# Chapter 142

Pie Charts

Introduction

The pie chart is constructed by dividing a circle into two or more sections or slices. The chart is used to show the proportion that each part is of the whole. Hence, it should be used when you want to compare individual categories with the whole. If you want to compare the values of categories with each other, a bar chart may be more useful.

The chart below shows the budget for each of four departments in a hypothetical company.

Pie Chart of Budget
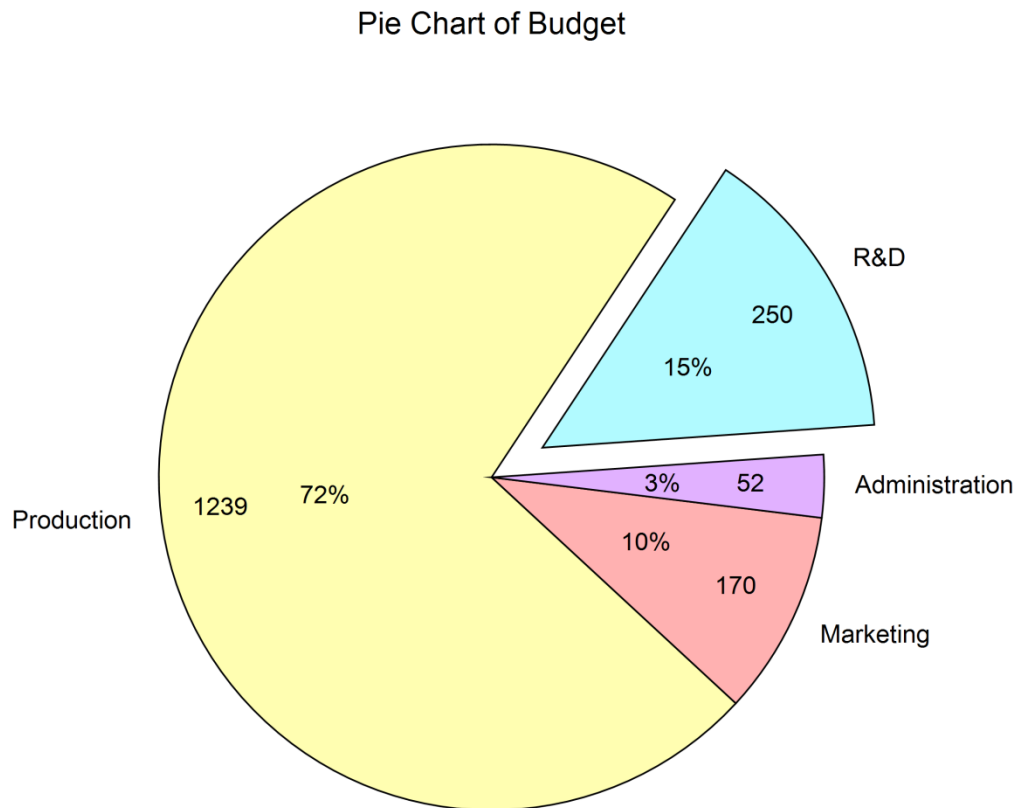
Pie Chart Variations

