

CHAPTER

2

Using the SAS System and SAS/ASSIST Software

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Overview

This chapter explains how to

- invoke the SAS System and SAS/ASSIST software
- access and move around SAS/ASSIST software using menus, function keys, the index, Help, and buttons
- delete and re-create sample tables
- perform frequently used SAS/ASSIST operations
- exit SAS/ASSIST software and the SAS System.

Note: The illustrations and examples used in this book were created with Version 7 of SAS/ASSIST software under the UNIX operating environment. Your screens may look somewhat different from the illustrations in this book. Δ

Invoking the SAS System

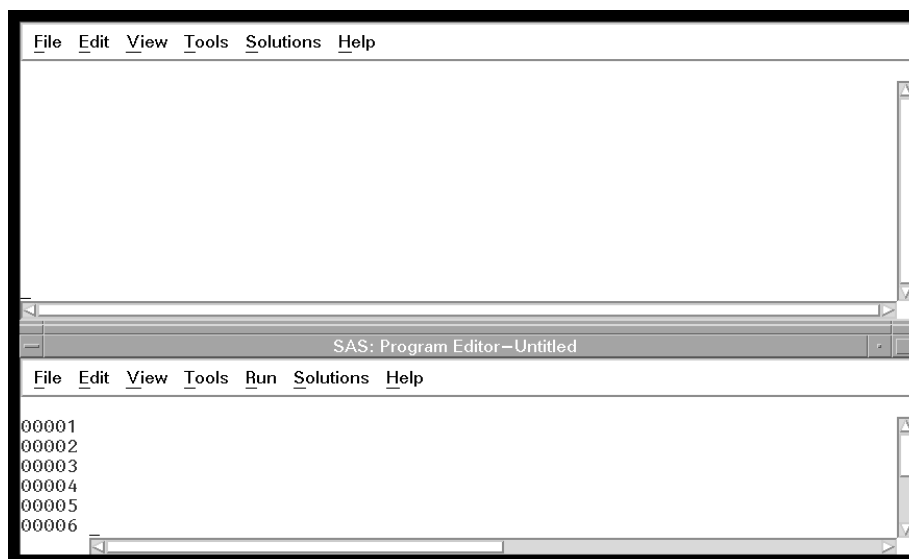
To invoke the SAS System, follow these steps:

- 1 Log on to your operating environment.
- 2 Type the command to access the SAS System (for example, **SAS**) and press ENTER. Contact the SAS Support Consultant at your site for the specific command used at your site to access the SAS System.

Depending on your operating environment and the SAS System configuration at your site, some or all of the following windows appear:

- Output Window
- Log Window
- Program Editor Window
- SAS Explorer Window
- Results Window
- ToolBox (or tool bar)

Display 2.1 SAS Windowing Environment



Note that some windows may be “hidden” beneath others. To see the other windows, use one of the following methods, depending on your operating environment:

- Use the **View** menu to select other windows by name.
- Use the PREVWIND and NEXT function keys to bring windows into view.
- Use your mouse to click on the desired window.

To get more information about any of these windows, select **Help** from the window’s menu bar, and then select **Using This Window**.

Selecting Items

When instructions in this book direct you to “select” an item, use any of the methods listed below according to your operating environment:

- If you have a mouse, point to the item and click on it.
- Press TAB or BACKTAB to move the cursor to the item, and then press ENTER.
- Use the arrow keys to position the cursor on the item, and then press ENTER.

Entering Commands

You can enter commands within the SAS System by using one of three methods:

- selecting from menus
- using function keys
- typing the commands at the **Command** `====>` prompt or in the ToolBox command window.

Menus and function keys are described in the following sections. Typing commands at the **Command** `====>` prompt or in the ToolBox command window is not discussed in this book. Contact the SAS Support Consultant at your site for further information about using commands with the SAS System.

Note: This book uses menus for all examples. Δ

Using Menus

A *menu* is a list of functions, actions, or commands. *Pull-down menus* appear below items that you select in the *menu bar* at the top of a screen. *Pop-up menus* can appear anywhere in a screen. In SAS/ASSIST software, you activate pop-up menus by selecting the buttons in the WorkPlace menu. Each menu has items that you can select to perform certain actions.

Note: Some actions are also available through the function keys. You can use either the menus or the function keys to perform these actions, whichever you prefer. Performing an action using function keys often requires fewer keystrokes than performing the same action using menus. See “Using Function Keys” on page 15 for further information about function keys. Δ

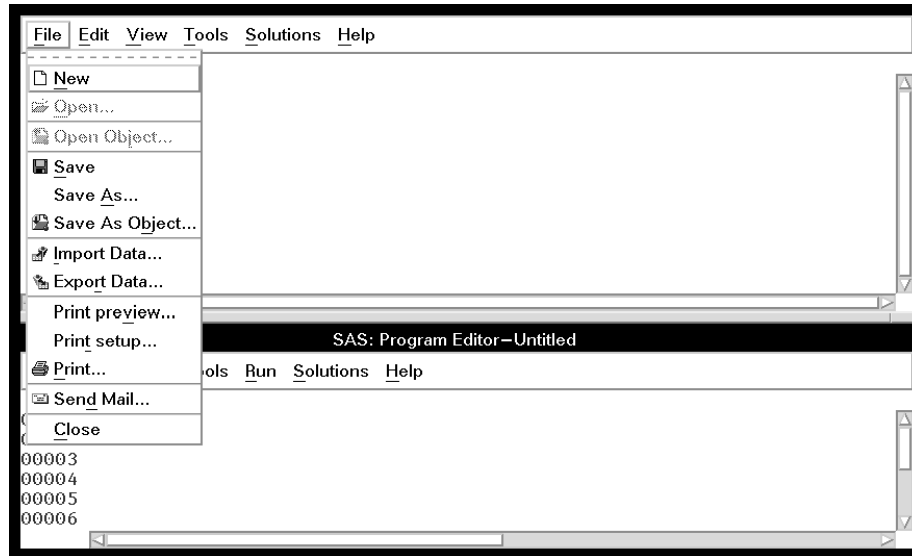
1 To use menus, do one of the following:

- If you have a menu bar at the top of your SAS windows, continue to the next step.
- If you have a **Command** `====>` prompt at the top of your SAS windows, you need to invoke the menu bar to follow the examples in this book. To invoke the menu bar, type **pmenus on** at the **Command** `====>` prompt and press ENTER. The menu bar replaces the command line.
- You can also use a function key defined as **COMMAND** or **PMENU** to switch back and forth between a command line and menu.

Note: For Microsoft Windows and OS/2 users, your menu bar is at the top of the main SAS System window. It changes according to which SAS window (Program Editor, Log, Output, and so on) is active. Click on the Program Editor window to activate it. Δ

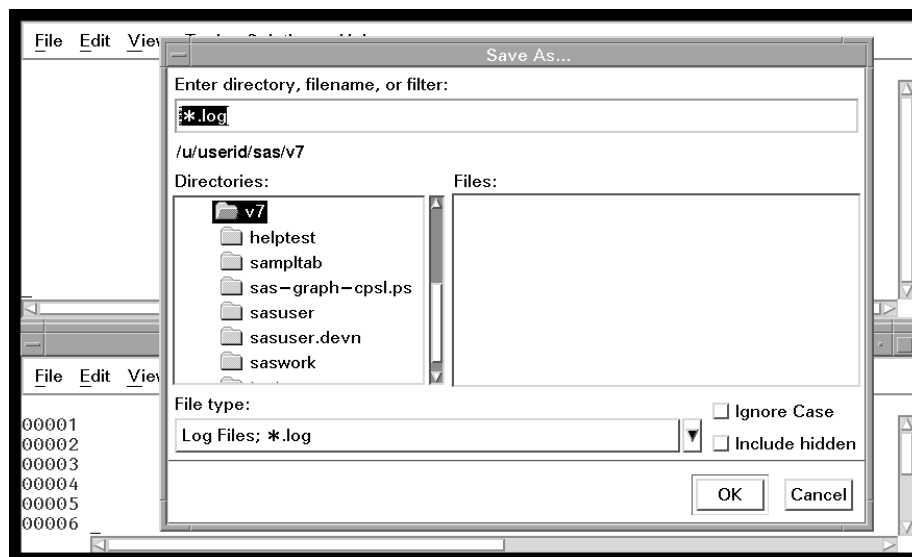
2 To use an item on the menu bar, select it. For example, select **File** from the Program Editor menu bar. The **File** menu appears.

Display 2.2 File Menu

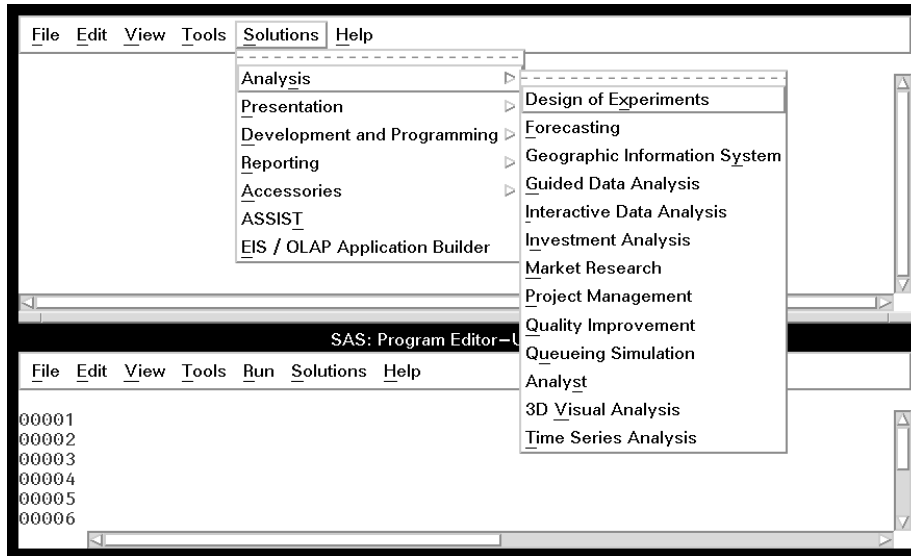


- 3 Select the action you want to perform. If an action has dots next to it, when you select the action, another window appears. For example, select **Save As...** from the **File** menu. The Save As window appears.

