Layering as a “Safety Net” for Minimalist Documentation

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In this chapter I argue the value of adding supplementary material to minimalist documentation so as to provide a "safety net" for users. We can, in other words, use the rhetorical technique of "layering" to give users access to extra information that they may need if minimalist documentation does not provide all the information they require.

In making this argument I look broadly at computer documentation. I classify the various forms of computer documentation and consider the degree to which the various categories are minimalist (or can be minimalist) in character and how amenable each category is to the layering strategy. While there are various ways to classify computer documentation, I have found it most useful to delineate these four fundamental categories:

1. Procedures (found in Help systems, user’s guides, and minimalist tutorials)
2. Standard print and online tutorials
3. Performance support Help (wizards and coaches)

4. Balloon Help and other forms of interface-based documentation

All but the performance support category exist in both the print and online media, but throughout this chapter I emphasize online documentation. This is because the online medium has become dominant and because the dynamic nature of online text and graphics is more suitable than is print to layering.

Of the four categories, I focus heavily on procedures. This is because procedures are by far the most prevalent category of documentation and the category that minimalist designers have most often worked with. Standard tutorial documentation and performance support, I believe, have less affinity with minimalism than the other two categories, and so I treat them in less depth. Balloon Help is covered in detail. This is because, as I maintain, balloon Help is an inherently minimalist form of documentation, because balloon Help is a very useful and flexible form of Help, and because balloon Help can be effectively layered.

The first three categories, while distinct from each another, share one trait. They are "task based." They list, in an online table of contents, index, and other places, tasks that users will want to perform, and then guide the user through completing these tasks. Balloon Help is interface-based. Users who explore the interface looking for a an interface element relevant to their goals get explanations of the functions of the various interface elements. The chapter closes with a look at Microsoft's "ghosted" Help topics, an intriguing design that combines balloon Help with task-based procedural Help and, at times, includes elements of performance support Help.

The Risk in Minimalist Documentation

Minimalism is a complex and evolving strategy, but to summarize briefly, we can say that minimalism is an action-oriented strategy that attempts to accommodate the desire of many users to focus on the interface rather than on the documentation, to experiment and to exercise their problem-solving skills. To achieve this goal, minimalist documentation is brief and excludes or abridges some of the components found in procedures and standard tutorials. Minimalist documentation, however, does include information to assist users in recognizing and recovering from the errors that users are apt to commit when they experiment with the interface.

Minimalism addresses a problem well known in the documentation community and computer industry in general: the reluctance of many users to read documentation.[1-4] When users are unable to accomplish a task or are confused by what they see on the screen, they often try to solve the problem on their own. If they do consult a user's guide or Help system, they are apt to scan for just the item of information they hope will solve their problem, and if they cannot get the desired information quickly, they will likely abandon the documentation. Often users will simply give up on what they were trying to accomplish and look for a workaround. Users' resistance to documentation and related aspects of user behavior were first analyzed by Carroll and Rosson[5] and provided much of the impetus for the minimalist strategy.

While minimalism encourages users to actually read documentation, it is not without risks. Several commentators on minimalism have expressed concern with reducing the information that users receive. [3, 6-7] Carroll himself acknowledges a potential problem: "learners might not have access to enough information to reason successfully and might be anxious about bearing such responsibilities." [8]

The risks, as I see them, are these:

1. The user may be unable to successfully complete the task.

2. The user may complete the task but expend more time and energy than he or she wished to.

3. In the process of completing the task (or attempting to) the user may develop an incorrect mental model of the system that will cause difficulties later on.

The degree of risk depends, of course, on how radically information is cut and just what is cut and how. Carroll's more recent formulations of minimalism [9-10] are more cautious in this regard than earlier formulations of minimalism. [11, 1] Still, this risk, though different in each minimalist design, is always present.

Reiterative usability testing has always been a core requirement of minimalism [1-10], and so one minimalist response to those concerned about sparse information is that first-rate design skills and reiterative usability testing should enable documentors to provide ***just*** the information that users need and no more. Maybe so, but as Carroll and van der Meij [10] themselves recognize, providing just the right amount of information is a challenging endeavor. Furthermore, because documentation departments are often understaffed and because software development schedules are often very demanding, documentors often lack the opportunity to test and re-test their documentation.

Another minimalist response is that learning from errors can be a productive experience. In particular, reasoning about errors increases understanding and promotes retention. This is certainly true to a point, and minimalist designers should certainly attempt to help users learn from their errors. But the efficacy of errors is highly situational. Users won’t learn if they get seriously confused, and they may not appreciate this kind of learning if they are under work pressure or if they have no interest in remembering how the task is performed. [12]

Another complication for minimalism is that often documentors (in my experience, at least) believe that they don't have a fully adequate profile of their users. This situation comes about when documentors are cut off from marketers and others who are closer to the customers, or when the company as a whole has a fuzzy view of its customers.

Finally, we have the issue of diverse audiences. If the users of a software product are composed of diverse groups, the safest approach is usually to create separate documentation for the major groups. But the diversity of the audiences often exceeds the willingness of software companies to create separate documentation components. In fact, we commonly see a single document set serving the needs of a very diverse audience. The need to write documentation for diverse audiences, which is inadequately addressed by minimalists, severely complicates the task of providing “just” the information that is necessary. For all these reasons, minimalist designers walk the tightrope or, more precisely, skirt the precipice of insufficient information.

Layering in Print and Electronic Documents

Layering is a familiar concept in technical communication. It means providing clearly marked and useful reading choices, alternative channels through the information that accommodate different needs. Layering can be provided for novices who need more basic information and for experts who need more advanced information. It can also be provided for segments of an audience with special concerns. For example, a report might include an appendix of legal details intended primarily for the organization's attorneys. The concept of layering presents at least some theoretical difficulty. This is because in many print and electronic documents headings and subheadings only approximate a layering strategy. A clarifying perspective is to say that true layering exists when the channels through the document are part of an explicit strategy for accommodating selective reading. For a careful analysis of layering (though it uses the term “compartmentalization”), see Holland, Charrow, and Wright. [13]

As Horton has noted [14] , layering is more effective online than in print. This is because in the online medium layering can be accomplished through various kinds of hypertext links (or "jumps") that keep the supplemental information out of the way until it is needed. We will now examine each of the categories of documentation set forth above with an eye to their minimalist character and potential for layering.

Procedures

Procedural discourse is all around us. Recipes, travel directions, administrative procedures, and instructions for assembling and operating all kinds of equipment are just some of the forms of procedural discourse. Within the world of computer documentation, procedures make up the central part of most Help systems and user's guides. Procedures, however, are often closely associated with conceptual overviews, definitions, and other kinds of information. The basic components of computer procedures are briefly described below and can be seen in Figure 1. For a more complete discussion of the components of procedures, see Boggan et al. [15]

The starting point of procedures are the tasks that users want to accomplish, or, in other words, the user's goal or purpose. Almost always the purpose of the procedure is expressed in the procedure’s title. Documentors often elaborate on the procedure title in a brief paragraph or two, sometimes called the "conceptual element." The conceptual element clarifies the purpose of the procedure, states any conditions that must be met before the procedure can be carried out, and makes clear any major implications ("side effects") of carrying out the procedure.

