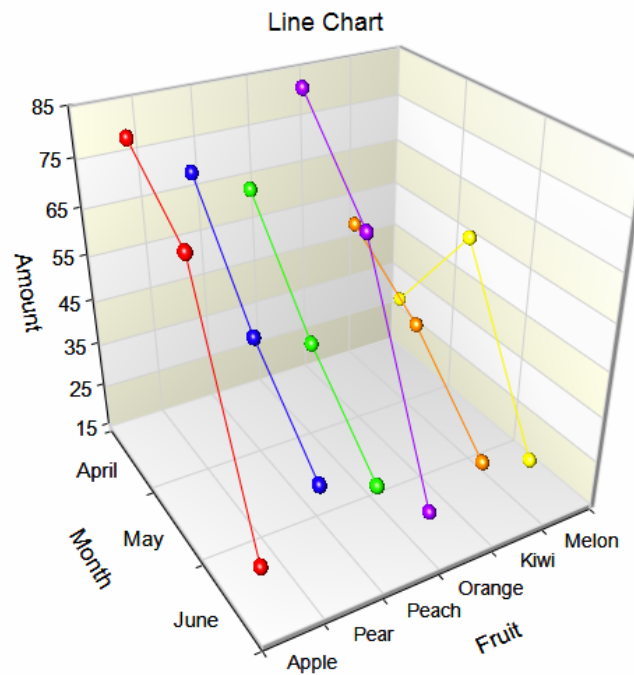Chapter 149

3D Line Charts

Introduction

Line Charts are used to visually compare values to each other. This chapter gives a brief overview and examples of simple 3D line charts and two-factor 3D line charts. The orientation of a 3D line chart may be vertical or horizontal. Below is an example of a vertical 3D line chart with two factors (Month and Fruit).

Data Structure

Data for a 3D line chart are entered in columns. Each numeric data value becomes a point. The simple 3D line chart procedure gives a 3D line chart for each column of data. The two-factor 3D line 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 Line Chart Window Options

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

3D Line Chart Tab

Plot Type Section

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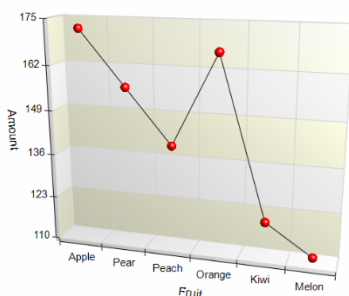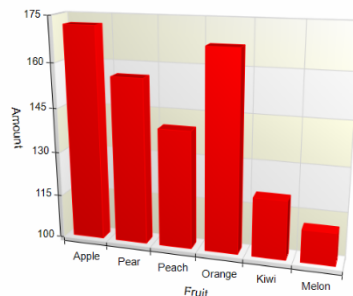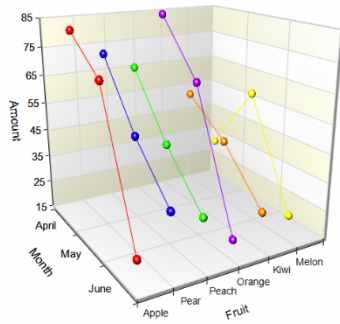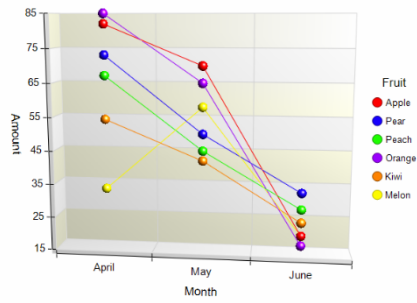
One Factor