Display 2.3 Save As Window

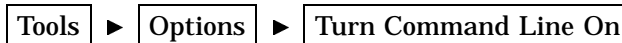


- 4 To exit a window, select the appropriate button, for example, **Cancel**, **OK**, **Close**, or **Goback**. For this example, select **Cancel**.
- 5 If an action has a triangle or an arrow next to it, when you select the action, another menu appears. This feature is called *cascading menus*. For example, select **Solutions** and then **Analysis**. A menu of various SAS System-related options appears.

Display 2.4 Cascading Menus

- 6 To exit a menu, use a mouse to point to a location outside the menu box, and then click the mouse button; or, use the arrow keys to position the cursor anywhere outside the menu box, and press ENTER. Make sure the cursor is not on another item on the menu bar or on an item on the window, or else that item will be selected when you click the mouse button or press ENTER.

If you want to return to a command line from the menu bar, follow this selection path:



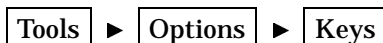
The menu bar is replaced by a **Command** ===> prompt.

Using Function Keys

Function keys are keyboard keys that you can define to perform different actions. When you are using SAS/ASSIST software, the function keys help you to perform certain actions quickly.

Note: Some actions are also available through the menus. You can use either the menus or the function keys to perform these actions, whichever you prefer. Performing an action with function keys often requires fewer keystrokes than does performing the same action with menus. While the examples in this book use menus, you can use function keys instead. Δ

- 1 To see how each key is defined when you first access the SAS System, follow this selection path from any SAS window:



A list of function keys and their corresponding actions appears.

Display 2.5 KEYS Window

Key	Definition
F1	help
F2	keys
F3	submit
F4	pgm; recall
F5	rfind
F6	rchange
F7	backward
F8	forward
F9	
F10	
F11	
F12	
Shft F1	
Shft F2	
Shft F3	
Shft F4	
Shft F5	
Shft F6	
Shft F7	
Shft F8	
Shft F9	

Note: The default function key assignments vary among different operating environments. Your KEYS window may look different from the one pictured here. Δ

- 2 If some function keys are not visible in the window, use the scroll bars or the FORWARD and BACKWARD function keys to view all the key settings. Note which keys correspond to certain actions. Actions that you need to perform often include
 - END, which closes the window. Using a key defined as the END command can be faster than selecting **C**lose from a menu.
 - FORWARD, which shows the next screen of data in the current window.
 - BACKWARD, which shows the previous screen of data in the current window.
 - RIGHT, which shows the data to the right of the current window.
 - LEFT, which shows the data to the left of the current window.
 - PREVWIND, which shows the previously viewed SAS window.
 - NEXT, which shows the next SAS window. You can use PREVWIND and NEXT to view the various SAS windows.
 - PMENU (or COMMAND), which toggles between the menu bar and the command line. If the menu bar is being used, this function key invokes the command line. If the command line is being used, this function key invokes the menu bar. Note that if SAS/ASSIST software is active, the PMENU command is not valid. COMMAND is always valid.

Note: Depending on your operating environment, some of the keys listed above may not already be defined in the KEYS window. Δ

- 3 To assign a command to a function key, place the cursor in the **Definition** column for the desired function key and type the command. For a description of SAS System commands, see the online SAS System Help. Some additional commands that you can use in SAS/ASSIST software include
 - RUN, which executes the task in the current task window.
 - NEW, which clears task window selections except for the active table and any Subset Data selections.
 - GOBACK, which does the same thing as selecting the **G**oback button.
 - RESULTMAN, which invokes the Result Manager.

- MMENU, which returns you to the WorkPlace menu.
- 4 To exit the KEYS window, use one of the following methods:
 - Follow this selection path:

\blacktriangleright
 - Use the END function key.

If you have made changes, a dialog box opens, asking you if you want to save the changes. Select **Yes** to save the changes or **No** to exit without saving. The KEYS window disappears.

Note: You can also access the KEYS window from SAS/ASSIST software using the same method described earlier in this section. Δ

Invoking SAS/ASSIST Software

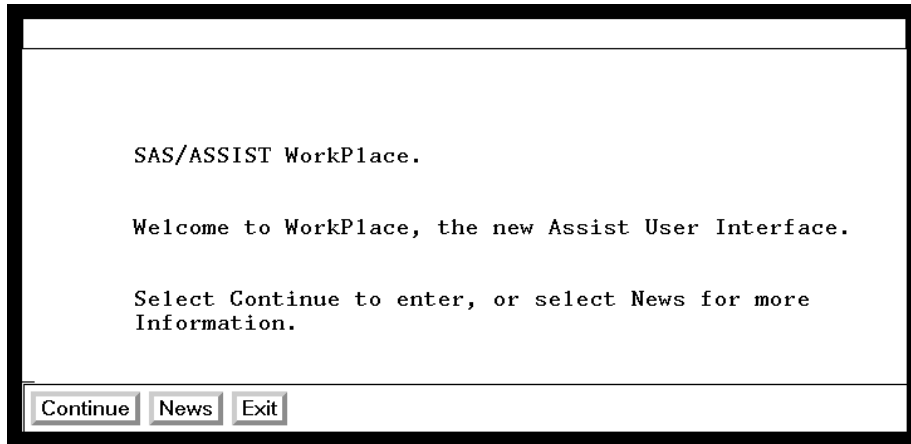
To invoke SAS/ASSIST software, follow these steps:

- 1 From any SAS System window, follow this selection path:

\blacktriangleright

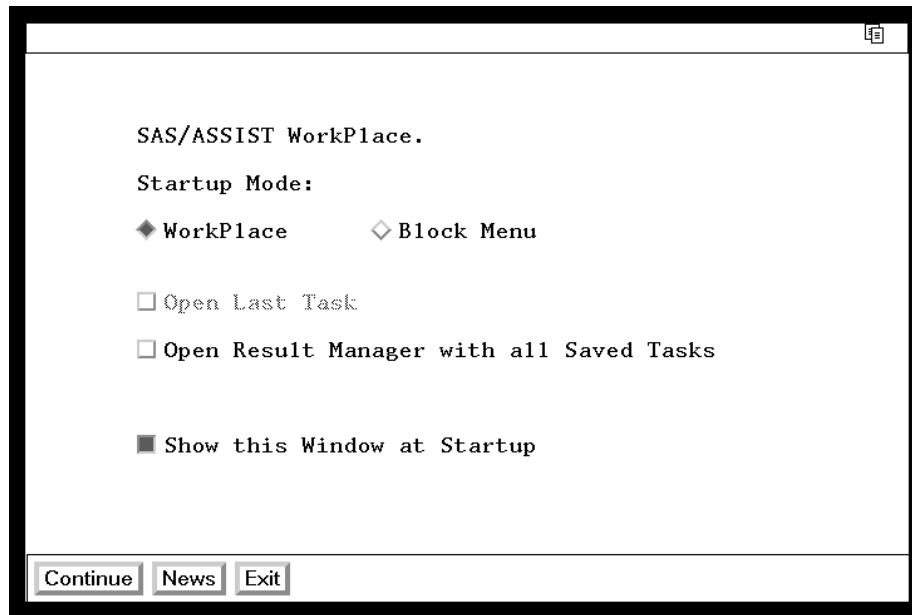
If this is the first time that you have run SAS/ASSIST software, a Welcome window appears; proceed to step 3.

Display 2.6 SAS/ASSIST Welcome Window



If this is not the first time that you have run SAS/ASSIST software, the SAS/ASSIST Start Menu appears.

Display 2.7 SAS/ASSIST Start Menu



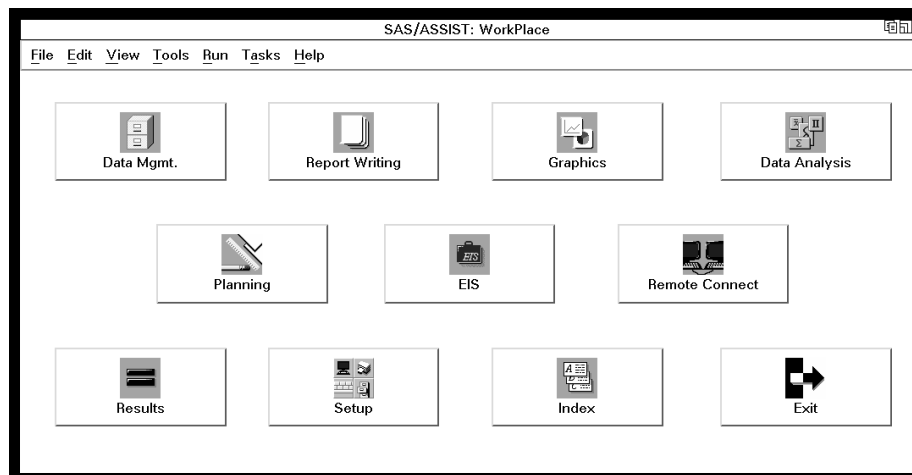
2 The Start Menu gives you several options:

- You may choose to use the new WorkPlace environment, or you can use the menu system (Block Menu) from Version 6 of SAS/ASSIST software.
- You may choose to go directly to the last task that you performed using SAS/ASSIST software, or you may choose to go directly to the Result Manager to perform one of your saved tasks. See Chapter 6, “Using the Result Manager,” on page 69 for details about using the Result Manager.
- You may choose to suppress the Start Menu the next time you invoke SAS/ASSIST software.

For now, leave these options as they are and proceed to the next step.

3 Select **Continue**. The SAS/ASSIST WorkPlace menu appears.

Display 2.8 SAS/ASSIST Workplace Menu



Using Buttons

A *button* is a graphical shape in a window that, when selected, results in an action. **OK**, **Cancel**, and **Run** are examples of buttons. The most commonly used buttons are described here:

OK	accepts what you have entered in the window and takes you to additional windows to continue the task. In some cases, OK performs the task.
Cancel	cancels what you have entered in the window and returns to the previous window.
Goback	returns to the previous window.
Help	displays help for the feature in use.

Finding Items

If you cannot find the item that you want to use in SAS/ASSIST software, you have two guides to help you:

- Use the **Tasks** menu and its cascading menus to explore the different capabilities of SAS/ASSIST software.
- Select the **Index** button from the WorkPlace menu to display an alphabetic list of all the tasks and functions that can be performed with SAS/ASSIST software. To access one of the tasks, select it from the **Index** list. The software takes you directly to the task. When you exit the task, the software returns you to the Index.