The information in the title and conceptual element enables users to decide whether they want to carry out the procedure. If they decide to, they need to know the specific actions they must take. These actions are described in a set of steps (or, on occasion, a single step). Steps often consist of nothing more than straightforward actions:

Under Pagination, click Keep with Next.

Other steps are more complex. For example, they may describe optional actions that users may or may not want to take:

To download your files in compressed form, click Compression.

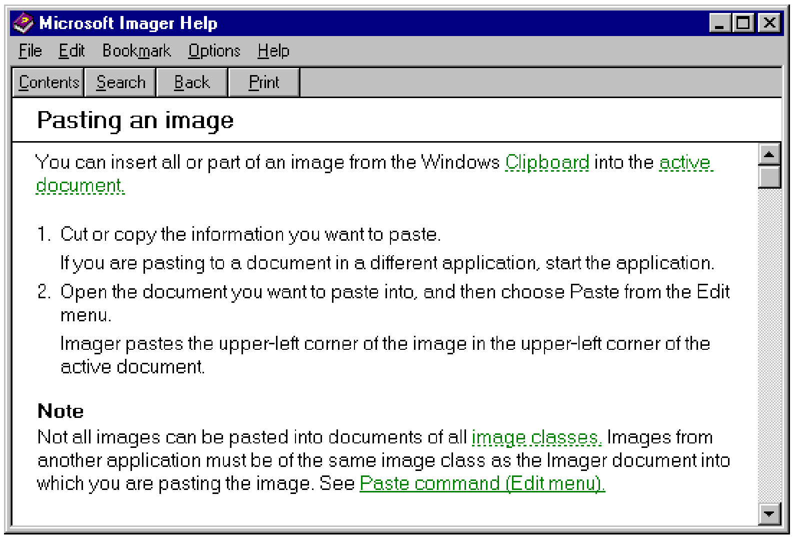
Some steps describe conditions and their associated actions. In other words, they ask users to test for a condition and, if it is operative, to take the action that is necessary to address the condition:

> If your view of the tape icon is not expanded, double click on the icon to display its tape volumes.

Documentors sometimes choose to provide a feedback statement to assist the user in verifying that the correct action has been taken and that the system has responded appropriately.

> Click the vertex whose position you want to change.
>
> The vertex turns magenta, and the pointer changes to a four-headed arrow.

Many procedures utilize notes, usually located after the final step. Notes convey less important information, usually options that few users will care about and non-critical conditions that few users will encounter. The use of notes, a form of layering, enables the Help author to keep the main body of the procedure shorter and less cluttered.



Pasting an image

You can insert all or part of an image from the Windows Clipboard into the active document.

1. Cut or copy the information you want to paste.

   If you are pasting to a document in a different application, start the application.
2. Open the document you want to paste into, and then choose Paste from the Edit menu.

   Imager pastes the upper-left corner of the image in the upper-left corner of the active document.

Note

Not all images can be pasted into documents of all image classes. Images from another application must be of the same image class as the Imager document into which you are pasting the image. See Paste command (Edit menu).

Figure 1. A simple procedure with a topic title, a one-sentence conceptual element, two steps (with feedback after Step 2), and a note.

Help “topics”

The term Help “topic” is often used to describe the physical unit of Help information. In other words, a Help topic consists of all the information that appears in a single window (whether or not it scrolls) or other display area. Generally procedure topics contain a single procedure, although multiple short procedures can be placed together in a single procedure topic. In addition to procedure topics, there are often topics for overviews, definitions, and descriptions of command options.

Overview topics

Overview topics are used when Help authors want to present more conceptual information than they wish to include in a procedure topic. In addition, an overview topic is often broad enough in scope to serve as the overview for a cluster of procedure topics—for example, an overview topic on document styles, which might run several paragraphs and include one or more graphics, could be accessible from several procedure topics dealing with styles. Not only can users jump from a procedure topic to its associated overview topic, overview topics are often accessible directly from the online contents and online index so that users can choose to read an overview topic prior to looking at an associated procedure topic. Overviews and overview topics figure significantly in the layering of minimalist documentation.

Layering Minimalist Procedures

Procedure topics are highly amenable to layering, and there are many ways to use layering to provide a safety net for minimalist procedures. Such procedure topics might have, at the initial level of presentation, the following characteristics:

1. No conceptual information other than the topic title

2. Steps written at a high level of generality

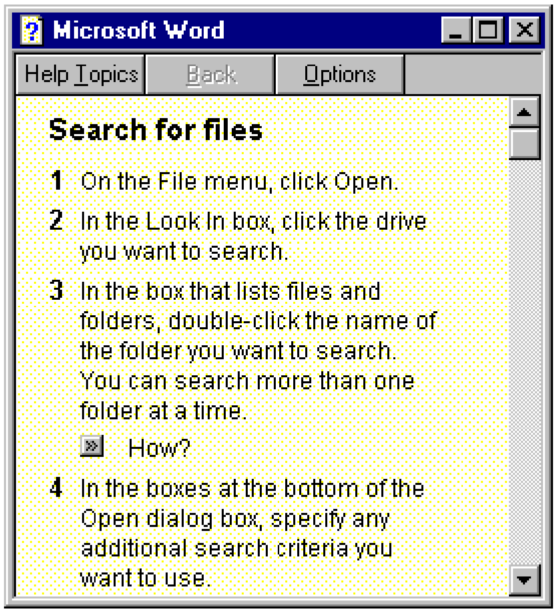
3. Omission of "note material" (little-used options and non-critical, infrequently encountered conditions)

Through these means, documentation becomes briefer and less intimidating than conventional procedures. Also, users are encouraged to explore the user interface and exercise their problem-solving skills. At the same time, complete information is available through layering for users who want the extra support.

This plan does not challenge or subvert minimalism. Rather, it is a sensible addition. From a certain perspective, back-up information can be regarded as information for error recognition and correction—a part of minimalist theory—although users are at least as likely to display back-up information to ***avoid*** making errors. Moreover, if it turns out that a minimalist Help system or manual is perfectly “on target” with regard to the needs of its audience, the back-up information will rarely be used. Assuming designers can carefully monitor how users work with the documentation, the designers might ultimately discard little-used back-up topics. Alternatively, if they discover instances in which many users must resort to the back-up topics, they can move this information into the initial topics that users encounter. Layering, then, might serve as a means of refining minimalist documentation in the early stages of its use, a substitute for extensive usability testing. We can further explore layering in minimalist procedures, by examining some layered Help systems.