The following pie charts were produced from the same dataset as the pie chart shown above.
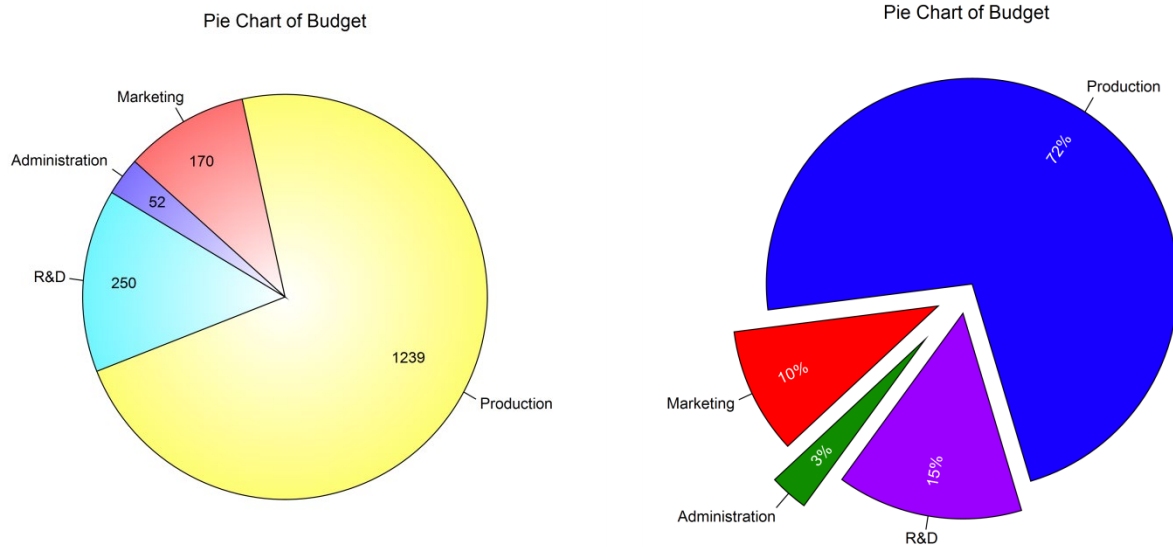
Data Structure

Data values must be positive and numeric. Non-positive values are given their absolute value. The data are entered as columns. An option labeling column may be used for slice labels. An example of such data is shown in the Budget dataset.

Budget dataset

Department	Budget
Marketing	170
Production	1239
R&D	250
Administration	52

Procedure Options

This section describes the options available in this procedure.

Variables Tab

This panel specifies the variables that will be used to produce the pie chart.

Data

Data Variables

Select the columns containing the data that is used to produce the slices. A separate pie chart is produced for each Data Variable.

Label Variable

Specify an optional variable containing the labels for individual slices.

Variable Names

This option specifies whether the column names or column labels are used on the chart.

Pie Chart Format

Format

Click the format button to change the plot settings (see Pie Chart Window Options below).

Edit During Run

Checking this option will cause the plot format window to appear when the procedure is run. This allows you to modify the format of the graph with the actual data.

Pie Chart Window Options

This section describes the specific options available on the Pie Chart window, which is displayed when a Pie Chart Format button is clicked. Common options, such as axes, labels, legends, and titles are documented in the Graphics Components chapter.
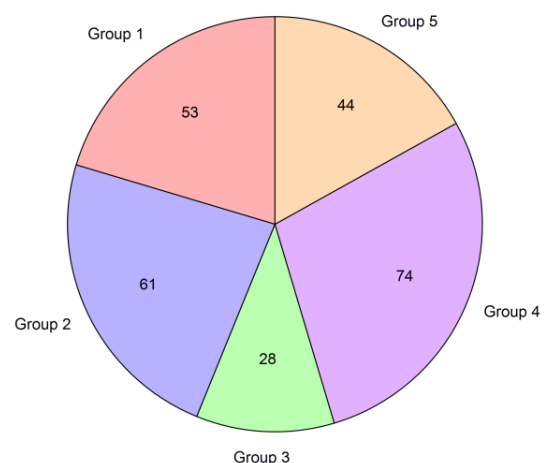
Slices Tab

