

## Graphics

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### Chapter Overview

This chapter describes the graphics capabilities of SAS/ASSIST software. It shows you how to create bar charts, pie charts, plots, and maps.

You can access all of the SAS/ASSIST graphics tasks by selecting the **Graphics** button from the WorkPlace menu, or by following this selection path from any task window:

Tasks ► Graphics

The menu that appears depends on your hardware and software. If you are using a graphics terminal or hardcopy device, and you have SAS/GRAPH software licensed, a menu for high-resolution graphics appears. If you are using a nongraphics terminal, a

window appears that asks you to choose high-resolution or low-resolution graphics. Select low resolution; a menu for low resolution graphics appears.

The output for the low-resolution graphs is built using characters. The output for the high-resolution graphs uses graphics. The difference between the two menus is that the high-resolution graphics menu also has an item for maps.

*Note:* The examples in this chapter use high-resolution graphics.  $\Delta$

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## Additional Information

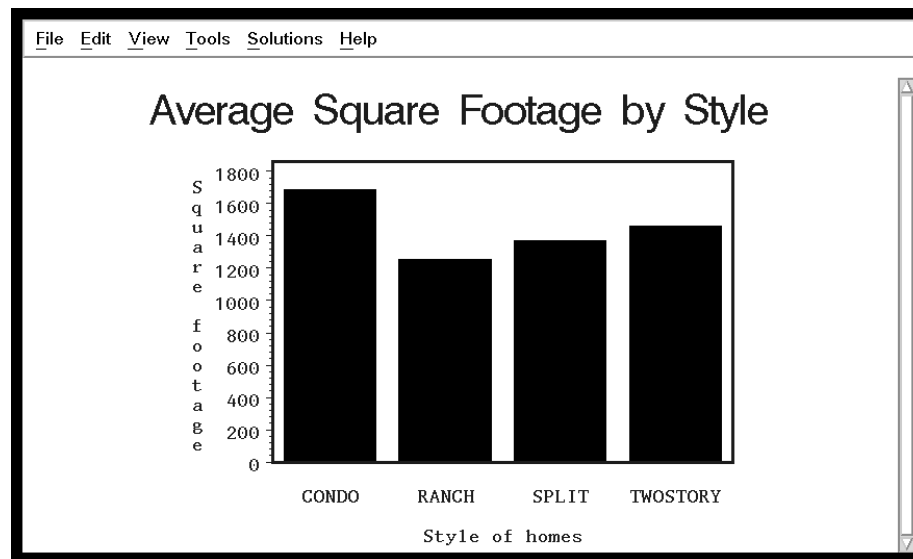
For additional information about creating high-resolution graphics, refer to *SAS/GRAPH Software: Reference*. For additional information about creating low-resolution graphics, refer to the *SAS Procedures Guide*.

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## Producing a Bar Chart

This section shows you how to produce a vertical bar chart that shows the average number of square feet by the style of houses. The procedure for producing a horizontal bar chart is similar to this one.

**Display 4.1** Average Square Footage by Style Bar Chart




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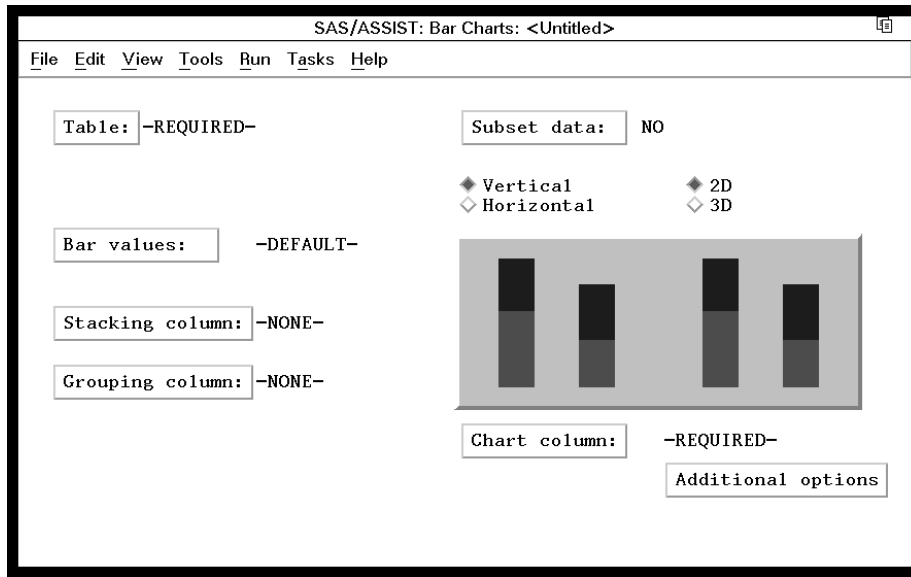
## Instructions

- To create a bar chart like the one shown in the previous display, follow this selection path:

Tasks ► Graphics ► Bar Charts...