Layering with a "how to" button

A highly effective layering technique, shown in Figure 2, is to write a step at a high level of generality for users who do not need more detail, but to make this detail available with a "how to" button.



Search for files

1 On the File menu, click Open.
2 In the Look In box, click the drive you want to search.
3 In the box that lists files and folders, double-click the name of the folder you want to search. You can search more than one folder at a time.
   How?
4 In the boxes at the bottom of the Open dialog box, specify any additional search criteria you want to use.

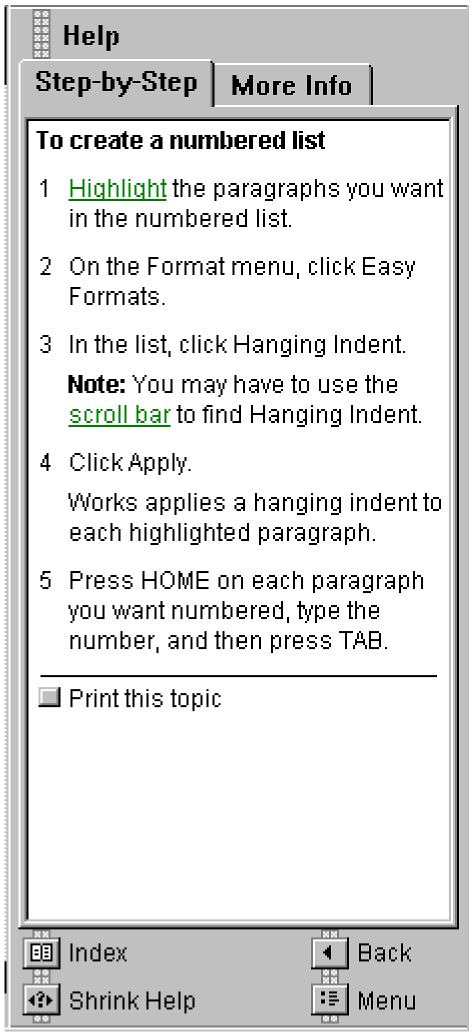
Figure 2. Layering with a "how to" button.

To layer procedure components other than steps, however, more comprehensive designs are needed.

Layering with tabs

Microsoft Works 4.0 is an integrated suite of business applications intended for entry-level users. Works Help (and certain other Microsoft Help systems) uses a distinctive tabbed design to layer various kinds of information. Two portions of a typical topic are shown in Figures 3 and 4. The procedure for creating a numbered list that the user initially encounters is moderately minimalist:

there is no conceptual element, the high-level procedure doesn't explain how to highlight, and some user options are not addressed. Certainly this is an uncluttered, unintimidating topic that is more action oriented and demands greater involvement from users than traditional procedures. If the user wants more support, however, she need only click the More Info tab. Now an overview topic, detailed steps on how to highlight, and information on two special formatting options become available. There are, as we shall see, pitfalls and drawbacks in this kind of design, but the fundamental strategy, I think, is sound.



To create a numbered list

1 Highlight the paragraphs you want in the numbered list.

2 On the Format menu, click Easy Formats.

3 In the list, click Hanging Indent.

Note: You may have to use the scroll bar to find Hanging Indent.

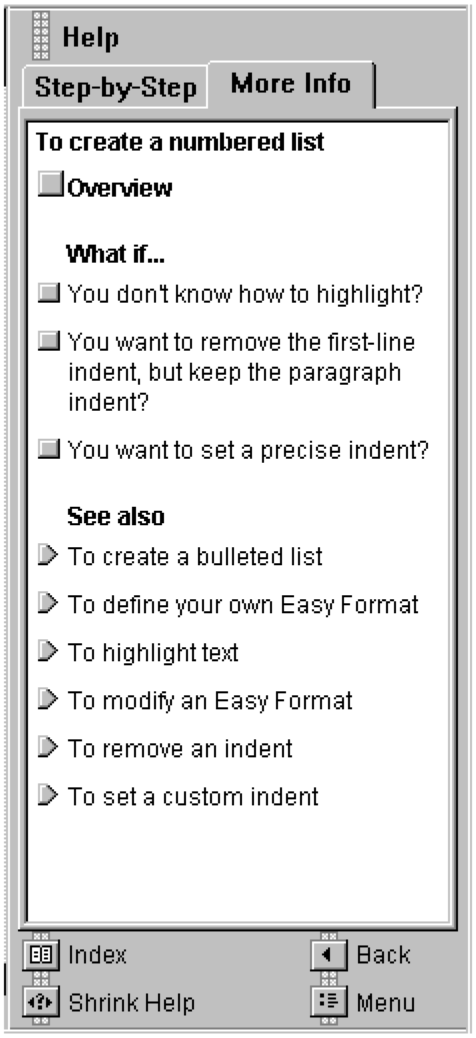
4 Click Apply.

Works applies a hanging indent to each highlighted paragraph.

5 Press HOME on each paragraph you want numbered, type the number, and then press TAB.

Print this topic

Figure 3. A minimalist procedure topic in a tabbed Help system.


Help

Step-by-Step | More Info

To create a numbered list

Overview

What if...

- You don't know how to highlight?
- You want to remove the first-line indent, but keep the paragraph indent?
- You want to set a precise indent?

See also

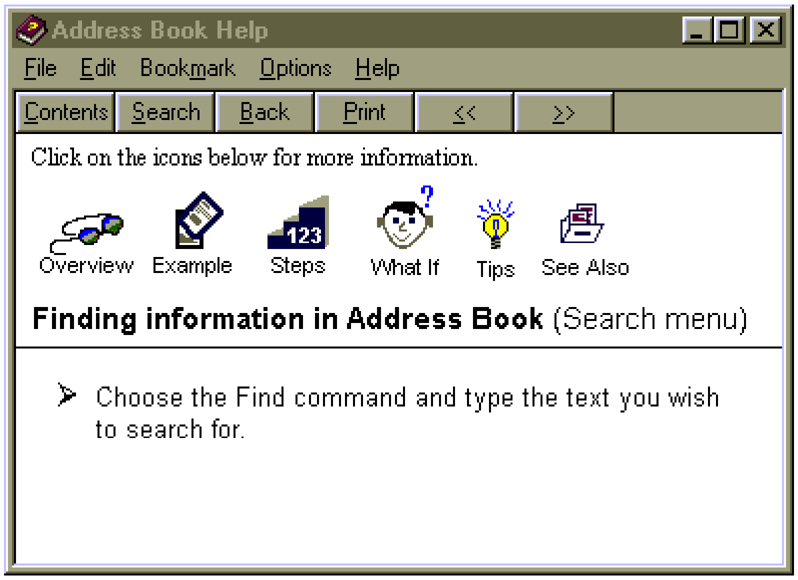
- To create a bulleted list
- To define your own Easy Format
- To highlight text
- To modify an Easy Format
- To remove an indent
- To set a custom indent

Figure 4. More complete information available through layering.

