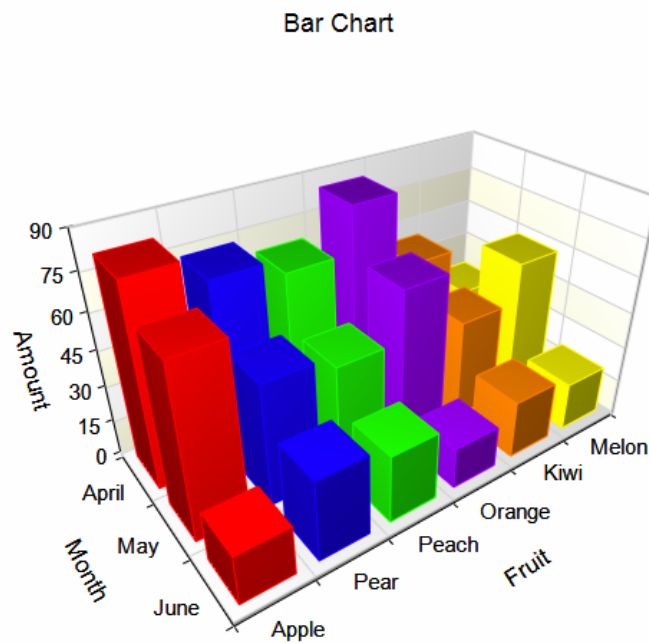Chapter 148

3D Bar Charts

Introduction

Bar charts are used to visually compare values to each other. This chapter gives a brief overview and examples of simple 3D bar charts and two-factor 3D bar charts. Below is an example of a 3D bar chart with two factors (Month and Fruit).

Data Structure

Data for a 3D bar chart are entered in columns. Each numeric data value becomes a bar. The simple 3D bar chart procedure gives a 3D bar chart for each column of data. The two-factor 3D bar chart combines columns of data into a single chart. Below is an example of data ready to be charted. These data are stored in the Fruit dataset.

Fruit Dataset

Fruit	April	May	June	Total
Apple	82	70	20	172
Pear	73	50	33	156
Peach	67	45	28	140
Orange	85	65	17	167
Kiwi	54	42	24	120
Melon	33	58	20	111

3D Bar Chart Window Options

This section describes the specific options available on the 3D Bar Chart window, which is displayed when the 3D Bar Chart button is clicked. Common options, such as axes, labels, legends, and titles are documented in the Graphics Components chapter.

3D Bar Chart Tab

Plot Type Section

You can create a chart that displays either bars or symbols using the options in this section.
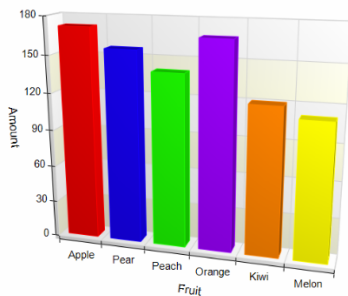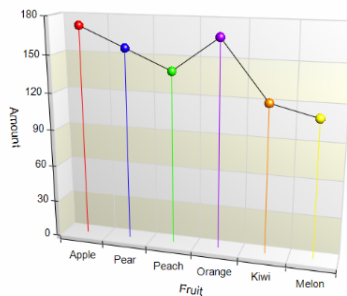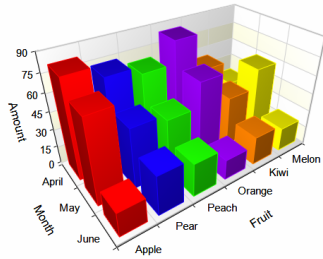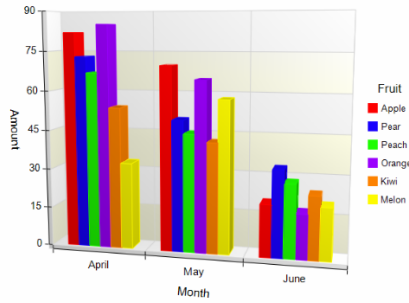
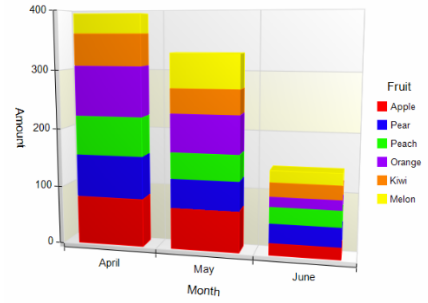### One Factor