The Bar Charts window appears.

Display 4.2 Bar Charts Window



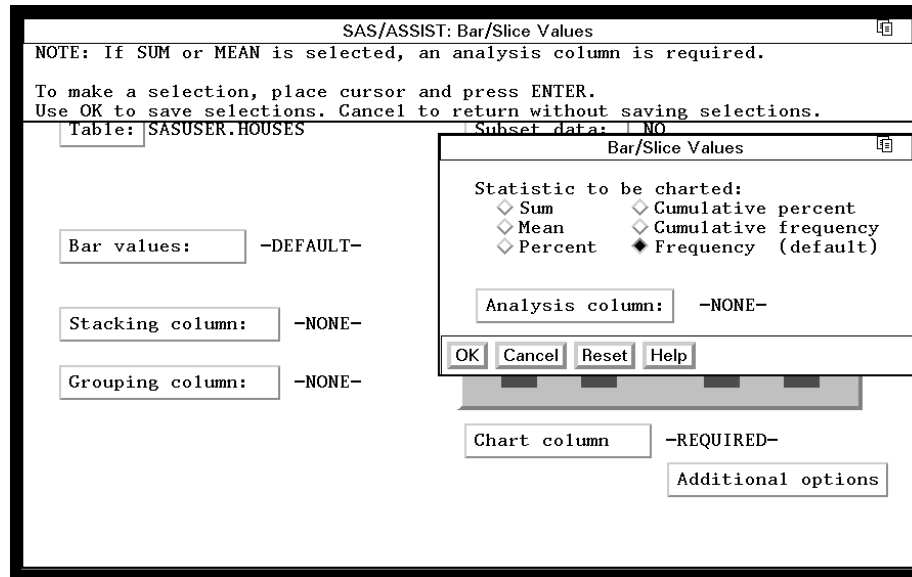
- 2 Select **vertical** on the Bar Charts window if it is not already selected.
- 3 If the active table is SASUSER.HOUSES, continue to the next step. Otherwise, select **Table**, and then select the SASUSER.HOUSES table. For more information on selecting tables, see “Selecting a Table” on page 24.
- 4 If there is an active Subset Data selection (indicated with **BY**, **WHERE**, or **ROWS** next to the **Subset data** button), clear the selection. For more information, see “Clearing a Subset Data Selection” on page 26.
- 5 If other task selections exist (for example, a column name is listed for **Chart column**), follow this selection path to clear these selections:
 

File

▶

New
- 6 To indicate that you want the bars of the chart to represent the mean of the square footage for each house, select **Bar values** from the Bar Charts window. The Bar/Slice Values window appears.

Display 4.3 Bar/Slice Values Window



- 7 Select **Mean** as the statistic from the Bar/Slice Values window.
- 8 Select **Analysis column** from the Bar/Slice Values window, and then select the SQFEET column. For more information, see “Selecting a Column” on page 25.
- 9 Select **OK**. The Bar/Slice Values window disappears.
- 10 Select **Chart column**. Then select the STYLE column.

---

## Adding Titles

You can customize the graph by adding titles and footnotes, changing the page dimensions, and selecting headings. Refer to “Adding Titles” on page 36 for instructions on adding titles to the graph.

Add the title **Average Square Footage by Style** as Title 1 for this graph.

Because the same set of titles and footnotes is used for all SAS/ASSIST tasks, the titles and footnotes most recently used in your SAS/ASSIST session are used unless you change or reset them in the Titles and Footnotes windows.