Layering with multiple windows

This minimalist Help system for a shareware application known as Address Book was created by an undergraduate Technical Communication major at the University of Washington. Figure 5 shows the initial topic that users encounter for an important Address Book task. This topic is decidedly minimalist in character: there is no purpose information other than the topic title, and there is only a single, very general step (although including the appropriate menu with the topic title is akin to a step). When the user chooses the Find command, the Find dialog box will display. In addition to typing text into the text box, the user must also make selections from a cluster of checkboxes and must choose the OK or Cancel button. The designer is assuming that many users will be able to interpret the labels on the checkboxes and so has avoided lengthy steps (or possibly a table) explaining these choices. The design goal is that a proficient computer user or else a novice with a yen for experimentation should succeed in many tasks using only the initial, minimalist topic. Layering, however, makes extensive back-up information readily available. Six graphical hotspots provide supplementary information for users who want (1) conceptual information, (2) an example, (3) detailed steps, (4) explanations of little-used options and infrequently encountered conditions, (5) tips for the more efficient use of the command, and (6) jumps to related topics. Figure 6 shows this topic after the user has clicked the overview hotspot to display a pop-up overview topic.

Layering, unfortunately, is not an ideal solution: layering tends to make documentation more complex to create and more complex to use. In case of Address Book Help, the Help author must write and code a cluster of Help topics for each task. Because not every procedure will need the full set of back-up topics (for example, in some procedures there will be no need for a "What If" topic), the Help author must also create grayed-out hotspots. This complexity creates barriers for users. Users of Address Book Help must learn that the graphics are hotspots, must learn what kind of information each graphic represents, and must learn not to click the grayed-out hotspots. In the case of the Microsoft Works Help system, the tabbed design makes implementation more complex, and some users have had difficulty understanding the operation of the tabs.[16]

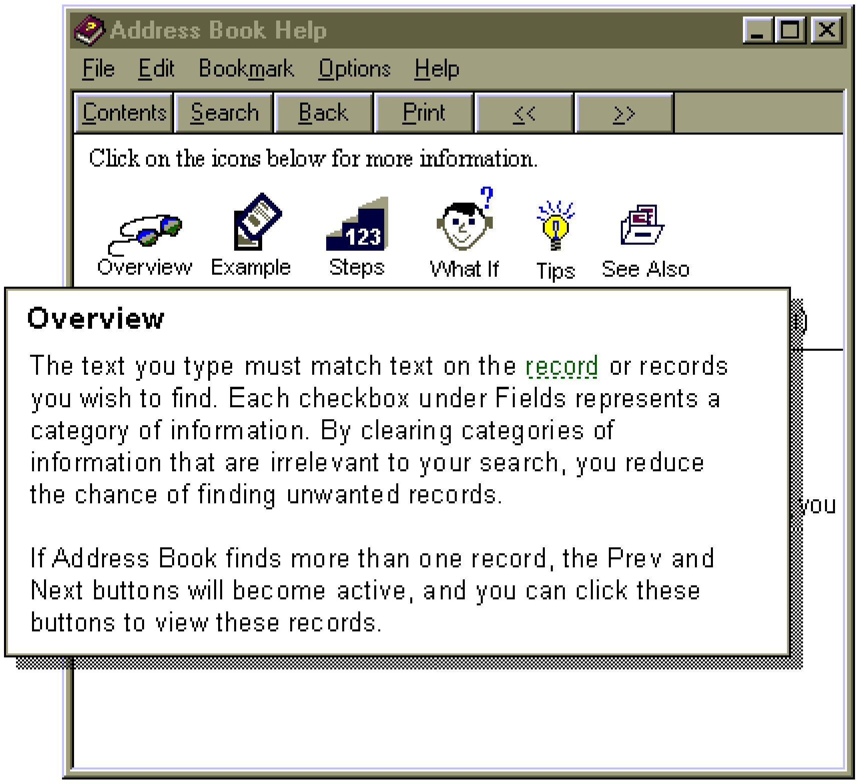

Address Book Help
File Edit Bookmark Options Help
Contents Search Back Print << >>
Overview Example Steps What If Tips See Also

Click on the icons below for more information.

Finding information in Address Book (Search menu)

➤ Choose the Find command and type the text you wish to search for.

Figure 5. A minimalist procedure topic with hotspot graphics that display more detailed information.


Address Book Help
File Edit Bookmark Options Help
Contents Search Back Print << >>
Overview Example Steps What If Tips See Also

Click on the icons below for more information.

Overview

The text you type must match text on the record or records you wish to find. Each checkbox under Fields represents a category of information. By clearing categories of information that are irrelevant to your search, you reduce the chance of finding unwanted records.

If Address Book finds more than one record, the Prev and Next buttons will become active, and you can click these buttons to view these records.

Figure 6. Layering with an overview topic displayed as a pop-up window.

Tutorials

Procedures are “instrumental” documentation. They enable users to perform a task while reading the procedure, but they do not explicitly support retention. Even so, when users follow traditional procedures, they are apt to remember something. Moreover, they may achieve high levels of retention if they transfer the information to long-term memory by reasoning about the procedure and the task (elaboration) or if they have reason to repeat the task (rehearsal). Procedures, however, do not include special components or special strategies intended to promote retention. In contrast, promoting retention is the defining feature of tutorial documentation, although standard tutorials and minimalist tutorials embody very different strategies for doing so.

Standard tutorials

Standard tutorials provide a slow-paced, high-comfort learning environment.[17] They are very often geared to relatively inexperienced computer users and to patient and timid learners. More aggressive learners often skip tutorials altogether.[4] To provide this highly supportive, high-comfort learning environment, tutorials provide very rich conceptual information, steps more detailed than we see in any other form of documentation, and feedback following almost every action the user takes. Standard tutorials are also highly visual. Print tutorials will employ many graphics to explain concepts, show the user where to act, and to provide feedback. Online tutorials simulate a user’s interaction with the software product. One further benefit of online tutorials is that they incorporate routines that can block or efficiently correct user errors.

Standard tutorials seek to achieve retention through transfer. In other words, users do not work on their own tasks. Rather, they work on pre-defined, “canned” tasks and then transfer what they have learned to their own work. The benefit of canned tasks is that the tutorial designer determines the tasks that the user will work on and the sequence in which the user will undertake these tasks. On the other hand, there is the considerable risk that the canned task will not be very similar to the user's actual goals, which frustrates both learning and transfer.