Getting Help

The SAS System has extensive online help. You can get help for a particular window or general SAS software product help. To access the general SAS System help, follow this selection path:

Help ► SAS System Help

Help topics are formatted in Hypertext Markup Language (HTML) and appear in a SAS Help Browser or in an HTML browser (for example, Microsoft Internet Explorer or Netscape Navigator). Various items in the Help browser window are highlighted, underlined, or otherwise emphasized. You can select these items to get more information about them. To access general SAS/ASSIST software help, follow this selection path from the main SAS System help screen:

Help on SAS System Products ► SAS/ASSIST ► Using SAS/ASSIST

To get help for a particular window, follow this selection path from that window's menu bar:

Help ► Using This Window

Help for that window appears.

Using HTML Output

SAS/ASSIST software can generate HTML-formatted output for reports and graphics. You can then view your output in an HTML browser, as in the following example.

Table of Contents		<i>Houses for Sale</i>					
<ul style="list-style-type: none"> The Print Procedure Data Set SASUSER.HOU 		Style of homes	Square footage	Number of bedrooms	Number of bathrooms	Street address	Asking price
		RANCH	1250	2	1.0	Sheppard Avenue	\$64,000
		SPLIT	1190	1	1.0	Rand Street	\$65,850
		CONDO	1400	2	1.5	Market Street	\$80,050
		TWOSTORY	1810	4	3.0	Garris Street	\$107,250
		RANCH	1500	3	3.0	Kemble Avenue	\$86,650
		SPLIT	1615	4	3.0	West Drive	\$94,450
		SPLIT	1305	3	1.5	Graham Avenue	\$73,650

Contact the SAS Support Consultant at your site for more information about HTML browsers available to you.

To generate HTML output with SAS/ASSIST software, see “Setting Up HTML Output” on page 177. This may have already been done for you; see the SAS Support Consultant at your site for more information.

Using SAS/ASSIST Software with This Book

In creating the examples and illustrations in this book, we removed the date and time stamp from all output and disabled the Save Changes dialog box that appears when you exit a task window. We recommend you do the same so that your experience with SAS/ASSIST software will match the descriptions in this book. This section describes how to apply these conditions.

Removing the Date and Time Stamp from Your Output

To remove the date and time from your output, follow this selection path from the SAS/ASSIST WorkPlace menu bar or any task window menu bar:

► ►

Note: This option is not applicable to graphics output and is not available on graphics task windows. \triangle

Disabling the Save Changes Dialog Box

To disable the Save Changes dialog box, the SAS/ASSIST user profile option **Confirm changes** is set to **No**. To set this option, do the following:

- 1 Follow this selection path from the WorkPlace menu bar or any task window menu bar:

► ► ►

The User Profile window appears.

- 2 In the **value** field for the **Confirm changes** option, type **no** and press ENTER.
- 3 Follow this selection path to return to the WorkPlace menu:

File ► Close

If you do not set this option to **No**, you will be presented with a Save Changes dialog box every time you exit a task window.

Creating the Sample Tables

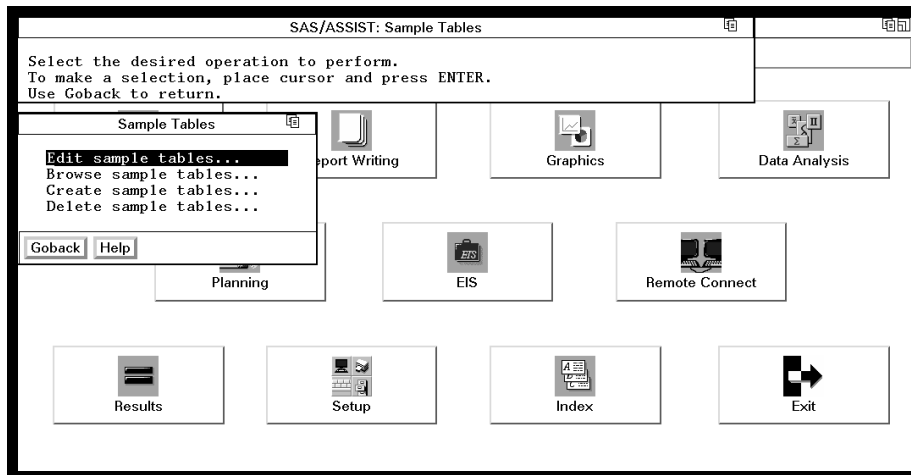
In order to perform the exercises in this book, you must create the sample tables. These sample tables are used throughout this book and can be used to learn to use the software. When you are using these sample tables, you can try any of the options in SAS/ASSIST software. You do not need to be concerned about harming the sample data. You can easily re-create the sample tables if, for example, you have altered them so that they no longer correspond to the SAS/ASSIST software documentation and tutorial examples.

- 1 To create or re-create the sample tables, follow this selection path from the WorkPlace menu:

Tasks ► Setup ► File Management ► Sample tables...