Two Factors

Series Chart | Side-by-Side Chart | Stacked Bars Chart
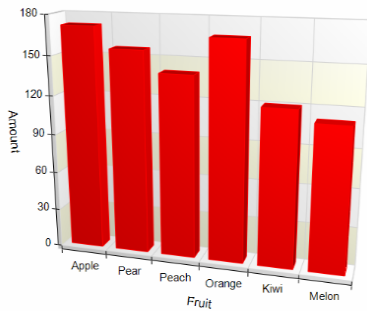
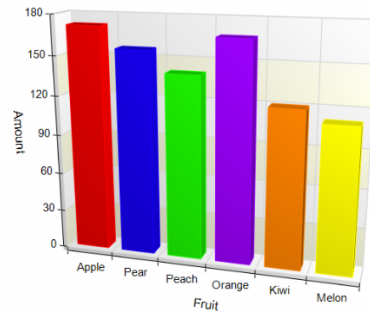# Bars or Symbols and Lines Section

You can specify the format of either the bars or symbols using the options in this section.
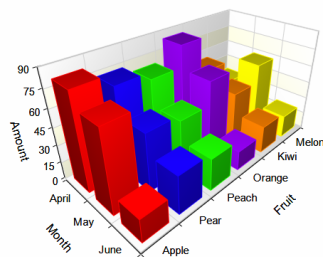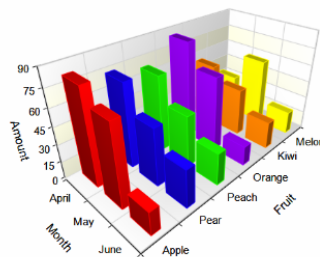
One Factor

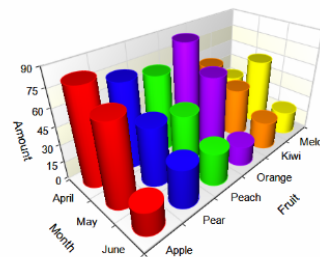Single Color | Multiple Colors

Two Factors

Multiple Colors | Narrow Bars | Cylinder-Shaped Bars
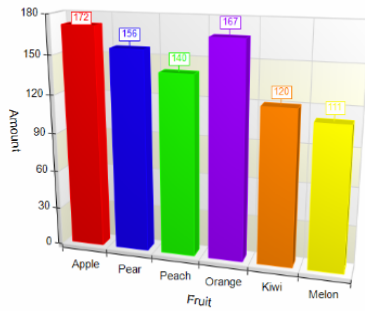
Data Labels Section

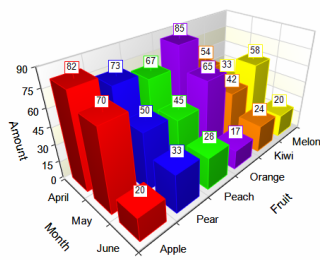You can add and format data labels using the options in this section.

One Factor

Two Factors
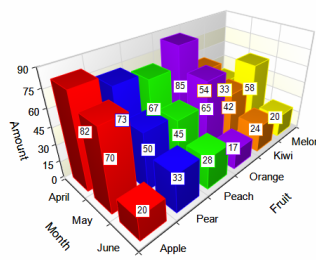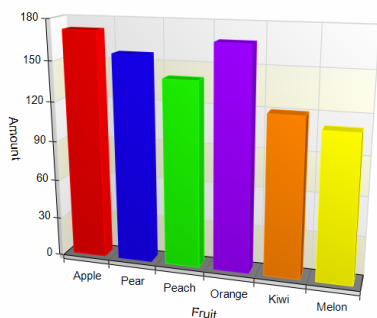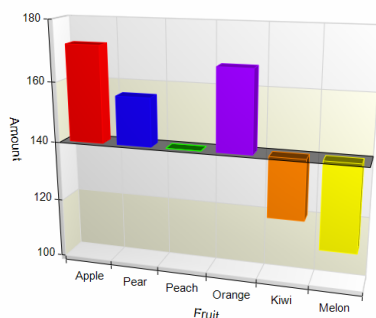
Reference Value Section

The Reference Value is the plane from which the bars are drawn. You can specify the value from which the bars originate using the options in this section.


