

# **1 Learning to Do Windows**

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## **All GUIs Are Not Created Equal**

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Fifteen, even ten years ago, personal computers (PCs) were not the norm on everyone's desktop. But today, almost everyone has access to a PC, while improved technology has significantly improved PC performance. Ten years ago, most other operating systems, such as VMS (now OpenVMS) and UNIX, were almost entirely command-line driven. Today, most operating systems feature some sort of graphical user interface (GUI). But far from making a Windows-specific book about SAS obsolete, these changes in technology make such a book even more valuable.

Many people must switch between other operating systems and their PC several times a day. Some things remain constant, such as the basics of using a mouse. But file management, the available SAS system options, printing—all these tasks vary just enough from one GUI to another to confuse and annoy users, especially if they are new to the SAS System. So a handy, task-oriented reference devoted to the Microsoft Windows environment is an important productivity tool.

This chapter serves as an introduction to the Windows environment by defining some common terms, showing you how to take control of your mouse, showing you how to move and resize windows, and explaining how files are stored on the PC.

## **How Windows Works**

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Like most GUIs, the Windows graphical user interface includes windows, dialog boxes, icons, buttons, and other items. Usually, you use a mouse to interact with the GUI, although you also use the keyboard.

To work with applications under Windows, you use the Windows desktop, and in particular, the **Start** button. The **Start** button is a Windows component that organizes all your Windows

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applications into groups and makes interacting with the operating system easier. Some applications, such as Microsoft Paint and Microsoft Wordpad, come with Windows; other applications you install separately, such as the SAS System.

Windows lets you do several things at once. For example, you can print a file at the same time as you invoke an application. In particular, you can have several “instances” of a program open at once. Therefore, you can start multiple SAS sessions, all running at the same time.

### Note

Only the first SAS session started uses the default SASUSER.PROFILE catalog, which is where most customizations to the SAS windowing environment are stored. Unless subsequent SAS sessions are started with a different SASUSER system option that points to a different permanent location, these subsequent sessions will use a temporary profile catalog called WORK.PROFILE and will be unable to access previously saved customizations or save customizations for future use.

## Terms You Should Know

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Every operating system has its own jargon, and Windows is no exception. If you have used a different GUI on another operating system, some of the terms are familiar. But you should scan this section anyway, to see if there are discrepancies between how you understand a term and how this book uses it.

The glossary at the end of this book provides a more complete list of terms used with the SAS System for Windows. The following alphabetical list gives you a head start so that you can read this chapter without having to refer to the glossary constantly.

**active window:** the application or part of an application that is ready to accept input.

**application:** a program with its attendant windows. Examples include the SAS System, Microsoft Word, and Internet Explorer.

**click:** to press a mouse button once. Unless otherwise stated, click means to press the left mouse button.

**Clipboard:** a Windows component that is like an online pegboard—a place to store something until you need it again. Typically, the Clipboard is used to store text and graphics that you want to copy somewhere else.

**close:** to shut an individual window or shut down an entire application.

**desktop:** your screen, where all applications appear.

**dialog box:** a type of window that solicits information from you. Usually, you must supply this information before you can continue using an application.

**double-click:** to quickly press a mouse button twice in a row (usually the left mouse button).

**icon:** a pictorial representation of something, such as a window, file, or action.

**mouse:** the handheld device you use to select and manipulate applications and text. The mouse activates the mouse pointer on the screen.

**point:** to move the mouse pointer over an item on the screen, such as a menu choice, a word, or an icon.

**popup menu:** a context-sensitive menu that appears when you click the right mouse button.

**program group:** a collection of applications available from the **Programs** selection of the **Start** button menu. Examples of program groups include Accessories and SAS.

**right-click:** to press the right mouse button once. Usually, right-clicking displays a context-sensitive menu called a popup menu.

**Start button:** the button in the bottom-left corner of the screen, labeled “Start.” Clicking this button enables you to launch applications, alter configuration settings, access Windows help files, and perform other tasks.

**Taskbar:** a list of all open applications, located by default across the bottom of the Windows desktop.

## **Becoming Familiar with the Windows Desktop**

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When you start Windows, the Windows desktop appears. That may be all that happens, or other applications may start, depending on how your system is configured. The Windows desktop keeps a list of all open applications. This list is displayed across the bottom of the screen and is called the Windows Taskbar. The active application’s name is highlighted; to move to a different application, click the application’s name in the Windows Taskbar.



Figure 1.1 shows a sample Windows desktop. The Taskbar indicates that two applications are open: SAS and Microsoft Word. Your desktop may look slightly different from the one in Figure 1.1.