Slice Fill Direction

This option is used to specify whether the slices are ordered clockwise from the reference angle or counterclockwise from the reference angle. The default reference angle is 90 degrees (straight up).
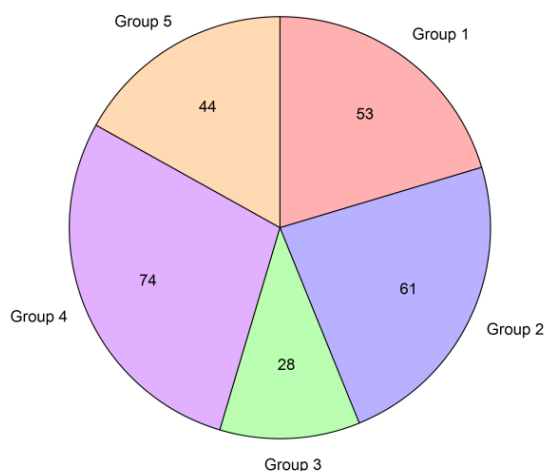
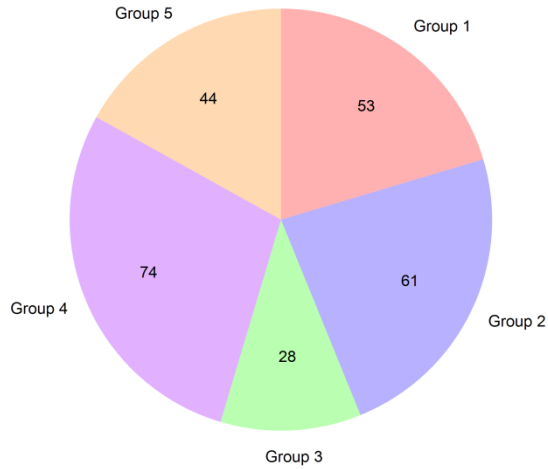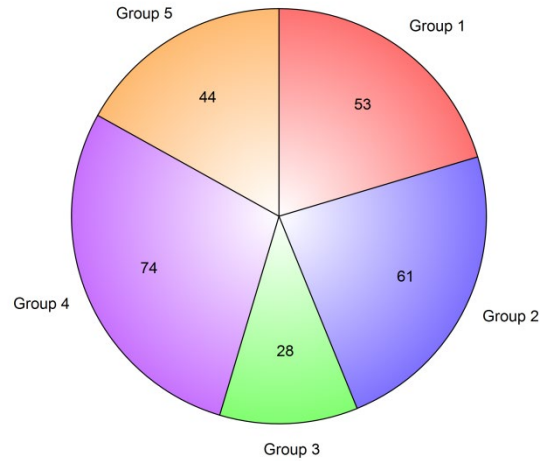Clockwise from 90 Degrees   Counterclockwise from 90 Degrees

Slice Fills and Borders

The slice fills can be any of the standard fills, including gradient fills. The slice borders use the standard options. Either the slice fills or the slice borders can be excluded if desired.
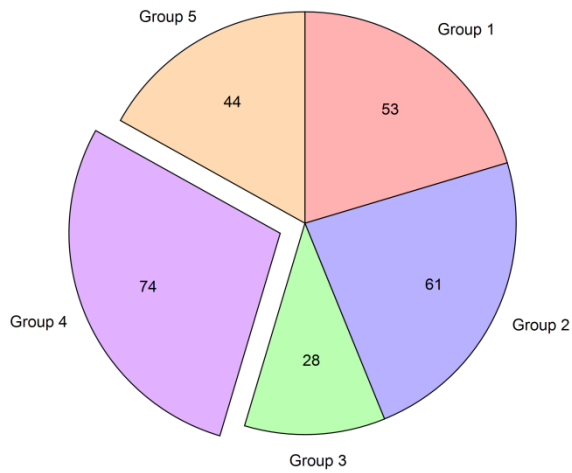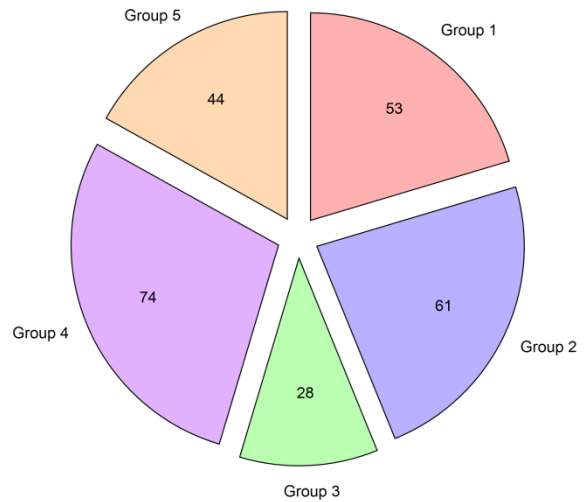
No Borders

Circular Gradient Fills

Slice Offset and Size

The slice offset allows you to emphasize a slice by causing it to "explode" away from the pie.