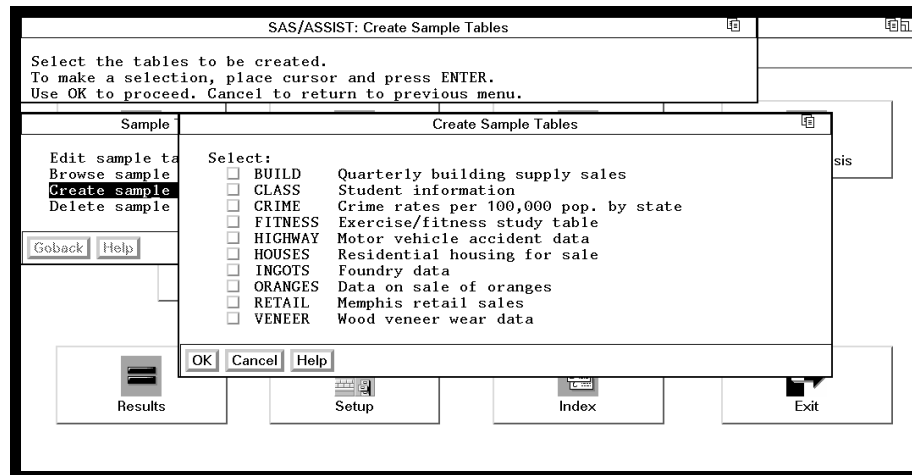
The Sample Tables window appears.

Display 2.9 Sample Tables Window



- 2 Select **Create sample tables...** from the Sample Tables window. The Create Sample Tables window appears.

Display 2.10 Create Sample Tables Window

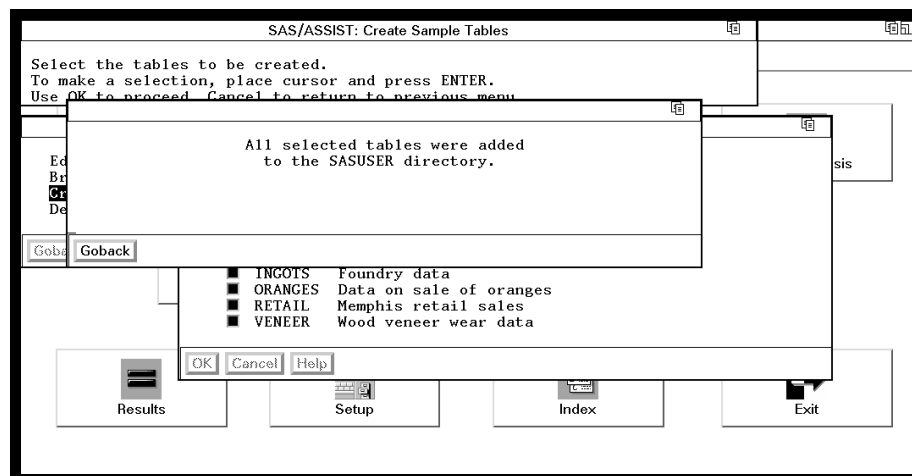


- 3 Select the tables you want to create. For the exercises in this book, select all the tables.

Note: If you are re-creating sample tables (rather than creating them for the first time), and you attempt to re-create a table that is the currently active table in one or more SAS/ASSIST tasks, you get an error message because SAS/ASSIST software does not let you re-create an active table. To remove a table from active status, follow the directions in “De-Selecting an Active Table” on page 25. \triangle

- 4 Select **OK**. The sample tables are created. Depending on your hardware and operating environment, this may take several minutes. When the process is complete, a message appears that indicates that all the tables were created.

Display 2.11 Create Sample Tables Message



- 5 Select **Goback** twice to return to the WorkPlace menu.

Deleting the Sample Tables

If you no longer wish to use the sample tables, you can delete them.

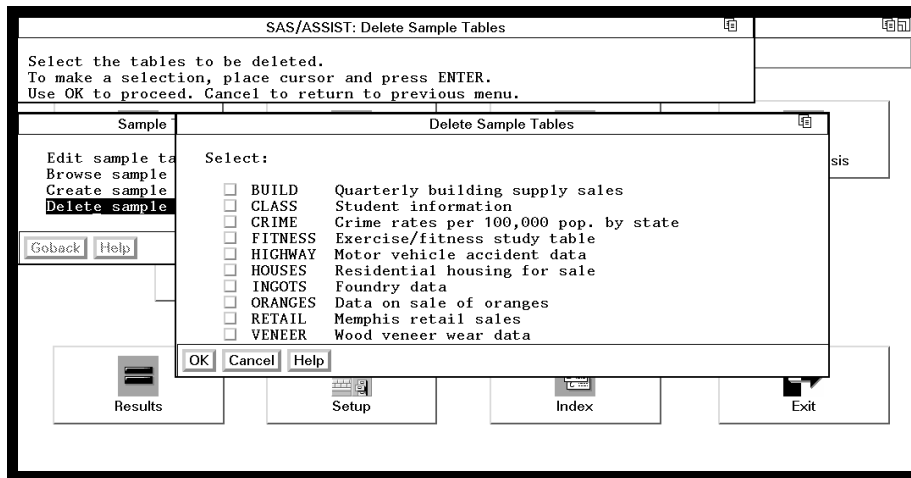
- 1 To delete the sample tables, follow this selection path from the WorkPlace menu:



The Sample Tables window appears as in Display 2.9 on page 21.

- 2 Select **Delete sample tables...** from the Sample Tables window. The Delete Sample Tables window appears.