Standard tutorials promote retention through rehearsal and elaboration. For this reason, they tend to have extra components beyond those used in standard procedures. They are apt to have behavioral objectives, previews, reviews, and exercises. Sometimes the exercises are rote drill and practice; other times they are more meaningful. In standard tutorials, layering—at least in the usual sense—is not a central strategy. Tutorials, especially online tutorials, do feature alternative pathways, remedial pathways for users who make errors, and “fast-track” pathways for users who are moving quickly. Very often, however, the choice of pathways is managed by the tutorial rather than the user.

Minimalist tutorials

Minimalists reject the standard tutorial model. First, minimalists want users to work on their own tasks, and so try to avoid canned tasks. When the domain is sufficiently complex that they feel the need to manage the instructional environment for users, they create “canned” tasks that are as realistic as possible.[8-9] Furthermore, minimalists reject the slow-paced highly elaborated form of instruction characteristic of standard tutorials. Minimalist tutorials do not provide rich conceptual information, extensive feedback, and highly detailed steps. Instead, they try to achieve retention through deeper-level processing. In other words, durable learning results from sparse information and other strategies intended to engage and challenge the user.

To a large degree, the minimalist strategy in tutorial documentation is much like the strategy employed in other kinds of minimalist manuals and minimalist Help systems. For example, minimalist documentation, whether or not it is labeled “tutorial” documentation, is apt to include components for recognizing and correcting errors and components that invite users to practice what they have learned. Furthermore, in encouraging users to pursue their own tasks and, hence, jump around in the documentation, minimalist tutorials are akin to user’s guide and Help systems and quite unlike standard tutorial.[1, 10] Minimalists do not in fact distinguish crisply between instrumental and instructional discourse. Because the minimalist model for tutorial documentation is not greatly different from the minimalist model for procedures, the arguments and design techniques for layering minimalist tutorials are much like those for layering minimalist procedures. For this same reason, I regard minimalist tutorials as a kind of procedural documentation.

Performance Support Help

Performance support Help is a relatively new form of user assistance. Performance support Help attempts to provide the high level of support characteristic of standard tutorials while transcending the great limitation of tutorials by enabling users to undertake their own work. Performance support systems do this by maintaining an ongoing dialog with the user, in effect “walking” the user through the tasks she wishes to accomplish. Because there is branching logic built into this dialog, the tasks can be made easier for the user and the amount of text can be reduced. For example, if the user chooses an optional action that makes a subsequent step inapplicable, the system does not display the inapplicable step. Also, performance support Help systems are very often tightly integrated with the system. So, for example, rather than presenting the user with steps that ask the user to test for a certain condition and, if necessary, perform a required action, the performance support system tests for the condition itself and, if necessary, performs the actions for the user.

Performance support consists of two categories: wizards and coaches. Neither is strongly minimalist in character, and so my treatment of performance support is brief. I explain the two forms of performance support Help, indicate what I think is their relationship to minimalism, and discuss their use of layering. For a more complete treatment of performance support Help see Gery [18], Boggan [15], and Microsoft. [19]

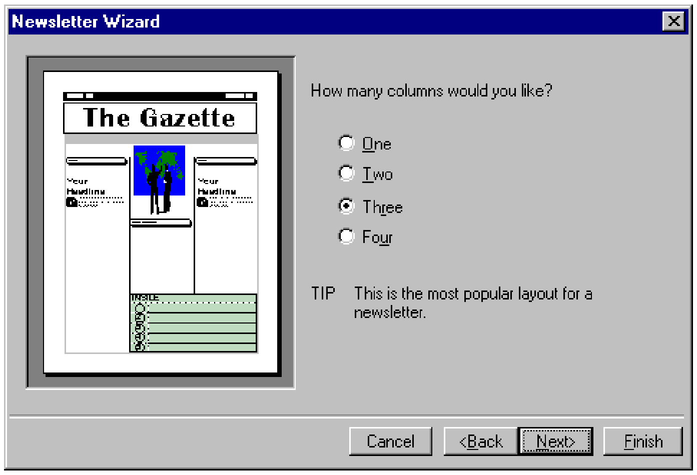
Wizards

Wizards are increasingly prevalent in contemporary software. Whether or not wizards are truly Help, they are definitely an aspect of the user interface that, like Help, is highly advisory in nature. A wizard provides a simple, single-purpose interface that enables the user to very quickly produce a useful end result. For example, in RayDream's Add Depth, a product for creating 3-D display text and copying that text into documents, a wizard enables the user to create the 3-D text using a limited set of Add Depth's features with virtually no investment in time. Another example is the Newsletter wizard in Microsoft Word, shown in Figure 7. This wizard allows a user to easily and rapidly create a newsletter layout, choosing from a limited set of format options. Other wizards perform tasks that would be difficult or impossible to do otherwise; in such cases the wizard may be the sole means of carrying out the task. Installation software is an example of such wizards.

Wizards usually consist of panels. A typical wizard panel consists of explanatory information and a simple set of choices (user options) usually provided by option buttons or checkboxes. When the user completes the panel, she can click the Next button and proceed to the next panel.

Wizards accord with minimalism because, unlike standard tutorials, users accomplish actual work. Also, they are action oriented in the sense that the user begins making choices right away. But in important ways wizards are antithetical to minimalism. By providing very ample conceptual information, by shielding users from the complexities of the product's regular interface, and by restricting what the user is able to do, wizards do not encourage exploration, experimentation, or problem-solving.

It is possible to layer wizards. For example, a wizard panel can contain a More Info button linked to a panel of supplementary information. But because the initial sequence of wizard panels, the main channel of information, is likely to provide fully adequate explanations of each decision the user will make, More Info buttons and other forms of layering are not typical.



How many columns would you like?

One
Two
[✓ Three]
Four

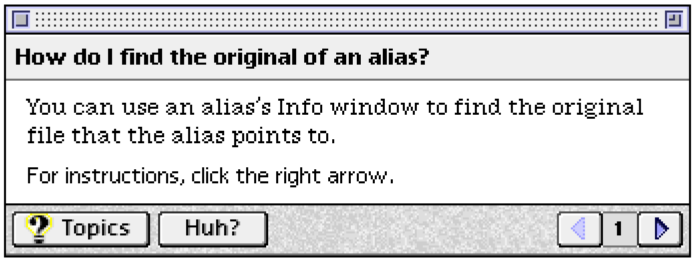
TIP This is the most popular layout for a newsletter.

Figure 7. A wizard.

Coach Help

Coach Help systems consist of sequences of brief Help topics that "walk" the user through a task. The defining feature of coach Help is that users work with the product’s regular interface. The typical sequence is this: the user chooses a coach-supported task from some kind of list, reads the first coach topic, performs an action (or a few closely related actions) with the product’s regular interface, clicks the coach Help topic’s Next button or chooses from a set of options, reads the next coach Help topic, and continues. Coach Help systems are often tightly integrated with the application so that the coach can block user errors and indicate the correct action (as in the Cue Card coach Help for Microsoft Publisher 2.0) or else can carry out a task if the user encounters difficulty (as in Macintosh Guide coach Help for Apple’s System 7.5 operating system).