Offset Group 4

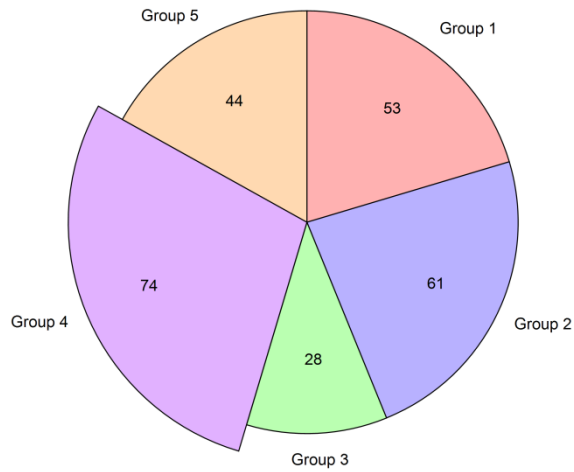### Offset All

The slice size allows you to emphasize a slice by causing it to be larger than the other pie slices.
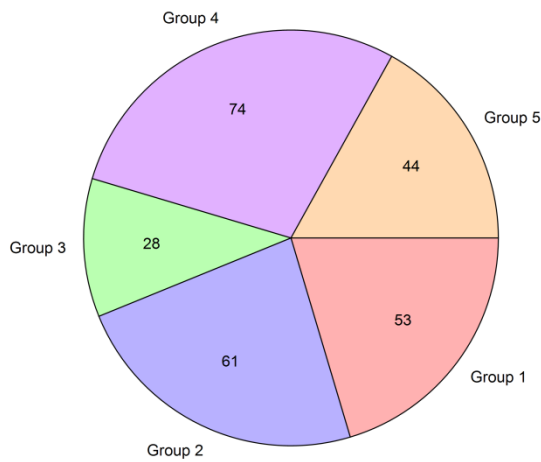
Extra Large Group 4

Reference Angle

This is the angle from which the first slice starts. This value can be used to rotate the pie chart. The direction of the slices from this angle is chosen under Slice Fill Direction.

Reference Angle 0

Labels Tab

Slice Labels

Available labels for each slice are the slice label, the slice value, and the slice percent. Each of these labels can be moved in or out individually or collectively, based on the given radius. The angle of the text for each label can be set to horizontal, the direction of the center of the slice, or a custom angle. Individual labels may also be shifted in any direction.
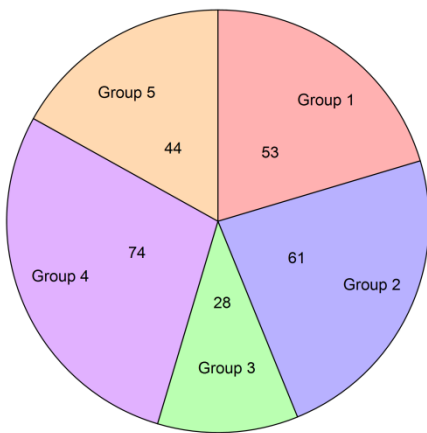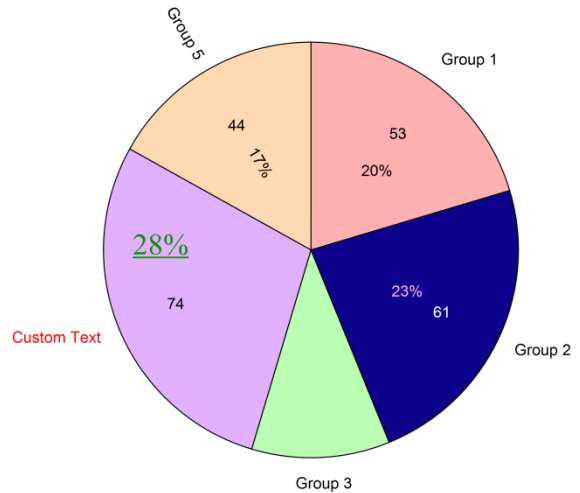

