Reserved words**

ADD*	DO*	OTHERWISE
ALLOWING*	EACH*	PAUSE*
AMOUNT*	END*	PERFORM*
AND	ERROR*	POST*
ANY*	EXECUTE*	RESERVE*
BACKGROUND*	FIELD*	ROW
CALL	FOR*	SECOND*
CHOOSE	ICON*	SECONDS*
CLOSE*	IF*	SELECT*
COMMENT*	IN	SETPROPS*
CONFIRMATION*	INTO*	STOP*
COPY*	IS	STORE*
CURRENTDATE	IT	TEXT*
CURRENTDAY	MENU*	THE
CURRENTMONTH	MOVE*	THEN*
CURRENTTIME	NAME	THIS
CURRENTUSER	NOT	TO*
CURRENTYEAR	OF	WHILE*
DATE*	ON*	WHOSE
DELETE*	OPEN*	WITH
DESKTOP*	OR	WITHOUT*



---

## D. Spaces and punctuation in fill-in rules

You must use precise wording and punctuation in fill-in rules. However, the appearance of words and spaces can vary, as discussed below.

---

### Spaces before and after operators

---

Where a space is either required or optional, you can use any number of spaces, tabs, new-line characters, and new-paragraph characters.

#### Required space

---

Spaces are required before and after the following operators:

- AND
- MOD
- NOT (omit the preceding space if NOT begins the fill-in rule)
- OR

#### Optional space

---

Spaces before and after these operators are optional:

Addition (+)	Greater than (>)
Subtraction (-)	Less than (<)
Multiplication (*)	Greater than or equal to (>=)
Division (/)	Less than or equal to (<=)
Equal to (=)	
Not equal to (#)	

## Space before the left bracket

---

Spaces are optional between an operator and its bracketed operand.

Example: You can write the operation that squares the amount 25 in any of these ways:

SQUARE[25]

SQUARE [25]

Square  
[25]

The optional spacing between an operator and the left bracket applies to all the arithmetic operators that include bracketed operands, all the text operators, conversion operators, test operators, and count operators.

PI[] is a value, not an operator, but a space between PI and the left bracket also is optional.

## Spaces after commas that separate operands

---

A comma is required to separate multiple operands that are contained in brackets. Spaces after the comma are optional.

Example: You can write the operation that sums the amounts 5, 10, and 20 in any of these ways:

SUM[5,10,20]

SUM [5, 10, 20]

SUM  
[5,10,  
20]

---

## Case

---

Words can be uppercase, lowercase, or any combination of case.

Example: You can write the operator that finds the square root of an operand in any of these ways:

```
SQUAREROOT
SQUAREroot
squareroot
SquareRoot
```

---

## CHOOSE expression spacing and punctuation

---

A space is required after the word CHOOSE. A space before and after the arrow (->) is optional. A semicolon is required to separate each criterion/fill-in rule pair in a CHOOSE expression. Spaces after the semicolon are optional.

No semicolon is allowed after the fill-in rule that completes the OTHERWISE criterion.

Here are three acceptable ways to write the same CHOOSE expression. The third is preferred because it is most readily understood.

```
CHOOSE Field1 = Field2 -> 20; Field1 = Field3
-> 30; OTHERWISE -> ""
```

```
CHOOSE
Field1 = Field2 -> 20;
Field1 = Field3 -> 30;
OTHERWISE -> ""
```

```
CHOOSE
  Field1 = Field2 -> 20;
  Field1 = Field3 -> 30;
  OTHERWISE -> ""
```



---

## **Table pathname spacing and punctuation**

---

A space is optional between the table name and the left bracket that begins a row identification.

A space is required between the word ROW and the row number when referring to either a main row or a repeating row.

A period is required before a column name or a subcolumn name.

In table pathnames, a row is always identified before a column and a repeating row is always identified before a subcolumn.

Here are three ways you can write a pathname that identifies the first cell in the first subcolumn of a table named Table1:

Table1[ROW 1].Column1[ROW  
1].Subcolumn1

Table1 [ROW 1].Column1[ROW  
1].Subcolumn1

Table1  
[ROW 1].Column1[ROW 1].Subcolumn1

---

## E. Appearance of field or table filled automatically

The appearance of text in a field or table cell that is filled automatically depends on whether the fill-in rule for the field or column is:

- A text constant
- A computed value
- A copy of text in another field or table cell

---

### Text constant

---

If the fill-in rule is a text string constant, the appearance of the field or table cell entry is determined by the character properties of the text string.

---

### Computed value

---

If the fill-in rule computes a value, the appearance of the field or table cell entry is determined as follows:

- If the computed value is the only entry in the field, the character properties are the same as the left field bounding character of the field.
- If the computed value is the only entry in a table cell, the character properties are the same as the new-paragraph character in the table cell (or tab character if decimal aligned).

- If the computed value is added to an existing entry in the field or cell, the character properties are the same as those of the character that immediately precedes the computed value.

---

## Text copied from a field or table cell

---

If the fill-in rule copies text from another field or table cell (the “source”) to the current field or table cell (the “destination”), the appearance of the destination entry depends on whether the copied characters are in the first or a subsequent run of text in the source.

A *run* is a contiguous sequence of characters with the same character properties. Examples are:

One run: Something

Two runs: abcdef

Five runs: **Antidisestablishmentarianism**

See Table E-1 for the appearance of text in a destination field (a field with a fill-in rule that copies text from another field or table source).

See Table E-2 for the appearance of text in a destination table cell (a cell with a column fill-in rule that copies text from a field or table source).

Table E-1 Appearance of text copied by a fill-in rule for a field

Source	Significant source properties	Text appearance, destination field
Field, first run	Properties of first character <u>same</u> as source's left bounding character	Same as left bounding character in destination field
	Properties of first character <u>different</u> from source's left bounding character	Same as first character in source
Table cell, first run	Properties of first text character <u>same</u> as source's first new-paragraph character (or tab if decimal aligned)	Same as left bounding character in destination field
	Properties of first text character <u>different</u> from source's first new-paragraph character (or tab if decimal aligned)	Same as first text character in source
Field or table cell, subsequent run (not first run)	Properties of first character in subsequent run	Same as first character in run in source

Table E-2 Appearance of text copied by a fill-in rule for a table column

Source	Significant source properties	Text appearance, destination cell
Field, first run	Properties of first character <u>same</u> as source's left bounding character	Same as new-paragraph (or tab) character in destination cell
	Properties of first character <u>different</u> from source's left bounding character	Same as first character in source
Table cell, first run	Properties of first text character <u>same</u> as source's first new-paragraph character (or tab if decimal aligned)	Same as new-paragraph (or tab) character in destination cell
	Properties of first text character <u>different</u> from source's first new-paragraph character (or tab if decimal aligned)	Same as first text character in source
Field or table cell, subsequent run (not first run)	Properties of first character in subsequent run	Same as first character in run in source

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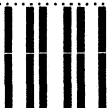


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