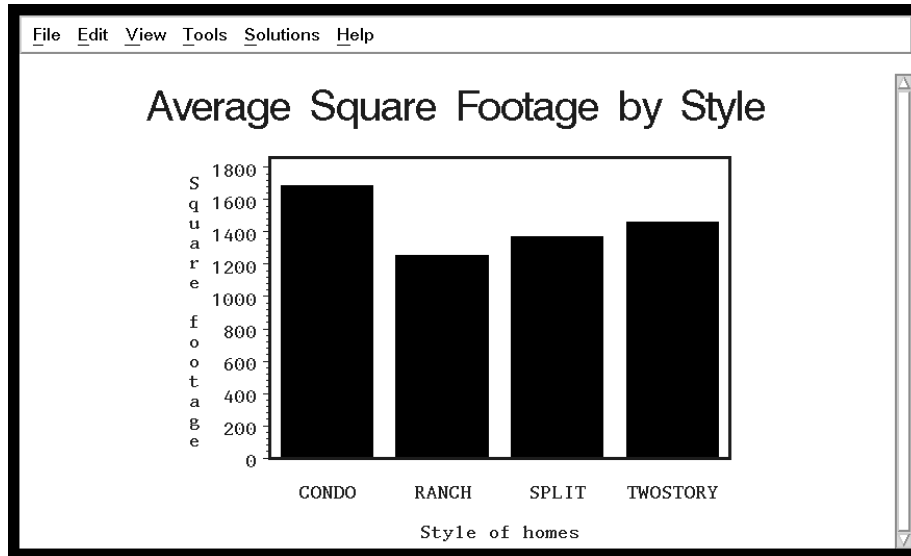
---

## Running the Graph

After you have finished setting up the graph, run it by following this selection path:

**Run** ► **Submit**

The graph appears in the Graph window.

**Display 4.4** Average Square Footage by Style Bar Graph


---

## Printing the Graph

For most operating environments, you can print your graph by following this selection path from the Graph window:



However, some operating environments and hardware may require some set-up prior to printing graphics. If you have trouble printing graphics, see the SAS companion for your operating environment or contact the SAS Support Consultant at your site for further instructions.

---

## Exiting This Task

When you have finished viewing or printing your graph, return to the Bar Charts window by using one of the following methods, depending on your operating environment:

- Use the PREVWIND function key.
- Click on the SAS/ASSIST window.

To return to the WorkPlace menu or move on to another task, follow the directions in “Exiting a Task” on page 26.

---

## Producing a Pie Chart

This section shows you how to generate a pie chart that shows how many houses are in each style.

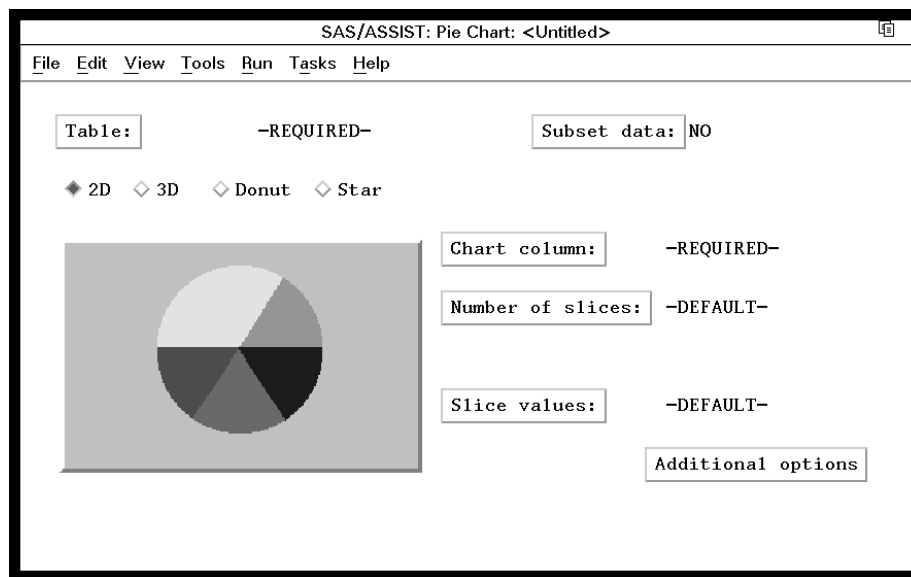
**Display 4.5** Houses for Sale by Style Pie Chart

## Instructions

- 1 To produce a pie chart graph like the one in the previous display, follow this selection path:

Tasks ► Graphics ► Pie Chart...

The Pie Chart window appears.

**Display 4.6** Pie Chart Window

- 2 If the active table is SASUSER.HOUSES, continue to the next step. Otherwise, select **Table**, and then select the SASUSER.HOUSES table. For more information on selecting tables, see “Selecting a Table” on page 24.
- 3 If there is an active Subset Data selection (indicated with **BY**, **WHERE**, or **ROWS** next to the **Subset data** button), clear the selection. For more information, see “Clearing a Subset Data Selection” on page 26.
- 4 If other task selections exist (for example, a column name is listed for **Chart column**), follow this selection path to clear these selections:
 

File

 ► 

New
- 5 To indicate that you want the pie slices to represent the numbers of each style of house in the HOUSES table, select **Chart column**, and then select the **STYLE** column. For more information, see “Selecting a Column” on page 25.