Display 2.12 Delete Sample Tables Window

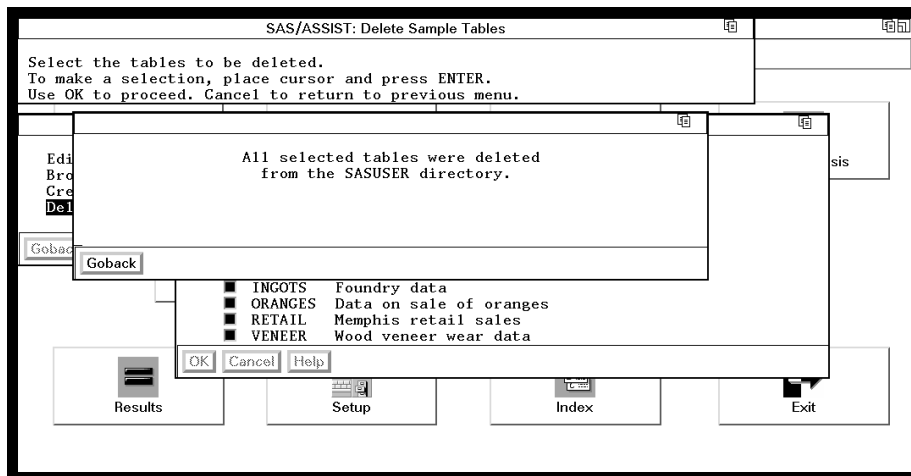


- 3 Select the tables that you want to delete.

Note: You cannot delete a table that is currently the active table in one or more SAS/ASSIST tasks. To remove a table from active status, follow the directions in “De-Selecting an Active Table” on page 25. △

- 4 Select **OK**. A message appears that indicates that the selected tables were deleted.

Display 2.13 Deleted Sample Tables Message



- 5 Select **Goback** twice to return to the WorkPlace menu.

Frequently Used SAS/ASSIST Operations

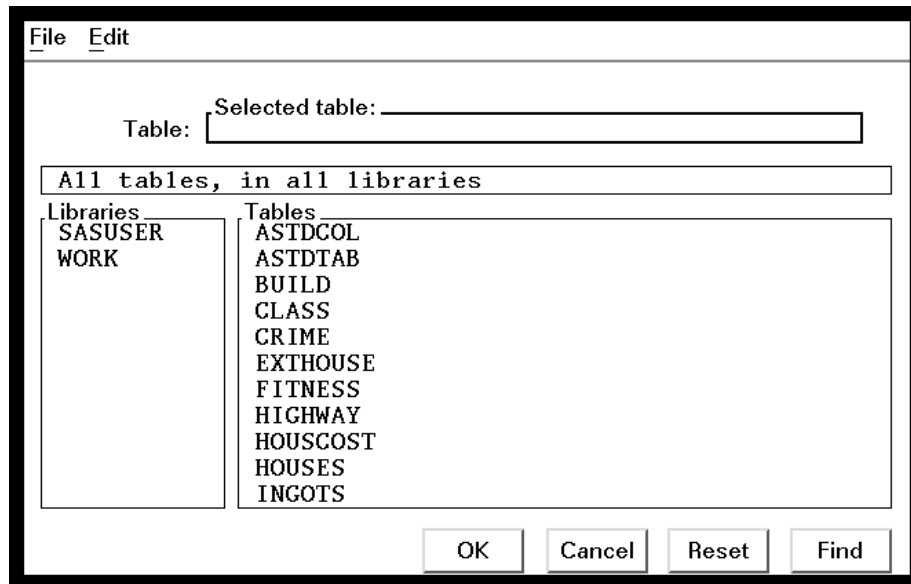
This section describes how to perform operations that are common to most SAS/ASSIST tasks. The task examples in this book refer you to this section when these operations are required.

Selecting a Table

When a task example instructs you to select a table, follow these steps:

- 1 If you have not already done so, select the **Table** button in the task window. The Select table window appears.

Display 2.14 Select Table Window



The Select table window contains a list of SAS data libraries on the left side and a list of SAS tables on the right. If there is an active table, the table name appears in the **Selected table** field as a two-level name. See “SAS Files” on page 113 for details about SAS naming conventions.

- 2 Use one of the following methods to select a table:
 - Type the two-level table name in the **Selected table** field.
 - Select the SAS data library name from the **Libraries** list, and then select the table name from the **Tables** list. The sample tables used in the examples in this book are all located in the SASUSER library.

If the desired table does not appear in the list of tables, it either does not exist, is not in a library that the SAS System knows about, or was added to a library after SAS/ASSIST software was invoked.

- For sample tables, see “Creating the Sample Tables” on page 21.
- For tables in undeclared libraries, see “Using SAS/ASSIST Software to Assign a New Libref” on page 117 for details about declaring libraries.
- For newly added tables, follow this selection path to cause SAS/ASSIST software to re-examine all libraries for tables:

Tools ► **Update data**

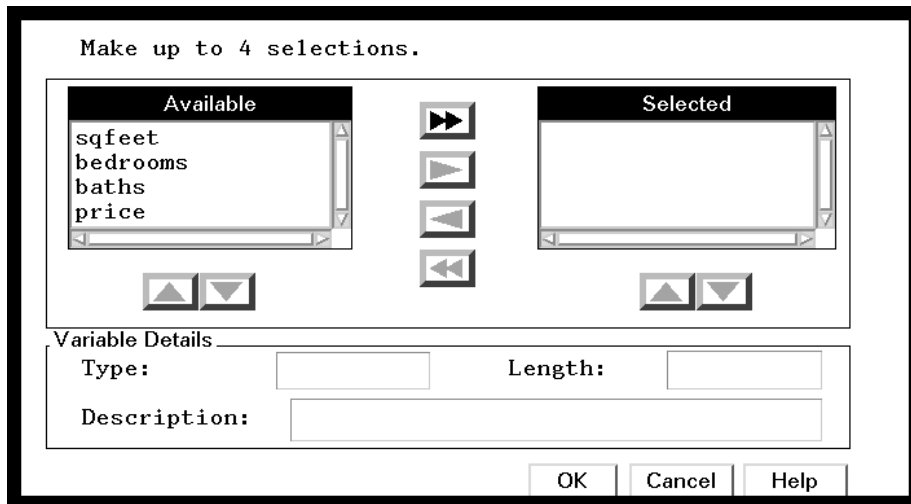
- 3 Select **OK**. The Select table window disappears.

Selecting a Column

When a task example instructs you to select a column, follow these steps:

- 1 If you have not already done so, select the appropriate button (for example, **Columns**, **Chart column**, or **Analysis column**) in the task window. The Select Table Variables window appears with the available columns in the **Available** list. (Note that “variable” is another word for “column.”)

Display 2.15 Select Table Variables Window



The number of columns you can select is indicated above the **Available** list. In certain contexts, not all of the active table's columns are listed. For instance, when the software performs an action that requires numerical data, only numerical columns are listed.

- 2 Select the desired column name from the **Available** list.
- 3 Select the right-arrow button. The column name disappears from the **Available** list and appears in the **Selected** list.

Note: In certain tasks, you can select more than one column at a time; in others, you can select only one column. If you can select only one column, the Select Table Variables window disappears when you select the right-arrow button, and the column name appears in the task window. In this case, you do not need to go any further in this procedure. Δ

To de-select a column, select it in the **Selected** list and select the left-arrow button to move it back to the **Available** list.

- 4 Repeat Steps 2 and 3 for each desired column.

Note: If you want to select all of the available columns, you can select the double-right-arrow button to select them all at once instead of selecting them one at a time. Δ

- 5 Select **OK**. The Select Table Variables window disappears.

De-Selecting an Active Table

You can clear task window selections by selecting **New** from the **File** menu. However, this action does not clear the Active Table selection or the Subset Data

selection. The reason for this feature is that many users wish to use the same subset of the same data for multiple tasks. To clear the Active Table and Subset Data selections, follow the steps in this section. To clear only the Subset Data selection, see the instructions in the next section.

- 1 Use the **Tasks** menu to go to the desired task window.
- 2 Select **Table**. The Select table window appears.
- 3 Select **Reset**, and then select **OK**. The task window reappears with the **Active Table** field cleared.

Note: These steps also clear the other window selections. Δ

Clearing a Subset Data Selection

You can clear task window selections by selecting **New** from the **File** menu. However, this action does not clear the Active Table selection or the Subset Data selection. To clear only the Subset Data selection, follow the steps in this section. The reason for this feature is that many users wish to use the same subset of the same data for multiple tasks. To clear both the Subset Data selection and Active Table, see the instructions in the previous section.

- 1 Use the **Tasks** menu to go to the desired task window.
- 2 Select **subset data**. The Subset Data window appears.
- 3 Select the subsetting method you want to clear (**BY columns**, **WHERE clause**, or **Restrict rows**). The selection window for that method appears.
- 4 Select **Reset**. The default value for that method is restored.
- 5 Select **OK**. The Subset Data window reappears.
- 6 Repeat steps 3 through 5 for each desired subsetting method.
- 7 Select **Goback**. The Subset Data window disappears.

Exiting a Task

When you are finished with a task, you can either return to the WorkPlace menu or go on to another task:

- To return to the WorkPlace menu, follow this selection path:



- To go on to another task, select **Tasks**, and then select the desired task.

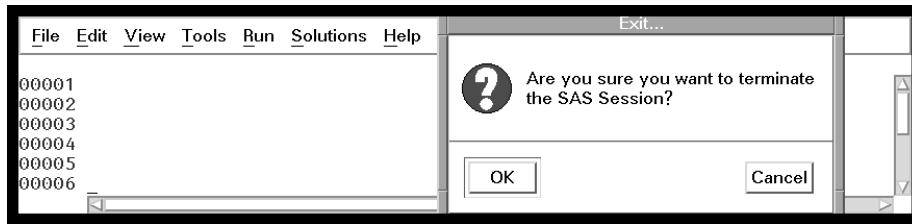
Exiting SAS/ASSIST Software

To exit SAS/ASSIST software, return to the WorkPlace menu and select **Exit**. The SAS/ASSIST window disappears.

Exiting the SAS System

To exit the SAS System, use one of the following methods:

- From the SAS Explorer window, Program Editor window, Results window, or SAS Environment window, select **File** from the menu bar, and then select **Exit**. A prompt confirms that you want to exit.

Display 2.16 SAS Exit Prompt When Using the Menu Bar

Select **OK** to exit the SAS System.

- In the SAS ToolBox command window, or at a **Command ==>** prompt, type **BYE** and press ENTER. The SAS System terminates without further prompting.

The remaining chapters in this book provide you with step-by-step instructions for completing the most commonly used tasks of the SAS System by using SAS/ASSIST software.

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