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**Figure 1.1 Sample Windows Desktop with Taskbar**



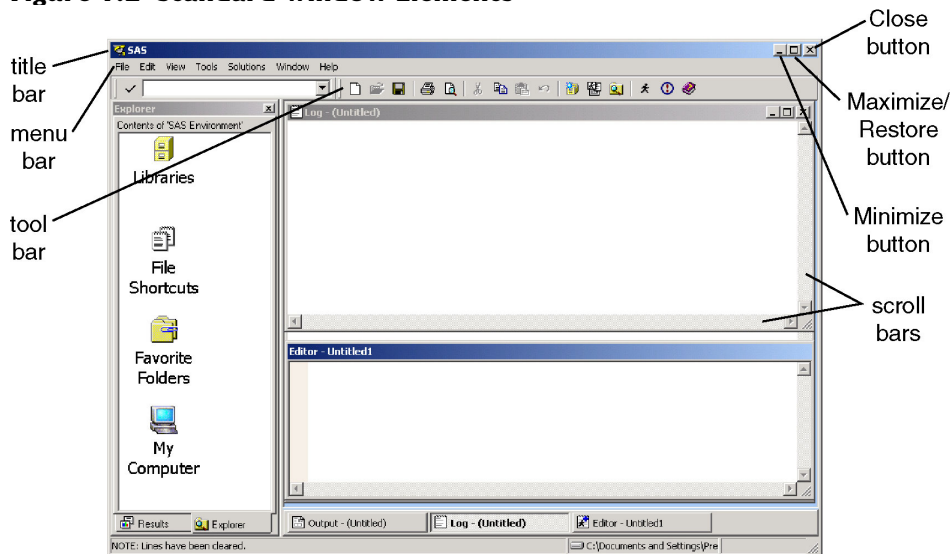
Besides the Taskbar, two more useful components of the Windows desktop are the **Start** button and the **Recycle Bin**.

-  The **Start** button is located in the bottom-left corner of the Windows desktop. You use it to start applications and manage your Windows session. See “Starting Applications” later in this chapter.
-  The **Recycle Bin** is a temporary storage area for deleted files (when you use the Windows Explorer or My Computer to delete them). See “Restoring Deleted Files” in Appendix 3 for more information.

## Windows Geography

The applications and windows you see as you work with Windows have many things in common. This section familiarizes you with the “lay of the land” under Windows. Figure 1.2 shows some of the standard window elements.

**Figure 1.2 Standard Window Elements**



A brief description of each element in Figure 1.2 follows; “Getting to Know the SAS System Interface” in Chapter 2 presents more details on these and other window elements specific to the SAS System.

**Title Bar:** Each window has a title bar that tells the name of the window. In this case, the title bar at the top tells you the application is SAS. Each individual window, such as the Log window and the Enhanced Editor window, also has a title bar. As well as providing the title of the application, the title bar is also the “handle” for moving windows, as discussed later in this chapter.

**Menu Bar:** If you are used to nonwindowing environments, you are familiar with giving operating system commands. In Windows, you often use the menu bar to issue these commands. For example, instead of typing “save example1.sas” on a command line, you click **File**, then click **Save**. While this may seem awkward at first, it does provide the advantage of not having to remember command syntax.

Use the following guides as you browse the menus:


- If a menu choice has an arrow after it, that means there is another layer of choices.
- If a menu choice has ellipsis points after it, that means clicking it opens a dialog box.


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- If there is no symbol after the menu choice, clicking that choice executes a command, such as SAVE.
- Shortcut keys are listed to the right of menu choices. Instead of using the menus, you can press the shortcut keys to achieve the same result. For example, CTRL-S is the shortcut key for SAVE.

**Tool Bar:** Another method of issuing commands under Windows is to use the graphical tool bar. For example, to save a file in the SAS System, click the icon that looks like a computer disk. Most applications, including the SAS System, allow you to define your own tools; this enables you to customize your environment and work efficiently.

**Scroll Bars:** Most windows provide both horizontal and vertical scroll bars. These enable you to move left, right, up, and down in the window. Clicking the up arrow moves the view up, and clicking the down arrow moves the view down. Similarly, clicking the left arrow moves the view to the left, and clicking the right arrow moves the view to the right. To move larger distances, click in the scroll bar area instead of on the arrows. “Scrolling” in Chapter 3 provides more detailed information on using scroll bars.

 **Minimize Button:** Click the Minimize button (the left-most of the three buttons in the top-right corner of a window) to cause the window to shrink to an icon. If you minimize an entire application, the window disappears from the desktop; to restore the application, click its name in the Windows Taskbar. Typically, only the active window shows the Minimize button.

 **Maximize/Restore Button:** The middle button in the top-right corner of the window does double duty. If it appears as a single box (as in Figure 1.2), clicking it causes the window to take up the whole screen (that is, maximize). If it appears as two layered boxes, clicking it causes the window to return to the size it was before it was maximized. Typically, only the active window shows the Maximize button.

 **Close Button:** The Close button is the right-most button in the top-right corner of a window, and it contains an X. Clicking it closes the application or window. Typically, only the active window shows the Close button.

## Taking Control of Your Mouse

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While using Windows with only a keyboard is possible, it is more efficient to use a mouse. But often, people unfamiliar with the mouse are frustrated by having the pointer move too quickly, not being able to double-click properly, and other problems caused by lack of practice. However, using the mouse does not have to be a rat race! Windows provides a way to slow the mouse down, adjust the double-click rate, and in general let you take control of your mouse.