---

## Adding Titles

You can customize the graph by adding titles and footnotes, changing the page dimensions, and selecting headings. Refer to “Adding Titles” on page 36 for instructions on adding titles to the graph. Add the title **Houses for Sale by Style** as Title 1 for this graph.

Because the same set of titles and footnotes is used for all SAS/ASSIST tasks, the titles and footnotes most recently used in your SAS/ASSIST session are used unless you change or reset them in the Titles and Footnotes windows.

---

## Running the Graph

After you have finished setting up the graph, run it by following this selection path:

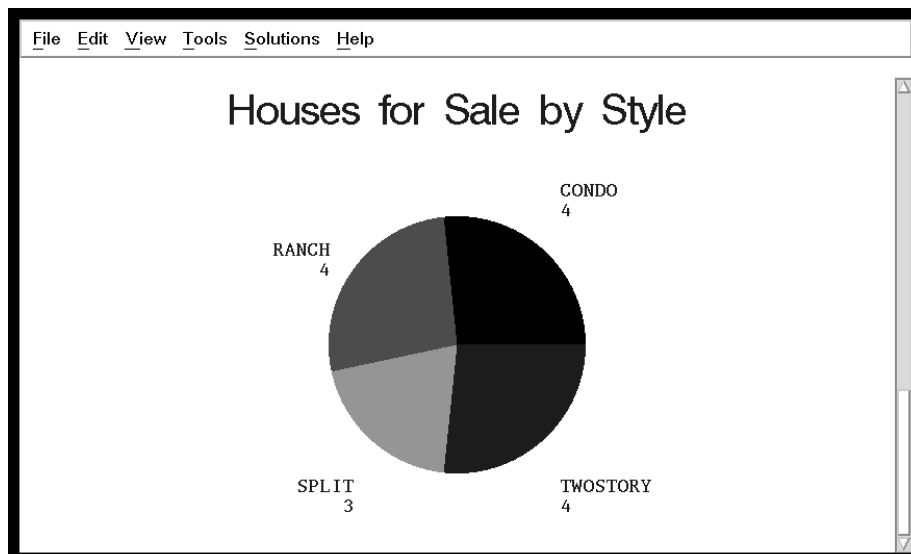
Run

 ► 

Submit

The graph appears in the Graph window.

**Display 4.7** Houses for Sale by Style Pie Chart



---

## Printing the Graph

For most operating environments, you can print your graph by following this selection path from the Graph window:

**File** ► **Print...**

However, some operating environments and hardware may require some set-up prior to printing graphics. If you have trouble printing graphics, see the SAS companion for your operating environment or contact the SAS Support Consultant at your site for further instructions.

---

## Exiting This Task

When you are finished viewing or printing your graph, return to the Pie Chart window by using one of the following methods, depending on your operating environment:

- Use the PREVWIND function key.
- Click on the SAS/ASSIST window.

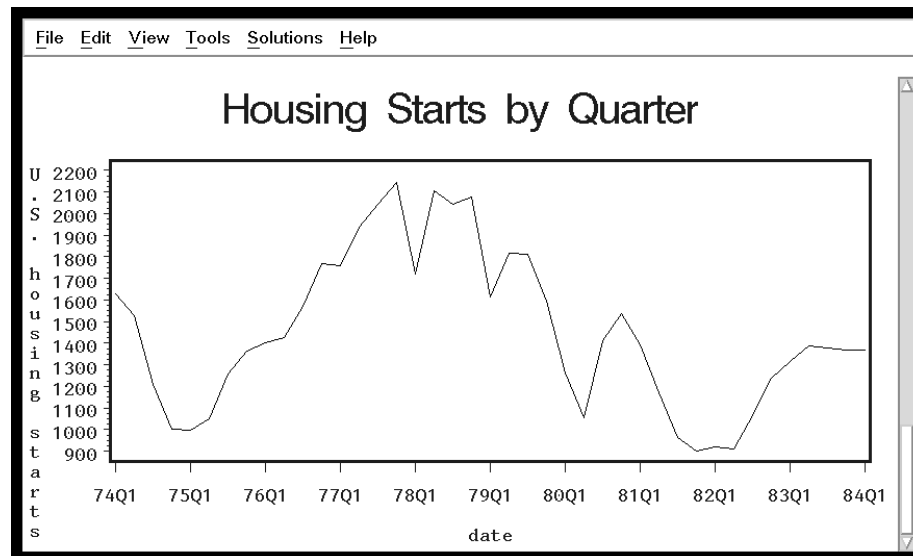
To return to the WorkPlace menu or move on to another task, follow the directions in “Exiting a Task” on page 26.