3D Layout Tab

Use this tab to control the 3D viewing aspects of the plot. Click on **Show in New Window** beneath the 3D Plot Preview display to show the plot in a separate window where you can auto-spin the plot and interact with the 3D orientation on the fly. All of the options on this tab are also available on the 3D Plot Preview window.
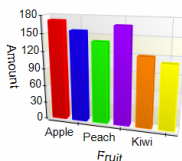
Display Section

Control the display of the plot. Make the plot 2D or 3D using these options, as well as the zoom and the perspective angle. When using 2D, only the X and Y axes are displayed; the Z axis is not displayed.
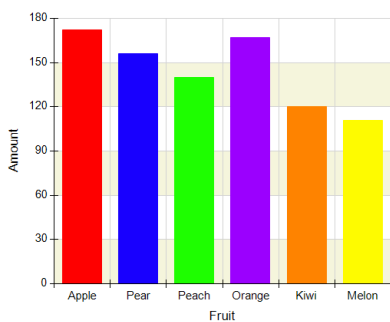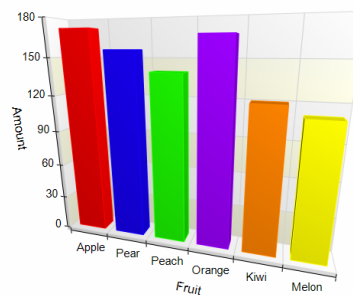
3D Orientation Section

Control rotation, elevation, and viewer rotation of the 3D plot. You can modify the rotation and elevation interactively by left-clicking on the plot in the 3D Plot Preview display and dragging your mouse.
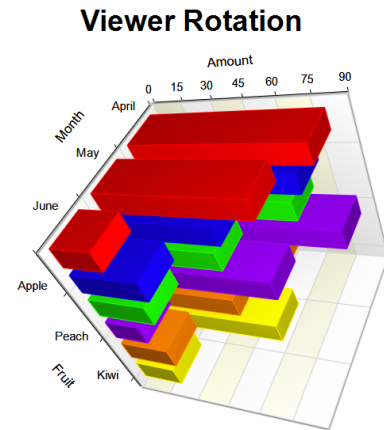
Relative Dimensions Section

Control the relative display dimensions for the X, Y, and Z axes of the plot.