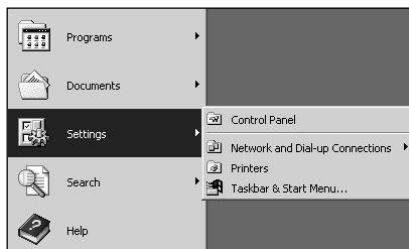
**Using the Mouse Buttons:** Most mice have two or three buttons. The left button is used to “click” on things—icons, filenames, options, and so on. The right mouse button is reserved for special tasks, such as opening popup menus. If your mouse has a middle button, you can pretty much ignore it, although some software applications (including the SAS System) let you associate commands with the middle mouse button.

**Note**

If you use a left-handed mouse, the left and right buttons are switched. The “left button” is always the button under your index finger.

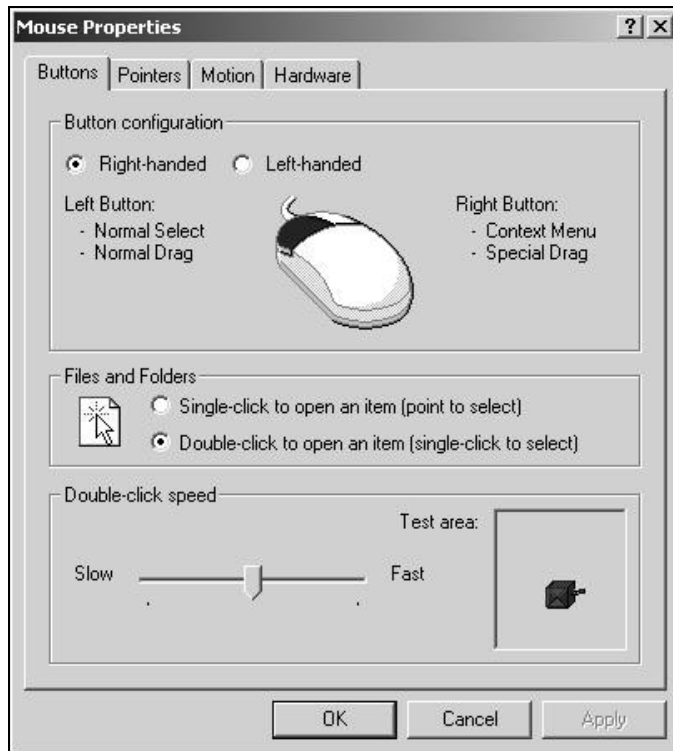
More advanced types of pointing devices, such as trackballs, can also be used with the SAS System.

**Adjusting How Your Mouse Works:** To adjust how your mouse works, follow these steps:



1. Click the **Start** button, then click **Settings**. When the second-level menu appears, click **Control Panel**.
2. When the Control Panel appears, double-click the **Mouse** icon. The Mouse Properties dialog box opens. Figure 1.3 shows a sample Mouse Properties dialog box.

**Figure 1.3 Sample Mouse Properties Dialog Box**



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3. There are four tabs in the Mouse Properties dialog box. The top tab is labeled **Buttons**. On this tab, you can adjust the mouse's double-click speed and the left- or right-handed configuration of your mouse.
4. Many Windows users prefer a slower double-click speed. In the **Double-click speed** area, place your mouse pointer over the slider, hold the left mouse button down, and drag the mouse pointer so that the slider moves to the left (toward **Slow**). Release the mouse pointer and double-click the jack-in-the-box icon (or other icon) in the **Test** area to see if you like the new speed. If your double-click is successful, the icon shows a jack-in-the-box pop out. Double-clicking again closes the jack-in-the-box.
5. If you are left-handed, click **Left-handed** in the **Button configuration** area. The text next to the mouse explains what function each mouse button has. If you choose this option, the button under your left index finger (originally the "right" mouse button) becomes the "left" mouse button and vice versa.
6. To slow your mouse down so that you can follow it more easily with your eyes, click the **Motion** tab at the top of the Mouse Properties dialog box. In the **Speed** area, place your mouse pointer over the slider, hold the left mouse button down, and drag the mouse pointer so that the slider moves to the left (toward **Slow**). Release the mouse pointer; now move the mouse pointer, to see if you like the new speed.
7. To make the mouse pointer easier to find on the screen when you move the mouse, you may want to select the **Display pointer trails** option.

Depending on your mouse driver (the software that controls your mouse), you may see other options; explore the other tabs in the Mouse Properties dialog box to see what options are available to you. See Appendix 4 for information on making the mouse pointer bigger.

When you are happy with your selections, click **OK**. This closes the Mouse Properties dialog box. To close the Control Panel, click **File** → **Close** in the Control Panel menu.

As you become more adept with your mouse, return to the Mouse Properties dialog box and adjust the settings again to fit your new skill level.