---

## Producing a Plot

This section shows you how to produce a plot of housing starts over time.

**Display 4.8** Plot of Housing Starts by Quarter




---

## Instructions

To produce a plot like the one shown in the previous display, follow these instructions:

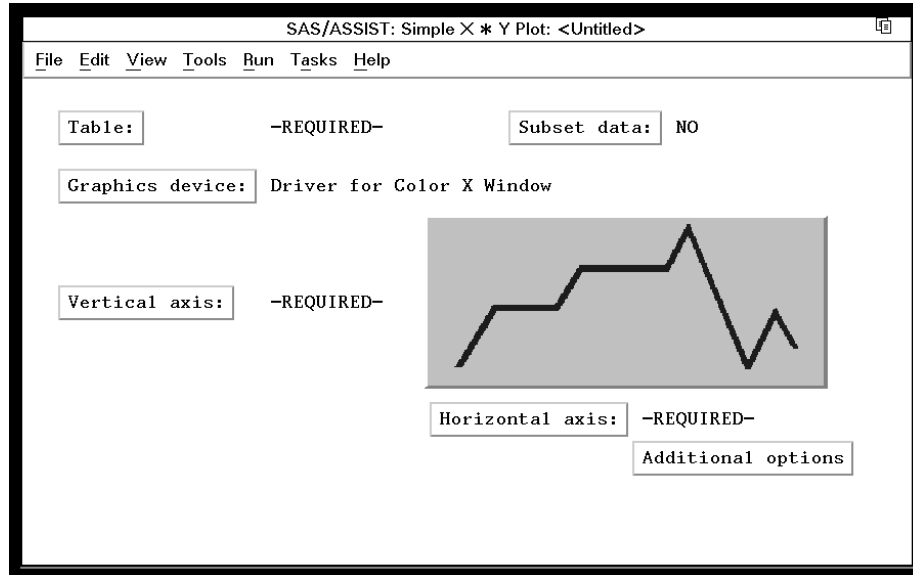


1 Follow this selection path:

Tasks ► Graphics ► Plots ► Simple X \* Y Plot...

The Simple X \* Y Plot window appears.

Display 4.9 Simple X \* Y Plot Window



- 2 If the active table is SASUSER.BUILD, continue to the next step. Otherwise, select **Table**, and then select the SASUSER.BUILD table. For more information on selecting tables, see “Selecting a Table” on page 24.
- 3 If there is an active Subset Data selection (indicated with **BY**, **WHERE**, or **ROWS** next to the **Subset data** button), clear the selection. For more information, see “Clearing a Subset Data Selection” on page 26.
- 4 If other task selections exist (for example, a column name is listed for **Vertical axis** or **Horizontal axis**), follow this selection path to clear these selections:  
File ► New
- 5 Select **Vertical axis**, and then select the STARTS column. For more information, see “Selecting a Column” on page 25.
- 6 Select **Horizontal axis**, and then select the DATE column.

---

## Adding Titles

You can customize the graph by adding titles and footnotes, changing the page dimensions, and selecting headings. Refer to “Adding Titles” on page 36 for instructions on adding titles to the graph. Add the title **Housing Starts by Quarter** as Title 1 for this graph.

Because the same set of titles and footnotes is used for all SAS/ASSIST tasks, the titles and footnotes most recently used in your SAS/ASSIST session are used unless you change or reset them in the Titles and Footnotes windows.