Quick Layout Tools Section

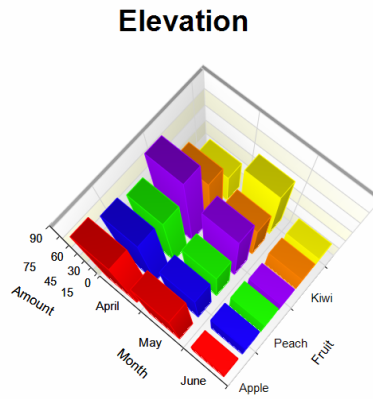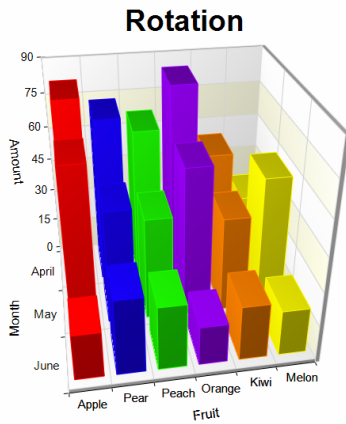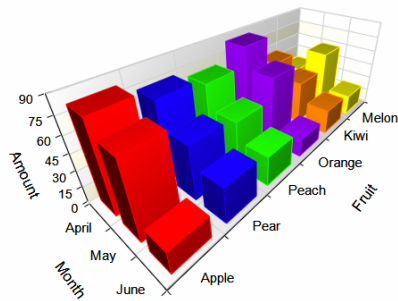Use these tools to quickly change multiple plot settings simultaneously to achieve a 3D display result.
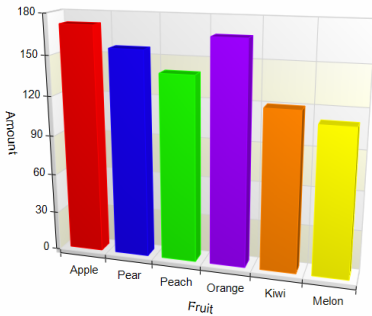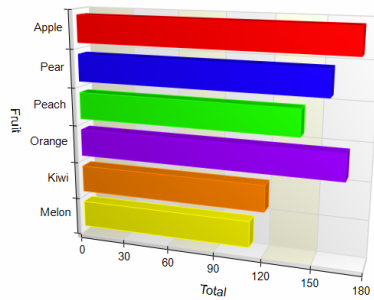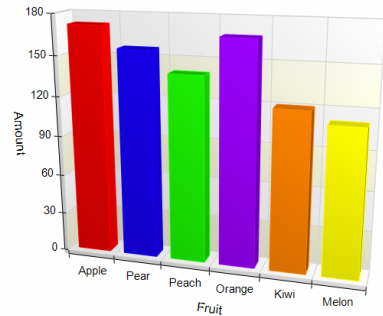
Load the Interactive 3D Plot Preview Window

Click this button to show the plot in a separate window where you can auto-spin the plot and interact with the 3D orientation on the fly. All of the options on this tab are also available on the 3D Plot Preview window.

Walls Tab

Use this tab to control the display of walls on the plot.

XY Walls, YZ Walls, and XZ Walls Section

Control how walls are displayed on the plot.
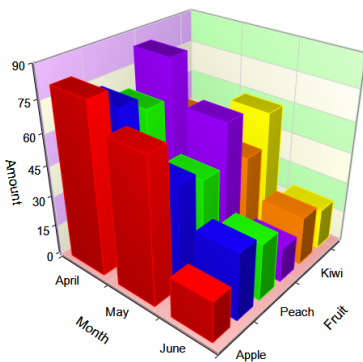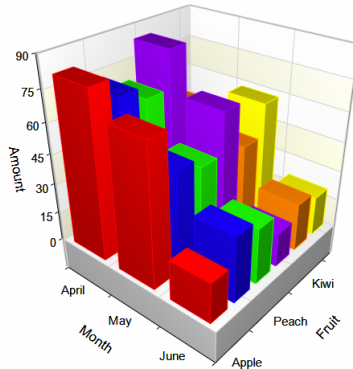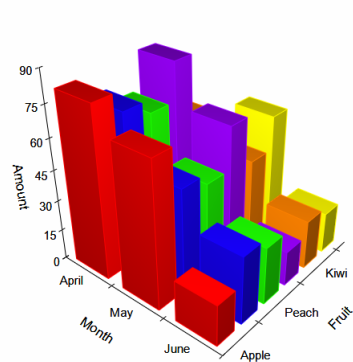
Titles, Legend, X Axis, Y Axis, Z Axis, Grid Lines, and Background Tabs

Details on setting the options in these tabs are given in the Graphics Components chapter. A few specific options are described below.

Fill Between Major Grid Lines (on Grid Lines Tab)