**Using Your Mouse to Communicate with Applications:** Your mouse is the primary method of communicating with Windows applications, although you also use function keys and keyboard sequences. You need to master several skills with the mouse:

- |                 |   |
|-----------------|---|
| <b>Pointing</b> | Pointing involves moving the mouse pointer until it is directly on top of something, such as an icon or a menu choice. In some cases, pointing causes Windows to take an action. For example, in the <b>Start</b> button menu, simply pointing (without clicking) to a menu item opens the submenu. |
| <b>Clicking</b> | Clicking involves pressing and releasing the left mouse button once. Usually, you click an item to select (that is, highlight) the item.  |



- Right-clicking** Right-clicking involves pressing and releasing the right mouse button once. Usually, you right-click an item to display a context-sensitive menu.
- Double-clicking** Double-clicking involves pressing the left mouse button twice in rapid succession. Usually, you double-click an item to activate the item (such as starting an application from an icon).
- Dragging** Dragging involves holding the mouse button down while you move the mouse around. Usually, you drag an object to move it (such as moving window borders or text in a text editor).

## Learning the Basic Survival Kit

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There are several things you should know before you start using Windows extensively. For example, how do you start applications? When you are done with them, how do you close them? What if you want to use a new application but do not want to close the others? Learning the answers to these and a few other questions helps you work more efficiently under Windows.

**Starting Applications:** An easy way to start an application is to use the **Start** button menu. Clicking the **Start** button displays a first-level menu, shown in Figure 1.4.

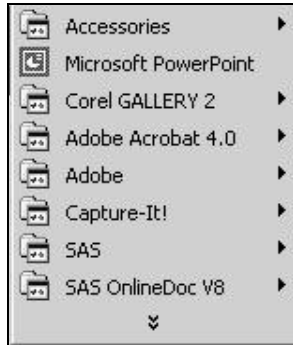
**Figure 1.4 Start Button Menu**



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To start an application, such as the SAS System, click the **Programs** item in the **Start** button menu. A second menu appears, a sample of which is shown in Figure 1.5.

**Figure 1.5 Programs Menu from the Start Button**




This menu shows the program groups available on your system, such as **Accessories** and **SAS**. Your desktop may show other groups, such as **Microsoft Office Tools**, depending on what software is installed on your PC.

### Note

Most of the time, merely placing the mouse pointer over the text is sufficient to select it in a menu, but not always. And clicking doesn't hurt anything. Therefore, in many places, this book says "click **Programs**" or gives other similar instructions.

Program groups in the **Programs** menu that are followed by a right arrow contain subgroups. Clicking the main program group displays the subgroup. Take a moment to investigate all program groups on your desktop, to see what applications are available to you. To close the **Programs** menu without starting an application, click outside the menus (or press ESC).

-  **Closing Applications:** The easiest way to close applications is to click the Close button. This is the button marked with an X, in the top-right corner of an application's main window. Sometimes, you also have to confirm that you want to exit the application. (For example, by default the SAS System prompts you with the question "Are you sure you want to end the SAS session?")

Two other methods of closing an application include

- clicking the **File** choice in the application's menu bar, then clicking **Exit** or **Close**
- right-clicking the application's name in the Taskbar and clicking **Close**.

**Note**

In the SAS System, an individual window's Close button (along with the Minimize and Maximize/Restore buttons) is not visible until you make the window active by clicking in it.
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**Managing Several Open Applications at Once:** One of the nice things about Windows is that it lets you use several applications at the same time. But you have only one screen, so the open windows are layered. The window that is "on top" is usually the active window. To make another window active, you must somehow get to it.

Suppose you have started the SAS System, and now you want to open Microsoft Word, without ending your SAS session. Follow these steps to open Word:

1. Click the **Start** button.
2. Click **Programs** in the **Start** button menu, then click Microsoft Word. (Your menu path to the Microsoft Word program may be somewhat different, depending on how Word was installed.)

Now two applications are open at once: the SAS System and Word.


Here are some ways you can return to your SAS session:

- Click the **SAS** icon on the Windows Taskbar.
- Press ALT-ESC to toggle through all open applications.

**Using Dialog Boxes:** To communicate with most Windows applications, you must use dialog boxes. These are interactive ways to give commands and information to an application. When you adjusted your mouse settings, you were using a dialog box. Dialog boxes have many features in common, such as the following:

- Clicking **OK** or **Close** applies your changes and closes the dialog box.
- Clicking **Cancel** closes the dialog box without having any other effect.
- Sometimes you can type a value into a field; this is called a *text-entry field*.
- If there are several choices for a field value, clicking the down arrow next to the field displays a list of choices. Click one of the choices to change the field value. This window component is called a *drop-down list box*.
- Other times, the entire list of choices is displayed in a *list box*; use the scroll bars to navigate the list. Click a choice to select it.

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- If there are options that can be turned on or off, clicking the box or button next to the option toggles its value. If a box has an “x” in it, or if a round button is filled in, the option is on. The difference between check boxes (square boxes) and radio buttons (round buttons) is as follows:
  - You can choose several options in a list of check boxes.
  - Options with radio buttons are mutually exclusive.
-  Many dialog boxes offer a context-sensitive help button near the top-right corner of the dialog box. Clicking this button changes the mouse pointer to an arrow with a question mark beside it. Now click the part of the dialog box you want more information about. The help information is displayed in a window. Press ESC to close the help window. Occasionally, instead of the context-sensitive help button, you may see a button labeled **Help**.