---

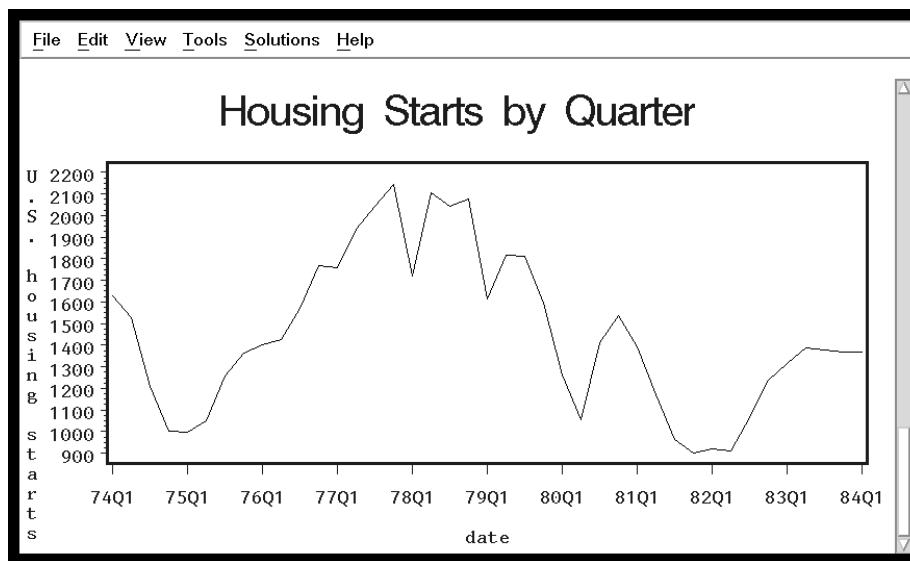
## Running the Graph

After you have finished setting up the graph, run it by following this selection path:

**Run** ► **Submit**

The graph appears in the Graph window.

**Display 4.10** Plot of Housing Starts by Quarter



Notice that the dates are listed along the horizontal axis by year and quarter. For more information on SAS dates and date formats, see *SAS Language Reference: Concepts*.

---

## Printing the Graph

For most operating environments, you can print your graph by following this selection path from the Graph window:

**File** ► **Print...**

However, some operating environments and hardware may require some set-up prior to printing graphics. If you have trouble printing graphics, see the SAS companion for your operating environment or contact the SAS Support Consultant at your site for further instructions.

---

## Exiting This Task

When you are done viewing or printing your graph, return to the Simple X \* Y Plot window by using one of the following methods, depending on your operating environment:

- Use the PREVWIND function key.
- Click on the SAS/ASSIST window.

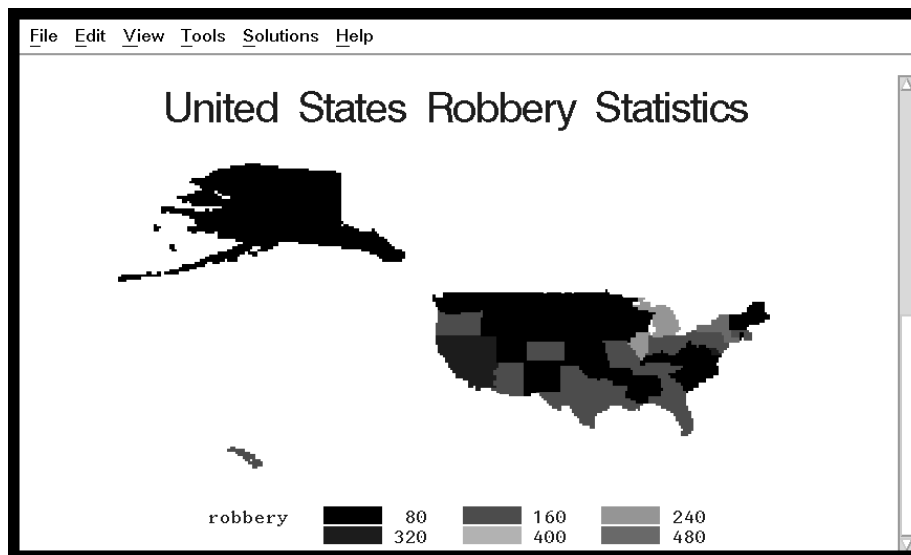
To return to the WorkPlace menu or move on to another task, follow the directions in “Exiting a Task” on page 26.

---

## Producing a Map

A map is a specialized graphic that shows a geographical area with data superimposed on it. A map report is useful for conveying information that varies by geographical area. By following the instructions in this section, you can produce a graphic showing robbery statistics on a United States map, as shown below. You must have SAS/GRAPH software installed to produce a map.