Controls the appearance of reference bands on the plot.
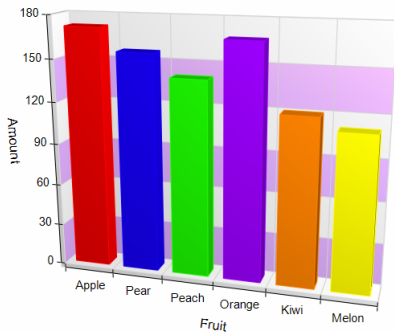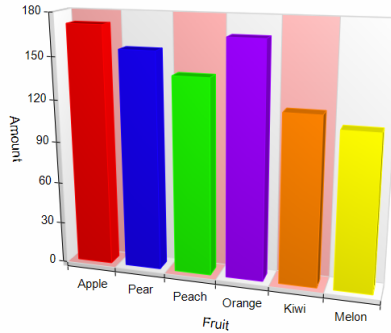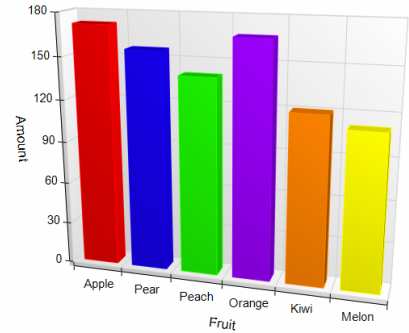
Lighting Scheme (on Background Tab)

Control the ambient lighting on the plot. Choose from a number of present lighting schemes. These schemes change the way colors and 3D items appear in the plot.
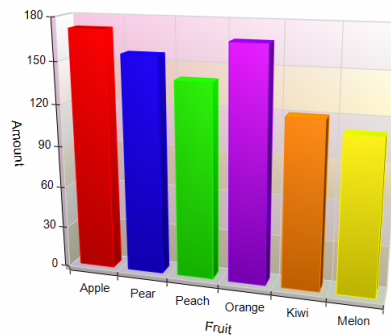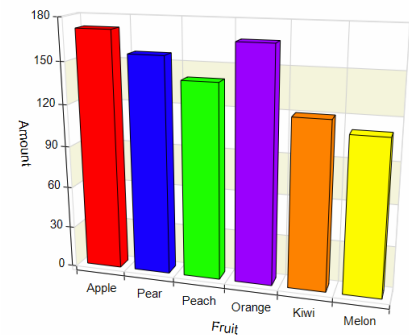
Example 1 – Creating a Simple 3D Bar Chart

This section presents an example of how to create a 3D bar chart of the data stored in the Fruit dataset.

Setup

To run this example, complete the following steps:

1   Open the Fruit example dataset
- From the File menu of the NCSS Data window, select **Open Example Data**.
- Select **Fruit** and click **OK**.

2   Specify the 3D Bar Charts procedure options
- Find and open the **3D Bar Charts** procedure using the menus or the Procedure Navigator.
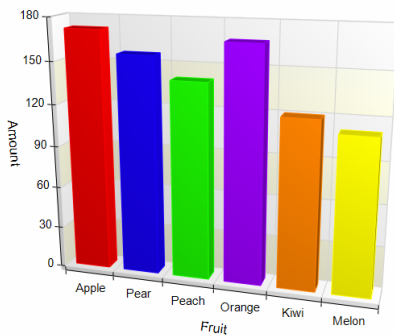- The settings for this example are listed below and are stored in the **Example 1** settings file. To load these settings to the procedure window, click **Open Example Settings File** in the Help Center or File menu.

Variables Tab

Data Variables ....**Total**
Label Variable..**Fruit**

Report Options (*in the Toolbar*)