In dialog boxes that list files, you may see three useful icons (among others). Click the icon to activate it.




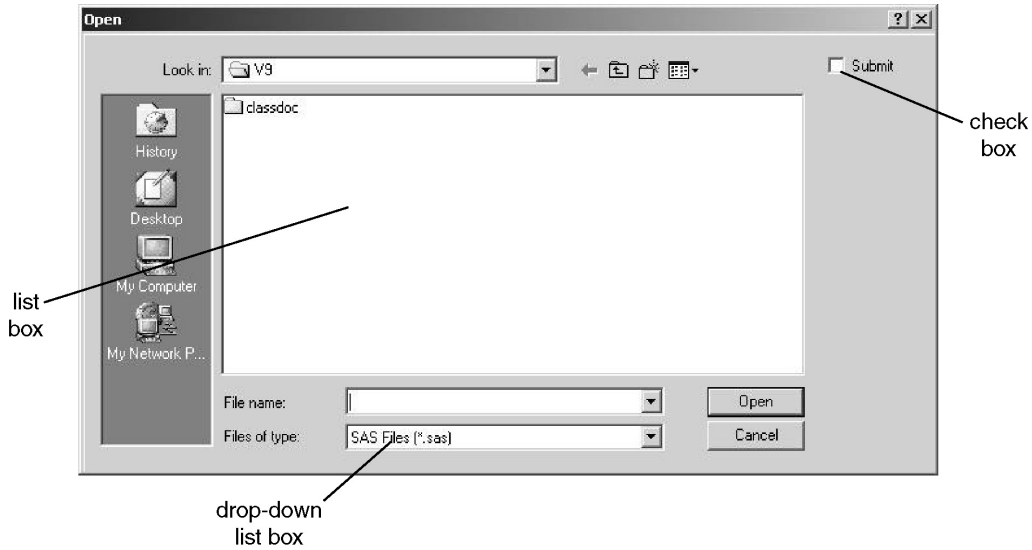
-  Move up a level in the folder hierarchy.
-  Create a new folder.
-  Customize the view, such as showing file details or changing to large icons.

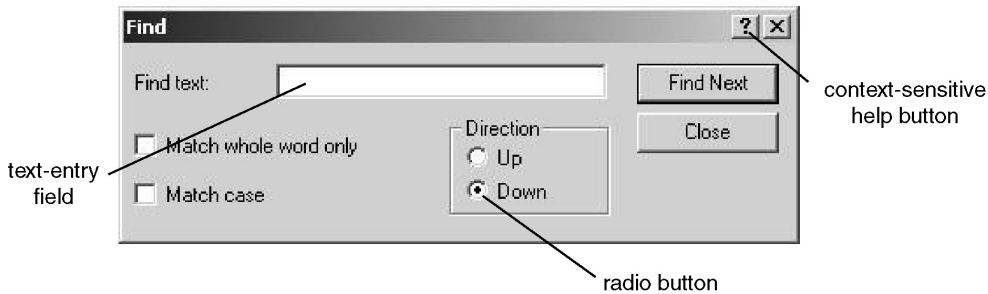
Figure 1.6 shows an example dialog box that displays many of these features.

Figure 1.7 shows another dialog box with more features.

**Figure 1.6 Standard Dialog Box Features**



**Figure 1.7 More Standard Dialog Box Features**



**Controlling How Programs Work:** The icons you see on the desktop are not magic. They are pictorial representations of operating system commands and command options. When you install an application such as the SAS System, the installation utility adds the icon to the appropriate program group in the **Programs** menu and associates certain commands and options with the icon. These commands control the location of the program’s executable file (such as SAS.EXE) and other aspects of running the program. This collection of commands constitutes the application’s “properties.”

You can change an application’s properties by using the Properties dialog box. “Altering the Properties of the SAS System Icon in the Windows Start Menu” in Chapter 11 gives some examples of how to change SAS System properties.

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**Moving and Resizing Windows:** Sometimes the default size or position of a window is not satisfactory. You've already learned about the Minimize and Maximize buttons, but you can also move windows or cause them to shrink and grow.

To move a window, place the mouse pointer in the title bar of the window. Now press the mouse button down and hold it down while dragging the mouse. The entire window follows the mouse pointer. Release the mouse button when the window is where you want it.