**Display 4.11** United States Robbery Statistics Map



---

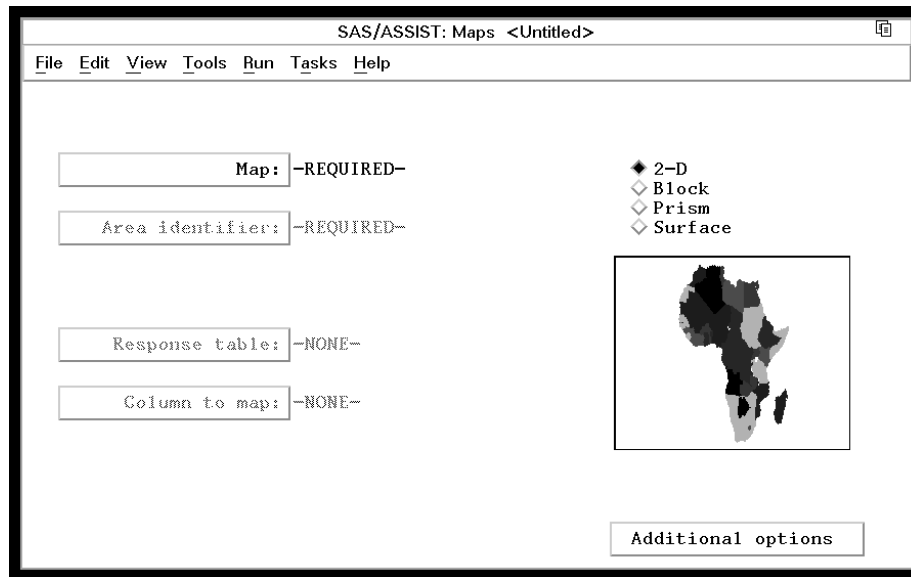
## Instructions

- 1 To create a map like the one shown in the previous display, follow this selection path:

Tasks ► Graphics ► Maps...

The Maps window appears.

Display 4.12 Maps Window

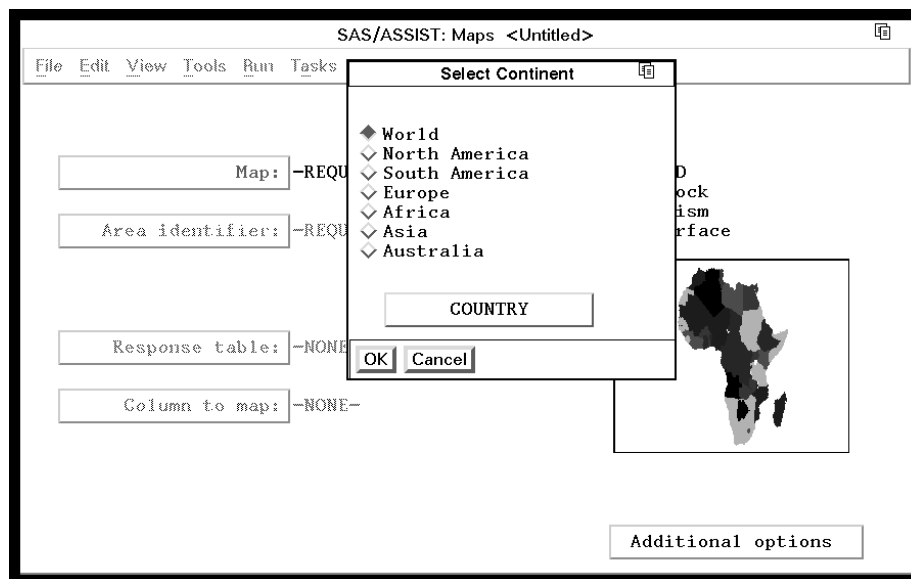


- 2 If task selections exist (for example, a country name is listed for **Map**), follow this selection path to clear these selections:



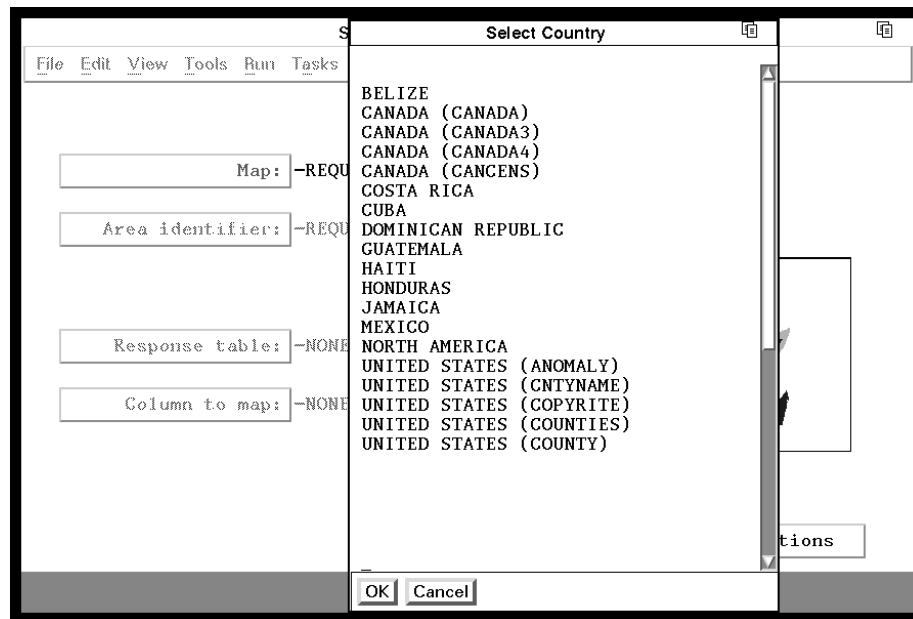
- 3 Select **Map**. The Select Continent window appears.