Variable Labels...**Column Labels**

3   Run the procedure
- Click the **Run** button to perform the calculations and generate the output.

3D Bar Chart Output
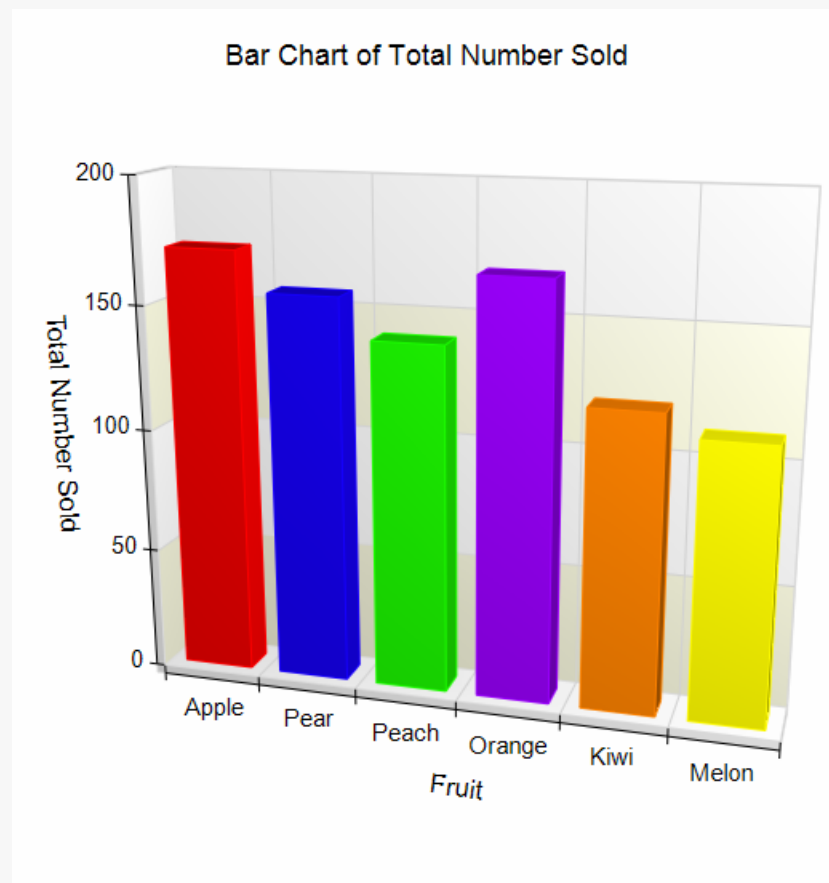
3D Bar Chart
_____

You could make all the bars the same color by clicking on the **3D Bar Chart Format** button. There you would click on the **Bar Fill** format button and change the **Fill Mode** from **Multiple Fills** to **Single Fill**. The result is shown below.
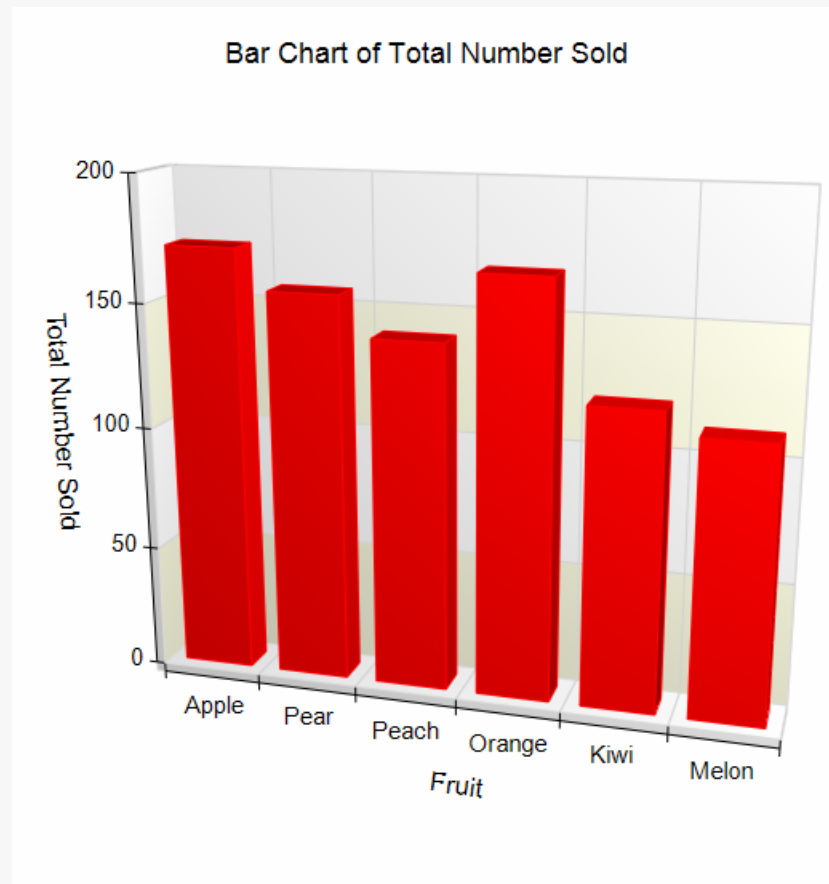
3D Bar Chart
_____

Example 2 – Creating a Two-Factor 3D Bar Chart

This section presents an example of how to create a two-factor 3D bar chart of the data stored in the Fruit dataset.