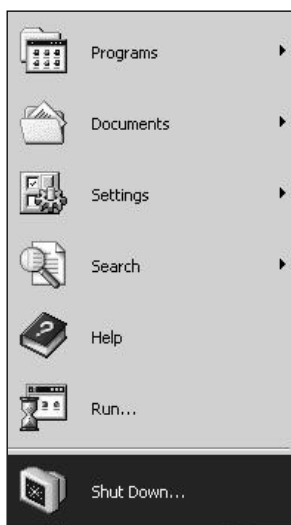
To resize the window, place the mouse pointer on the edge of the window. The pointer turns into a horizontal, vertical, or diagonal double-headed arrow (depending on whether the mouse pointer is positioned on a side, the top or bottom, or a corner of the window, respectively). Hold the mouse button down and drag the mouse—the window edge follows the pointer—until the window is the size you want. Resize a window in both the vertical and horizontal directions at once by placing the mouse pointer over a corner of the window. In this case, the pointer turns into a diagonal double-headed arrow.

To practice resizing windows, double-click the **Recycle Bin** icon on the Windows desktop. Now make the Recycle Bin window narrow, then tall, then back to its original size. Close the Recycle Bin by clicking its Close button.

### Note

You cannot resize a maximized window except to minimize it.

**Shutting Down the Windows Environment:** You can choose to leave Windows running all the time, even when you are away from your desk. Or, you may want to turn your computer off. But you should never turn off your computer without properly shutting down Windows.



To shut down Windows, click the **Start** button, then click **Shut Down** (at the bottom of the **Start** button menu). A dialog box appears, asking what type of shut-down you want to use. Click the down arrow under **What do you want the computer to do?** and select **Shut down**. Now press ENTER. Windows shuts down and turns your computer off.

**Caution**

If you shut the computer down without closing your applications, you could lose work, corrupt your Windows profile, destroy data files, and leave files in an open state that may not allow you to use them next time you start your system. Shutting down the computer without first closing your SAS session prevents the SAS System from closing the WORK files, as well.

**Handy Keyboard Shortcuts for Windows**

Table 1.1 provides a list of handy keyboard shortcuts for performing tasks in the Windows environment. Refer to this table as you read the rest of the book. If you do not want to use the mouse for a task, use the keyboard shortcut listed in the table.

**Table 1.1 Keyboard Shortcuts**

Keyboard Shortcut	Action
ALT-ENTER	Opens the Properties dialog box for an icon
CTRL-ESC	Opens the <b>Start</b> button menu
ESC	Closes the <b>Start</b> button menu
ALT-ESC	Toggles through all open applications
ALT-TAB	Toggles between the two last-used applications
TAB	Moves the cursor from field to field in dialog boxes
SHIFT-TAB	Moves the cursor backward through fields in dialog boxes
BACKSPACE	In file list windows, such as the SAS Explorer, Windows Explorer, or Open dialog box, moves you up one level in the file hierarchy
Windows button + E	Opens the Windows Explorer Note: Not all keyboards have a Windows button.

Menus also provide a type of keyboard shortcut, called hotkeys. These are the underlined letters you see in each of the menu choices. If a menu is open, pressing the hotkey is equivalent to clicking a menu choice.

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To open a menu without using the mouse, press the ALT key. This highlights the first item in the menu bar. Once the highlighting appears in the menu bar, use your arrow keys to move to the menu item you want, and press ENTER to execute the command. Or, type the letter that is underlined in the menu.

### Note

The hotkey is not always the first letter of the menu choice. Also, hotkeys are not visible until you press ALT to move the keyboard focus to the menu bar.

At the end of Chapter 7 there are more keyboard shortcuts listed that are specific to the SAS System.

## Understanding How Files Are Named and Stored

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**What's New:** By default, the SASUSER data library corresponds to C:\Documents and Settings\Windows-user-name\My Documents\My SAS Files\9.1 for Windows 2000. In the NT environment, the SASUSER data library corresponds to C:\winnt\profiles\Windows-user-name\Personal\My SAS Files\9.1.

The WORK data library corresponds to C:\Documents and Settings\Windows-user-name\Local Settings\Temp\SAS Temporary Files\\_TD#### for Windows 2000. In the NT environment, the WORK data library corresponds to C:\winnt\profiles\Windows-user-name\Local Settings\Temp\SAS Temporary Files\\_TD####.

Many user-supplied SAS names, such as tables, catalog entries, and even informats and formats, can have long names. File references and library references, however, are restricted to eight characters.

If you are coming from a UNIX or OpenVMS background, you are familiar with the hierarchical structure of folders, subfolders, and files under Windows. But if you are more familiar with z/OS, you may be used to a different file structure. It is important to understand how Windows files are stored and named before you begin to use SAS software to create and manage files.

### Note

The terms *folder* and *directory* are synonymous.

**Understanding the Windows File Structure:** Under Windows, individual files have a filename and an extension. Think of a file as a collection of information, where the filename describes the information and the extension describes the format of the information. For example, MEMO.TXT is a memo and is in plain ASCII text format. HOUSE.TIF is a picture of a house in the TIFF bitmap format.



Windows supports long filenames—that is, you can use a total of 255 characters for the filename. In addition, filenames and extensions can contain spaces, quotation marks, and other characters not allowed in filenames under many other operating systems.

Examples of valid filenames are CONFIG.SYS, DECEMBER'S REPORT.TXT, and JOAN & TOM.DOC. The following characters are not allowed in filenames: / \ : ; ? " < > | \*.