Display 4.13 Select Continent Window



- 4 Select **North America**, and then select **COUNTRY**. The Select Country window appears with a list of countries in North America.

Display 4.14 Select Country Window



- 5 Select **UNITED STATES (COUNTIES)**. The Maps window reappears with **UNITED STATES** listed for **Map**.
- 6 Select **Area Identifier**, and then select the **STATE** column. For more information, see “Selecting a Column” on page 25.
- 7 Select **Response Table**. The Response Table in the Maps task is equivalent to the Active Table in other SAS/ASSIST tasks. Select **SASUSER.CRIME** as the response table. For more information, see “Selecting a Table” on page 24.
- 8 Select **Column to map**, and then select the **ROBBERY** column.
- 9 Select **2--D** as the type of map that you want to create, if it has not already been selected.

---

## Adding Titles

You can customize the graph by adding titles and footnotes, changing the page dimensions, and selecting headings. Refer to “Adding Titles” on page 36 for instructions on adding titles to the graph. Add the title **United States Robbery Statistics** as Title 1 for this graph.

Because the same set of titles and footnotes is used for all SAS/ASSIST tasks, the titles and footnotes most recently used in your SAS/ASSIST session are used unless you change or reset them in the Titles and Footnotes windows.

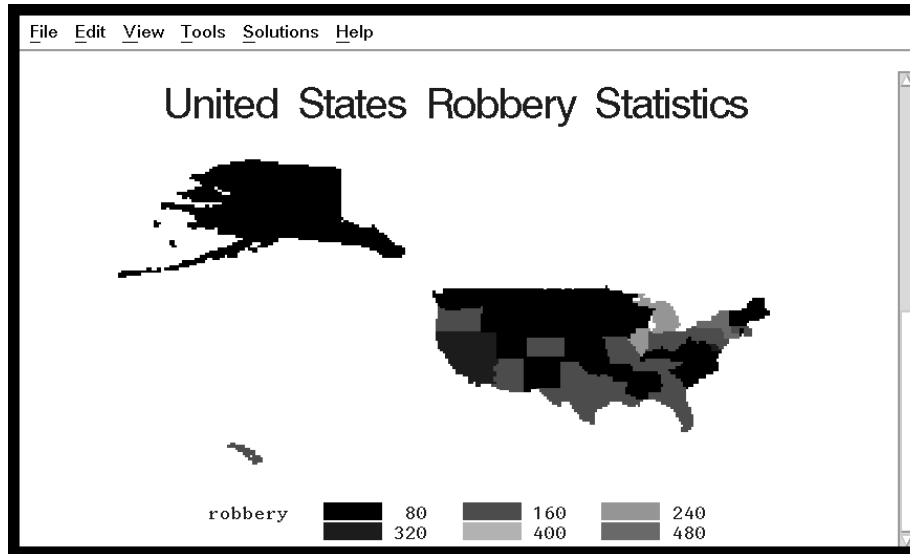
---

## Running the Map

After you have finished setting up the graph, run it by following this selection path:

►

The graph appears in the Graph window.

**Display 4.15** United States Robbery Statistics Map


---

## Printing the Map

For most operating environments, you can print your graph by following this selection path from the Graph window:

File ► Print...

However, some operating environments and hardware may require some set-up prior to printing graphics. If you have trouble printing graphics, see the SAS companion for your operating environment or contact the SAS Support Consultant at your site for further instructions.

---

## Exiting This Task

When you are done viewing or printing your graph, return to the Maps window by using one of the following methods, depending on your operating environment:

- Use the PREVWIND function key.
- Click on the SAS/ASSIST window.

To return to the WorkPlace menu or move on to another task, follow the directions in “Exiting a Task” on page 26.

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