All Three Labels at Defaults
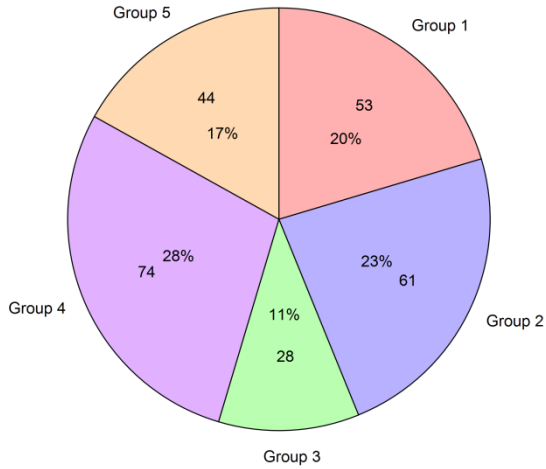
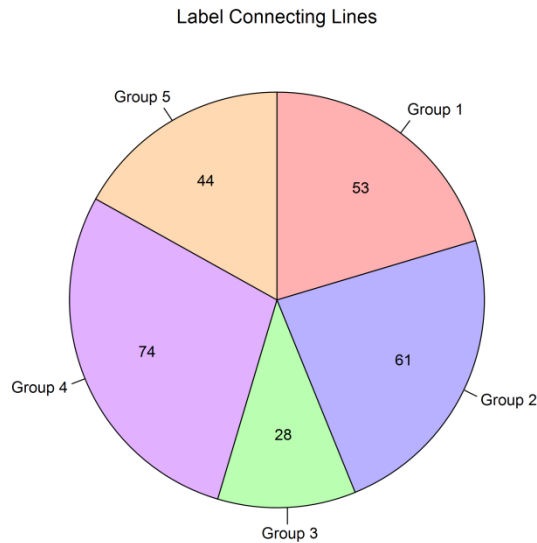Slice Label Angles with Slices
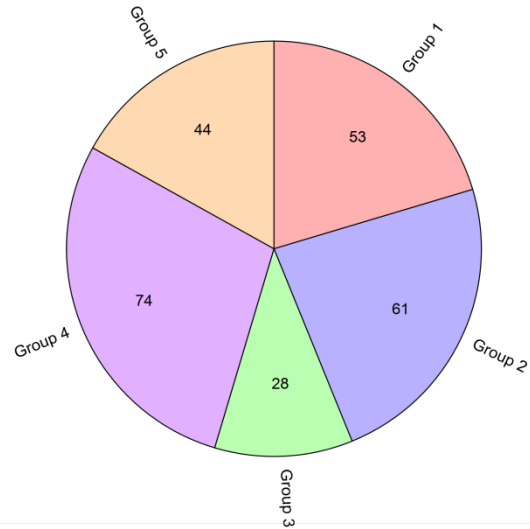
Adjusting the Label Radius

Label Variations

Lines Tab

Label Connecting Lines

A line may be drawn to each label from the corresponding slice. These lines can start from the interior of the slice or the edge of the slice, and may be drawn to either the slice label, the slice value, or the slice percent.

Label Connecting Lines

Example 1 – Creating a Pie Chart

This section presents an example of how to create a pie chart of the data stored on the Budget dataset.

You may follow along here by making the appropriate entries or load the completed template **Example 1** by clicking on Open Example Template from the File menu of the Pie Charts window.

1   **Open the Budget dataset.**
   - From the File menu of the NCSS Data window, select **Open Example Data**.
   - Click on the file **Budget.NCSS**.
   - Click **Open**.

2   **Open the Pie Charts window.**
   - Using the Graphics menu or the Procedure Navigator, find and select the **Pie Charts** procedure.
   - On the menus, select **File**, then **New Template**. This will fill the procedure with the default template.

3   **Specify the variables.**
   - On the Pie Charts window, select the **Variables tab**.
   - Double-click in the **Data Variables** text box. This will bring up the variable selection window.
   - Select **Budget** from the list of variables and then click **Ok**. "Budget" will appear in the Data Variables box.
   - Double-click in the **Label Variable** text box. This will bring up the variable selection window.
   - Select **Department** from the list of variables and then click **Ok**. "Department" will appear in the Label Variable box.

4   Select the slice colors.

-   On the Pie Charts window, press the **Pie Chart Format button**.
-   Click the **Slice Fill Format** button.
-   Select the desired colors for fills 1 through 4.
-   Click **OK**. Click **OK** again.

5   Run the procedure.

-   From the Run menu, select **Run Procedure**. Alternatively, just click the green Run button.

Pie Chart Output