**Understanding Truncated Filenames:** If you intend to use files with Windows applications that do not support long filenames, or with other operating systems that do not support long filenames, be aware that sometimes the long filename may be truncated to eight characters, replacing certain characters (such as commas and spaces) with underscores ( \_ ) and extra characters with a tilde ( ~ ) and a numeral. Even some Windows dialog boxes and applications still show the truncated name instead of the full name.

Table 1.2 shows four examples of long and truncated filenames (assuming the files are stored in the same folder). For example, if you issue the DIR command in a command-prompt window, the files are listed with their truncated names.

**Table 1.2 Long and Truncated Filenames**

Long Name	Truncated Name
DECEMBER'S REPORT.TXT	DECEMB~1.TXT
DECEMBER'S BILLS.TXT	DECEMB~2.TXT
THAT'S ALL.TXT	THAT'S~1.TXT
X,Y.TXT	X_Y~1.TXT

The last file, X,Y.TXT, has the ~1 added, even though the filename is short. This is because of the substitution of the underscore for the comma.

**Note**

Windows supports long file extensions (that is, they are not limited to three characters). However, when a filename is truncated, the long file extension is truncated to the first three characters.

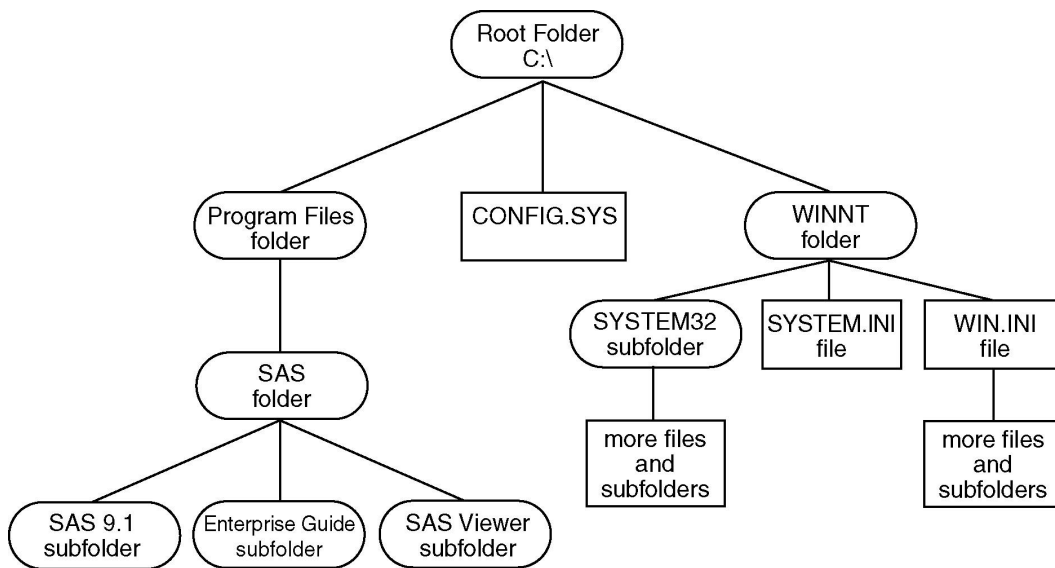
**Understanding Files and Folders:** Files are grouped together in *folders*. (In DOS and early versions of Windows, the term *directory* was used. Directory and folder are synonymous.) Folders can contain subfolders as well as files. For example, you might have a folder called BILLS, and

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within that folder you might have some miscellaneous files along with two subfolders, PAID and OVERDUE. In turn, these subfolders might contain files for each individual bill.

The root folder is the top-level folder that contains all other subfolders and files. Usually, this is called C:\ and is the default folder when you boot your PC. The C:\ folder can contain many subfolders, which can contain other subfolders, and so on. Figure 1.8 shows a sample folder hierarchy.

**Figure 1.8 Sample Folder Hierarchy**



**Understanding Drives:** Another concept you need to understand is drives. While the root folder is referred to as C:\, the drive is referred to as C:. Your computer may have several drives—the hard drive might be C:, the 3 1/2" floppy drive might be A:, and the CD-ROM drive might be D:. If you are on a network, you probably have access to many drives. To find out how your system is organized, use the Windows Explorer, which is discussed in Appendix 3.

**Understanding Common File Extensions:** Some file extensions are associated with particular applications. For example, files with an extension of .SAS are SAS programs, while files with a .DOC extension are usually Microsoft Word files. Table 1.3 gives some common file extensions.

**Table 1.3 Common File Extensions**

External Files		SAS 9.1, SAS 8, or SAS 7 Files	
Extension	File Type	Extension	File Type
CFG	configuration	SC2, SAS7BCAT	SAS catalog
DAT, CSV	raw data	SI2, SAS7BNDX	SAS data file index
HTM, HTML	HTML	SA2, SAS7BACS	SAS access descriptor
LOG	SAS log	SV2, SAS7BVEW	SAS data view
LST	SAS output	SS2, SS7, SAS7BPGM	SAS stored program
PDF	Portable Document Format	SAS7BITM	item store file (SAS Registry)
RTF	Rich Text Format	SAS7BDMD	data mining database file
SAS	SAS code	SD2, SAS7BDAT	SAS table
TXT	ASCII text	SM2, SAS7BMDB	multidimensional database file

**Using Wildcard Characters:** Like most operating systems, Windows accepts wildcard characters in filenames when you are performing file maintenance (such as deleting, moving, or searching).