Coaches are more in tune with minimalism than wizards because users are not shielded from the product’s regular interface. Also, whereas errors are impossible with the simplified wizard interface, coaches allow errors, but attempt to provide comprehensive error correction. Furthermore, more so than in wizards, coach topics may provide relatively sparse information, and so there is more likely to be layering. As shown in Figure 8, many Macintosh Guide coach topics have a “Huh?” button that allows users to display more detailed actions or supplementary conceptual information. Still, coaches, like wizards, dictate the order in which users will carry out tasks and, in general, do not encourage exploration.


How do I find the original of an alias?

You can use an alias’s Info window to find the original file that the alias points to.

For instructions, click the right arrow.

Figure 8. Layering in Macintosh Guide coach Help.

Task-based vs. Interface-based Documentation

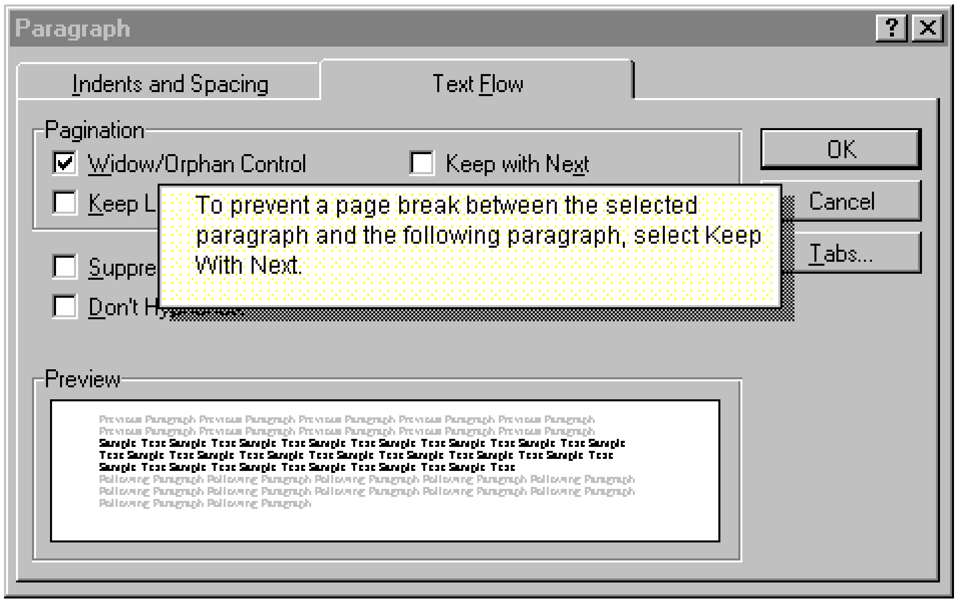
We have now considered three of the four categories of documentation in the classification I employ in this chapter. We should note that all three are similar in that they are based on procedures. Procedures themselves make up one category. Standard tutorial documentation consists of procedures augmented by elements designed to create a high-comfort environment for the user and to promote retention. Performance support also consists of procedures, though the procedures are decomposed into a sequence of wizard panels or coach topics.

These three categories can be described as “task-based.” They have as their starting point tasks that the user wants to perform. Usually the user is shown a list of tasks—such as the entries in a table of contents. The user chooses the task that corresponds to his or her current goal. (In the case of tutorials, the situation is somewhat different: often the user performs the task chosen by the tutorial designer.) To sum up, we can say that in task-based documentation the user encounters a task, asks the question “How do I do this?” and is shown steps and other information that provide an answer to that question.[20]

The fourth category is interface-based documentation.—of which balloon Help is the most important kind. Here the user does not begin with a goal set forth in some kind of list. Rather the user examines the various parts of the interface asking “What is this and what is this for?”[20] Interface-based documentation provides brief answers to these questions. It serves users who are simply exploring, trying to better understand what the software product can do. More frequently, the user has a goal in mind but has formulated this goal on her own rather than from a list of tasks. We will now look closely at balloon Help, and we will glance at other forms of interface-based documentation.

Balloon Help

Although there were precursors, balloon Help was introduced to most of the computer world in 1991 by Apple Computer as part of the System 7.0 release of the Macintosh operating system. Balloon Help has now been widely adopted in the computer industry and modified in various ways. This form of Help has been given various names, including "Bubble Help" (Lotus), "What’s This? Help" and "Tool Tips" (Microsoft), and "Object Help" (Borland). Amid all these names, however, “balloon Help” remains a serviceable and prevalent general term. Currently, Microsoft's What's This? Help (Figure 9) is the most complete implementation of balloon Help, and so it is the implementation I will describe here.



☑ Widow/Orphan Control
☐ Keep with Next
☐ Keep L
☐ Suppre
☐ Don't H

To prevent a page break between the selected paragraph and the following paragraph, select Keep With Next.

Figure 9. A What’s This? Help topic.

A What's This? Help topic consists of a (usually) small, non-scrolling window that appears next to an element of interest on the user interface. This window has no controls, although jumps to other topics can be implemented. Simplifying somewhat, these topics are displayed when the user clicks on the element of interest or, in certain circumstances, presses the F1 key.[19] They are dismissed by a click anywhere on the screen. Other forms of balloon Help display a balloon when the user pauses the pointer over an interface element for which a balloon topic has been written. This mechanism can result in a barrage of unwanted balloons, which was the case in Apple's original implementation.

Balloon Help's brief descriptions of interface elements can take various forms. Often the user simply learns the purpose of the interface element:

> Saves the document you are working with.

The documentor can also explain how to act on the interface element:

> Click here to save the document you are working with.

At times, brief conceptual information is included:

> Increases or decreases the amount of information that appears on your screen. Your monitor and display adapter determine whether your can change the setting. This is sometimes referred to as "resolution."

Finally, some balloons (e.g., Tool Tips) provide the names of toolbar buttons (or similar elements) that have icons rather than text to identify them. These balloons are typically displayed when the user pauses the mouse over the button.

The power of the balloon Help model lies in the speed and convenience with which users can get just the information they want.[21] Often users need nothing more than an elaboration on the necessarily brief labels that appear on many interface elements. For example, the labels on checkboxes and option buttons typically do not exceed two or three words, and so if a user sees the checkbox label “Keep with Next,” the user may well wonder what is being kept with what. A one-sentence explanation of the checkbox’s function, rapidly displayed and easily dismissed, resolves the problem.

Balloon Help and Minimalism

Balloon Help is inherently minimalist in nature and, indeed, is perhaps the most prevalent form of minimalism. The minimalist principles that balloon Help most fully accords with are presented below.

Action oriented. A central principal of minimalism is that documentation should be action oriented and let the user work with the software interface immediately.[9] Balloon Help certainly follows this principle. It never stands between the user and the interface. Indeed, it is an extension of the interface.