Setup

To run this example, complete the following steps:

1   Open the Fruit example dataset
- From the File menu of the NCSS Data window, select **Open Example Data**.
- Select **Fruit** and click **OK**.

2   Specify the 3D Bar Charts (2 Factors) procedure options
- Find and open the **3D Bar Charts (2 Factors)** procedure using the menus or the Procedure Navigator.
- The settings for this example are listed below and are stored in the **Example 2** settings file. To load these settings to the procedure window, click **Open Example Settings File** in the Help Center or File menu.

Variables Tab
_____

Data Variables ....**April-June**
Label Variable...**Fruit**

3D Bar Chart Format (*Click the Button*)
_____

3D Layout Tab
Z (Depth) Relative Dimension.........................**240%**

Numeric Axis (Y) Tab
Front Axis Label..**Number Sold**

Group 1 Axis (X) Tab
Front Axis Label..**Month**


3   Run the procedure
- Click the **Run** button to perform the calculations and generate the output.

3D Bar Chart Output
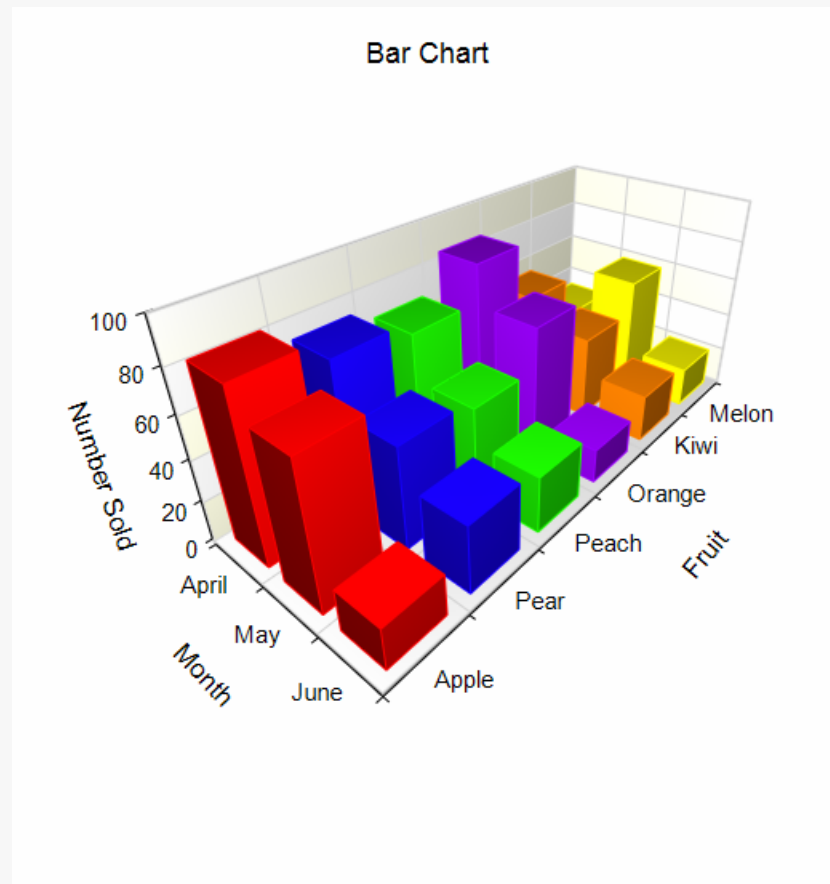
3D Bar Chart
_____

You can switch the factors by changing the **Data Orientation** to **Vertical**, the **Group 1 Axis Label** to **{X}**, the **Group 2 Axis Label** to **Month**, the **Z (Depth) Relative Dimension** to **100%**, and the **X (Width) Relative Dimension** to **200%**. The result is shown below.

3D Bar Chart
_____