CHAPTER
14

Analyzing Data

Chapter Overview

This chapter describes how to calculate statistics on your data. With data analysis, you can

- produce frequency tables or compute summary statistics, correlations, or confidence intervals about the mean
- calculate linear regression, logistic regression, or regression with correction for autocorrelation
- calculate analysis of variance, nonparametric ANOVA, or *t*-tests
- produce control charts and perform capability analysis
- compute principal components or canonical correlations and calculate seasonal adjustment of time series
- compute percentiles, standardize or rank data, create time-series data, and convert frequency of time-series data.

This chapter describes only the Summary statistics item of the Elementary task from the Data Analysis menu. The other tasks are similar.

The example in this chapter produces a report, as shown in the following display, that shows some summary statistics for the price and square footage of houses for sale.

Display 14.1   Summary Statistics Report

```
 File  Edit  View  Tools  Solutions  Help

                                                                    1

                           The MEANS Procedure

 Variable     Label                    Minimum         Maximum           Range
 ----------------------------------------------------------------------------------
 sqfeet       Square footage        720.0000000         2105.00         1385.00
 price        Asking price            34550.00       127150.00        92600.00
 ----------------------------------------------------------------------------------


                   Variable     Label                       Mean
                   ----------------------------------------------------
                   sqfeet       Square footage           1447.00
                   price        Asking price            82720.00
                   ----------------------------------------------------
```

Additional Information

For additional information about analyzing data, refer to *SAS/STAT User's Guide*.

Analyzing Data
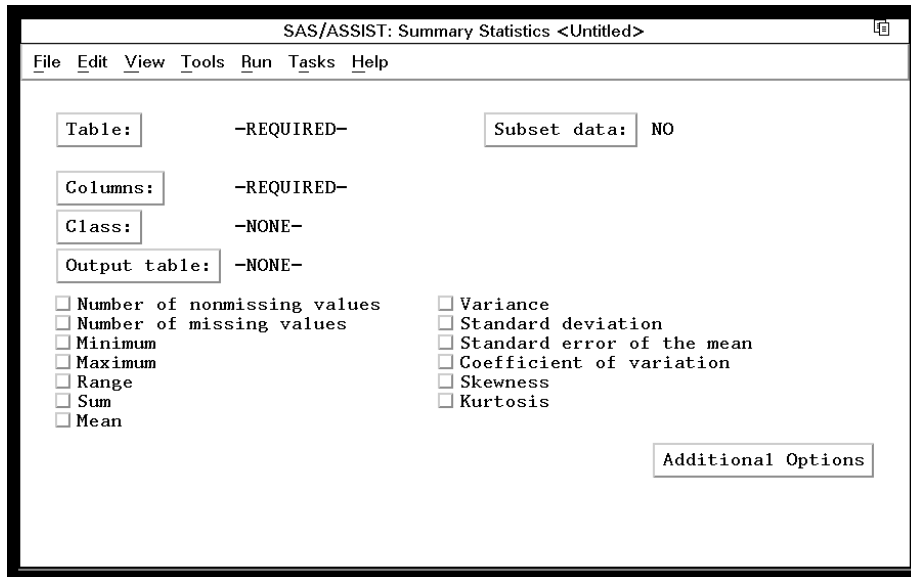
Instructions

1 Follow this selection path:

Tasks ▶ Data Analysis ▶ Elementary ▶ Summary Statistics...

The Summary Statistics window appears.

Display 14.2   Summary Statistics 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 report selections exist (for example, column names are listed for `Columns`), follow this selection path to clear these selections:

   File ► New

5 Select `Columns`, and then select the SQFEET column for analysis. For more information, see"Selecting a Column" on page 25.

6 Select the desired statistics from the Summary Statistics window. For this example, select `Minimum`, `Maximum`, `Range`, and `Mean`.

7 You can customize the report 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 report.

   Add the title `Summary Statistics of Price and Square Footage` as Title 1 to this report.

   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.

8 To run the report, follow this selection path:

   Run ► Submit

The report appears in the Output window.

Display 14.3   Summary Statistics Report

```
 File  Edit  View  Tools  Solutions  Help
                                                                    1 △

                        The MEANS Procedure

 Variable    Label                   Minimum        Maximum          Range
 ────────────────────────────────────────────────────────────────────────
 sqfeet      Square footage       720.0000000        2105.00        1385.00
 price       Asking price           34550.00      127150.00       92600.00
 ────────────────────────────────────────────────────────────────────────

                   Variable    Label                        Mean
                   ──────────────────────────────────────────────
                   sqfeet      Square footage            1447.00
                   price       Asking price             82720.00
                   ──────────────────────────────────────────────
```

The report shows the minimum, maximum, range, and mean for the price and square footage for the houses in the HOUSES table.

9 If the report is larger than one window, use the scroll bars or the FORWARD, BACKWARD, LEFT, and RIGHT function keys to look at the report.

10 To print the report, refer to "Printing the Report" on page 38.

11 After you have finished looking at or printing the report, return to the Summary Statistics 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.

Getting Started with the SAS System Using SAS/ASSIST Software, Version 8