Users focus on the interface and explore the interface. In accordance with minimalism, balloon Help keeps the user’s attention on the interface and encourages exploration.

Users exercise problem-solving abilities and learn from problem solving. In accordance with minimalism, balloon Help encourages users to exercise their problem-solving abilities. Users must find the part of the interface relevant to the task they wish to perform before they can display a helpful balloon. Furthermore, balloon Help topics are typically brief and only explain the function of the interface object rather than presenting a complete procedure or any overview information. Users therefore must infer the necessary procedure from this sparse information. We should remember, however, that requiring users to exercise their problem-solving abilities is not always desirable. Some users may not succeed in figuring out the procedure from balloons or may prefer following the steps of an explicit procedure.

Error correction. Minimalism traditionally provides means for users to detect and recover from errors. This is highly desirable when users learn by exploring the interface. The convenience and speed with which balloons can be displayed can be viewed as a kind of error correction.[22] For example, if a user chooses a checkbox in a dialog box and gets the wrong result, she can easily display that checkbox's balloon and will likely learn why that checkbox was the wrong choice. Then, by displaying the balloons of the other controls on the dialog box she will very possibly get on the right track.

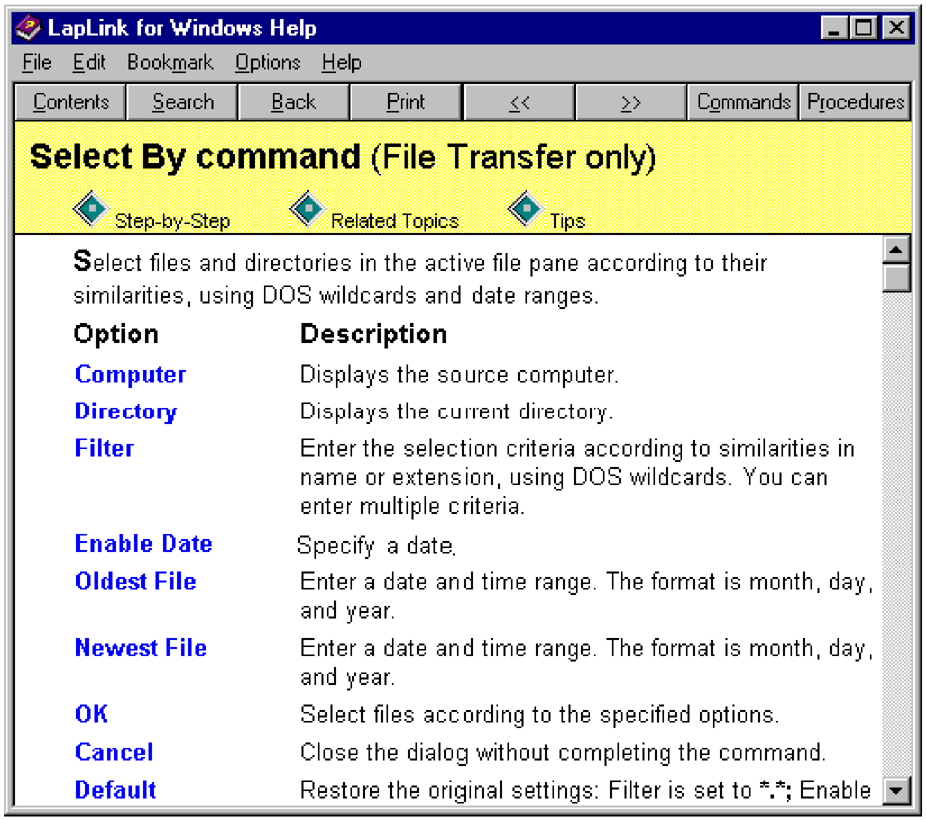
Layering balloon Help to provide a "safety net" for users

Although balloon Help is an effective form of minimalist documentation, it is easy, I think, to envision instances in which users will want more detailed information than balloon Help topics usually provide. For example, users might want some kind of conceptual overview; or, if the particular control is typically used as part of a complex task involving other parts of the interface, the user might want a complete procedure.[23] Thus, just as balloons themselves can be seen as a kind of layering, a more communicative extension of the user interface, there is much to say for layering balloon Help topics with supplementary information. This can be accomplished in various ways. For example, in some help systems there are hypertext jumps from balloon Help topics to topics providing supplementary information. What we want, I think, in balloon Help and in documentation generally is a “least first” strategy. In other words, users should be able to easily display the smallest amount of information that will, in most cases, suffice for the successful completion of the task; and, they should be able to quickly display more complete information if the need arises.

Other forms of interface-based Help

In addition to balloon Help, the category of interface-based Help includes status-line Help messages and command topics. Status-line Help messages consist usually of brief descriptions of the function of an interface element displayed—often in rapid succession and without any intention on the user’s part—at the bottom of a window as the user moves the pointer over various elements of the interface.[19] Because they do not appear near the element of interest, status-line Help messages are not obtrusive. On the other hand, if the user is not attuned to their presence, the user is apt to miss them altogether.

Command topics (Figure 10) are the online successor to printed command references. They are full-size Help topics that explain the function of each of the interface elements on a dialog box. Users generally access command topics from an open dialog box by pressing the F1 key or clicking a special Help button on the dialog box. Command topic are now facing stiff competition from balloon Help. Balloon Help topics are superior to command topics because users can display a balloon explaining just the interface element that interests them, whereas command topics require users to scan the command topic for the text pertaining to the element of interest. On the other hand, with command topics it is easy and natural to write an overview paragraph that explains or introduces the explanations of all the specific interface elements. Command topics are also favored by software companies because coding a single command topic for a dialog box requires much less effort than coding multiple balloon topics.


LapLink for Windows Help
File Edit Bookmark Options Help
Contents Search Back Print << >> Commands Procedures
Step-by-Step
Related Topics
Tips

Select By command (File Transfer only)

Select files and directories in the active file pane according to their similarities, using DOS wildcards and date ranges.

