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.

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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**

1. 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.
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 22.

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 24.

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.
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 23.

9 Select **OK**. The Bar/Slice Values window disappears.

10 Select **Chart column**. Then select the **STYLE** column.

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**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 34 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.

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**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

![Average Square Footage by Style Bar Graph](image)

**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 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 24.

**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

![Houses for Sale by Style Pie Chart](image)

**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

![Pie Chart Window](image)
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 22.

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 24.

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 23.

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**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 34 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.

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**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.
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 24.

Producing a Plot

This section shows you how to produce a plot of housing starts over time.
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 22.

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 24.

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 23.

6 Select Horizontal axis, and then select the DATE column.

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**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 34 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.

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**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 24.
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.
2 If task selections exist (for example, a country name is listed for Map), follow this selection path to clear these selections:

File ➤ New

3 Select Map. The Select Continent window appears.

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 23.
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 22.
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.

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**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 34 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.

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**Running the Map**

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

![Run and Submit buttons]
The graph appears in the Graph window.

**Display 4.15** United States Robbery Statistics Map

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**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.

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**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 24.