Table 1.4 lists the wildcard characters Windows accepts.

**Table 1.4 Wildcard Characters**

Character	Meaning
*	replaces any number of characters
?	replaces a single character

To show how these wildcard characters work, here are a few examples:

PROG\*.SAS finds PROG1.SAS and PROGRAM2.SAS

PROG?B.SAS finds PROG1B.SAS but not PROG11B.SAS

REVENUE.\* finds REVENUE.SAS and REVENUE.DAT

## 20 Painless Windows: A Handbook for SAS Users

**Understanding How SAS Files Are Stored under Windows:** As a SAS user, you already know about the various types of SAS files and that these files are stored in SAS data libraries. Under Windows, the concept of a SAS data library is loosely analogous to that of a folder containing SAS files, with the addition of the concept of SAS engines. An example will help illustrate this.

Suppose you have two folders, C:\REPORTS and C:\INCOME. In the REPORTS folder, there are some SAS 9.1 SAS tables. In the INCOME folder, you also have SAS 9.1 SAS tables but also some Version 6 SAS tables. To access the two types of SAS files in the INCOME folder, you would submit two SAS LIBNAME statements pointing to this folder. One of the LIBNAME statements would have a V9 engine associated with it, while the other would have a V6 engine associated with it.

### Note

In this book, the following terms are used interchangeably: “table” and “data set”; “row” and “observation”; and “column” and “variable.”

You can also concatenate several folders into one SAS data library. See Chapter 9 for more information on managing SAS data libraries.

**Knowing the Important Files and Folders:** Certain files, folders, and subfolders are important to you as a SAS software user. Table 1.5 gives some of these and briefly describes their purpose.

**Table 1.5 Important SAS Files and Folders**

Default Filename (Windows 2000)	Purpose
SAS.EXE	is the <b>SAS executable file</b> (loader program).
SASV9.CFG	contains the <b>default SAS System options</b> , including those set by the SAS System INSTALL utility. You can have alternate SAS configuration files with different names and option settings.
AUTOEXEC.SAS	contains <b>start-up SAS statements</b> you want to execute when you begin a SAS session.
C:\Documents and Settings\Windows-user-name	is the default <b>SAS System current folder</b> , when started from the <b>Start</b> button menu.
C:\Documents and Settings\Windows-user-name\My Documents\My SAS Files\9.1 subfolder	corresponds to your <b>SASUSER SAS data library</b> , and contains your SAS profile catalogs, key definitions, tool definitions, and so on.
C:\Documents and Settings\Windows-user-name\Local Settings\Temp\SAS Temporary Files subfolder	contains your <b>WORK SAS data library</b> . The WORK library for a SAS session is created as a subfolder of this subfolder, in the form <b>_TD####</b> .

**Note**

The pathnames in Table 1.5 are the default or most common locations; many can be changed during SAS installation or subsequently. Also, the values shown in Table 1.5 are for the Windows 2000 environment; values for other versions of the Windows operating system may be somewhat different.

**Using Filenames in SAS Statements and Commands:** When you type the names of folders, subfolders, and files in SAS statements, commands, and dialog boxes, separate the folder name, subfolder name, and filename with a backslash. For example, the following INCLUDE command references a file named MEDICALREPORT.DAT in a folder called MYDATA, which is a subfolder of the root folder on the C: drive:

```
INCLUDE 'C:\MYDATA\MEDICALREPORT.DAT'
```

This is called the full pathname for the file, which states explicitly where the file is stored. When in doubt, specify the full pathname for files; while there are rules for what constitutes the folder and file extension default, it is always safe to specify the full pathname.

**Defining File Shortcuts and Library References:** One of the most common uses of the full pathname is using the FILENAME and LIBNAME statements to define file shortcuts (also called filerefs) and library references (often referred to as librefs) in your SAS programs. Here is an example of each of these statements, using the full pathname for the file or folder:

```
/* Points to a specific external file. */
filename misc 'c:\misc\qtr1.dat';

/* Points to a specific folder containing SAS files. */
libname inv 'c:\sas\invoices';
```

**Note**

If the filename contains spaces or other punctuation such as a single quotation mark, use double quotation marks in SAS statements such as FILENAME and LIBNAME statements.

**Testing Your Survival Kit**

Now that you understand a little bit about how Windows works, you are ready to see if you can “do Windows.” Try the next chapter, which walks you through most of the fundamental tasks involved in using Base SAS software. After you’ve done the first two or three exercises, you’ll see that “doing Windows” is not so hard after all. And even if you never like Windows, at least you will not feel like you’re looking through frosted glass while you work.