Option	Description
Computer	Displays the source computer.
Directory	Displays the current directory.
Filter	Enter the selection criteria according to similarities in name or extension, using DOS wildcards. You can enter multiple criteria.
Enable Date	Specify a date.
Oldest File	Enter a date and time range. The format is month, day, and year.
Newest File	Enter a date and time range. The format is month, day, and year.
OK	Select files according to the specified options.
Cancel	Close the dialog without completing the command.
Default	Restore the original settings: Filter is set to *.*; Enable

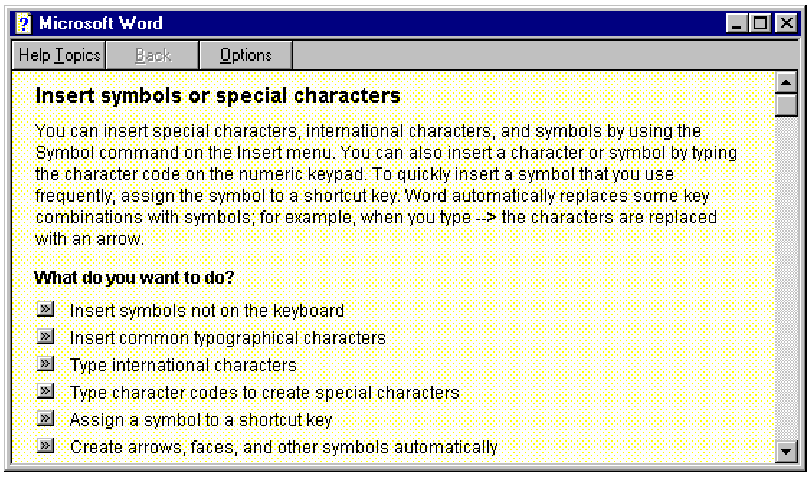
Figure 10. A command Help topic.

"Ghosted Topics": A Hybrid Help Design

There is always the potential for complex hybrids that borrow elements from more than one fundamental Help model. A very intriguing hybrid consists of the "ghosted topics" created by Microsoft for Word 7.0 and other applications in Microsoft Office 95 for Windows. These topics are "ghosted" because there seems to be a ghost at work behind the scenes.

If a user of Word for Windows goes to the online contents and chooses the entry “Finding text and formatting” (in the Editing branch of the contents hierarchy), something unusual happens: the edit menu drops from Word’s menubar, the commands on this menu highlight successively until the Find command is reached, and a What’s This? Help topic associated with this dialog box displays. What we have is a surprising synthesis of balloon Help and procedure Help. Although the user is looking at a standard balloon Help topic, the user accessed this topic from contents (or from the index) rather than directly from the interface. Also, the means with which this balloon topic is displayed provides kinds of information that users normally get from procedure topics. First, the entry in the contents (or index) “Finding text and formatting” is a brief statement of purpose. Traditionally, this entry more or less duplicates the title of a procedure topic (which is a brief statement of purpose). In the case of ghosted topics, this statement of purpose nicely complements the more specific purpose information usually found in balloon Help topics. In addition, by opening the Find dialog box automatically, this ghosted topic eliminates what is usually the first step of a procedure topic, “From the X menu, choose the Y command.” A Balloon Help topic, in effect, is functioning as a minimalist procedure topic.

In some instances, ghosted topics exhibit an additional behavior which borrows from performance support Help. When the Word user chooses “Inserting symbols or special characters,” from the contents (under "Typing") or from the index, the Word Help system, functioning as a form of coach Help, prompts the user to clarify what kind of symbols or special characters the user wants to insert (Figure 11). If the user indicates, by making a choice from a menu, that she wants to insert a symbol not on the keyboard, the Help system maintains this ongoing dialog by asking the user to indicate where in the document she wishes to insert the symbol (Figure 12). Finally, the Insert Symbols dialog box (which includes an array of available symbols) displays along with an explanatory What's This? topic display (Figure 13).



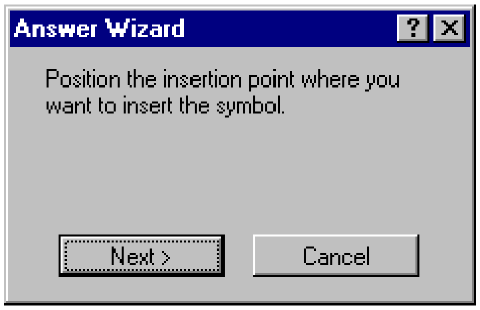
Insert symbols or special characters

You can insert special characters, international characters, and symbols by using the Symbol command on the Insert menu. You can also insert a character or symbol by typing the character code on the numeric keypad. To quickly insert a symbol that you use frequently, assign the symbol to a shortcut key. Word automatically replaces some key combinations with symbols; for example, when you type --> the characters are replaced with an arrow.

What do you want to do?

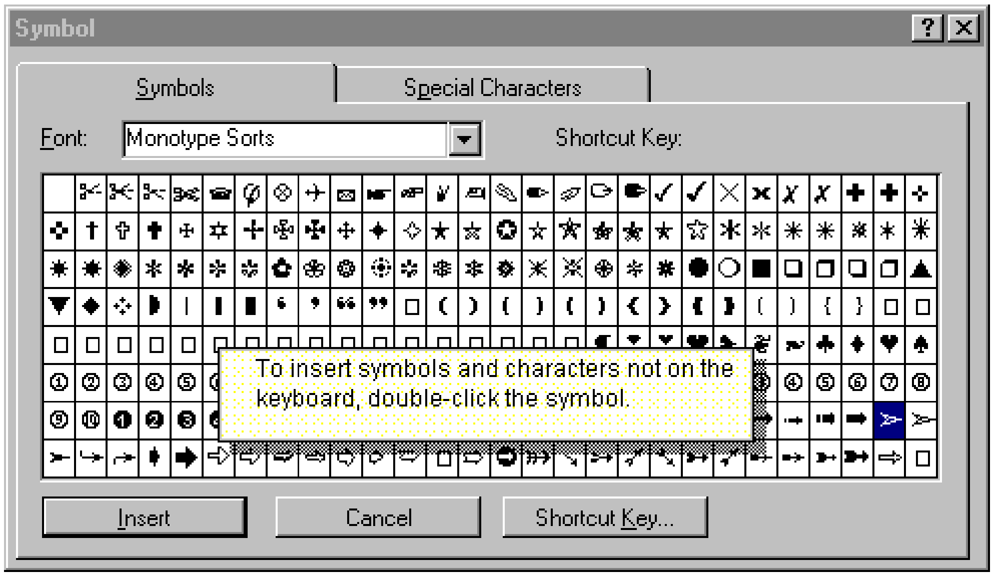
- Insert symbols not on the keyboard
- Insert common typographical characters
- Type international characters
- Type character codes to create special characters
- Assign a symbol to a shortcut key
- Create arrows, faces, and other symbols automatically

Figure 11. Prompting the user to clarify what should be inserted.



Position the insertion point where you want to insert the symbol.

Figure 12. Prompting the user to indicate where the insertion should take place.



To insert symbols and characters not on the keyboard, double-click the symbol.

Figure 13. The insert symbol dialog box and a What's This? Help topic.

Ghosted topics, unfortunately, have significant drawbacks. They are especially difficult to implement. Also, because they can only be implemented for certain tasks, some entries in the contents will display ghosted topics and others will not—an inconsistency that can distract users. For these reasons, ghosted topics are not likely to survive in their present form. Even so, these ghosted topics present us with a conceptually interesting, distinctly minimalist design with promise as a practical Help design.

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