Two Factors
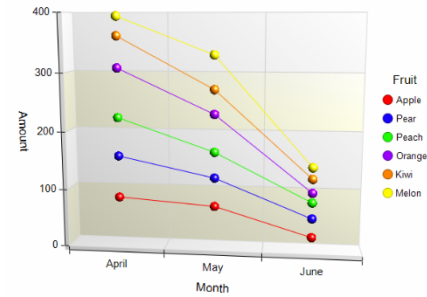

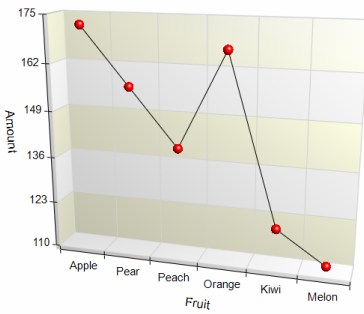## Symbols and Lines of Bars Section
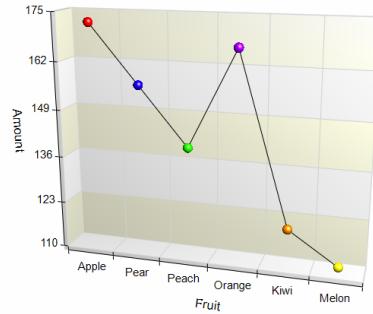
You can specify the format of either the symbols or the bars using the options in this section.
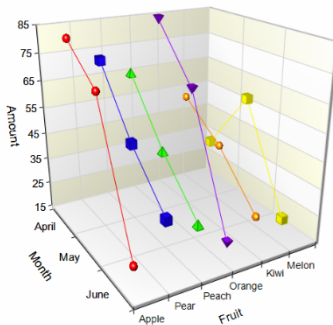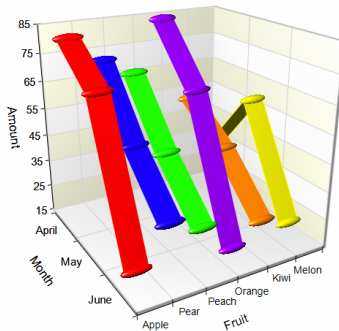
One Factor

Two Factors

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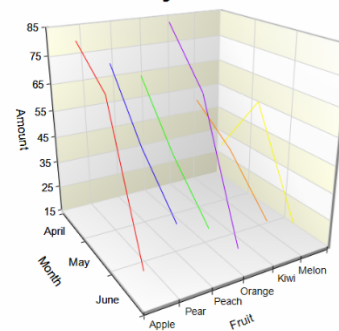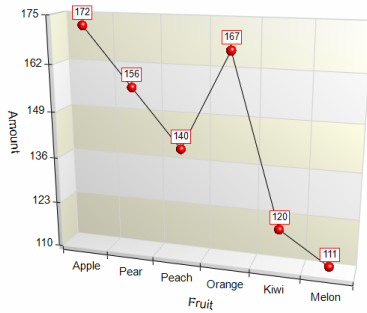
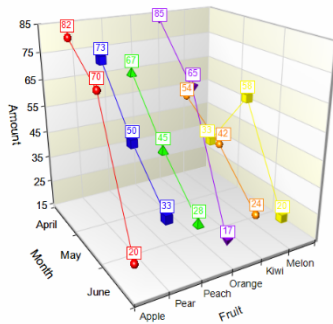You can add and format data labels using the options in this section.

One Factor

Data Labels - Outside

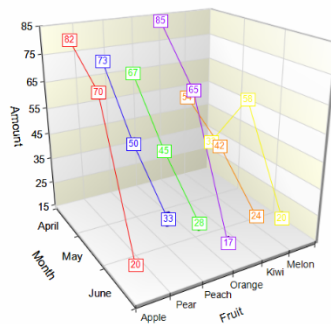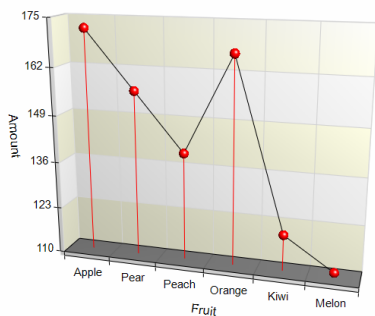### Two Factors

Data Labels - Automatic
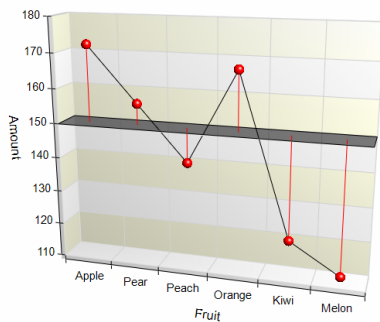

Data Labels - Center

Reference Value Section

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

Reference Value - Automatic

Reference Value at 150

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.

2D Display
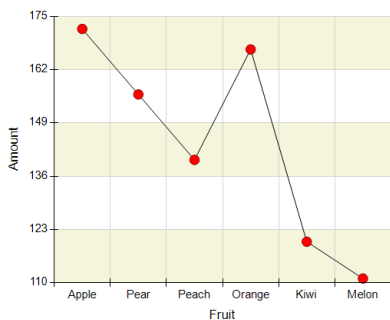
No Autofit, Zoom = 50%

Perspective Angle

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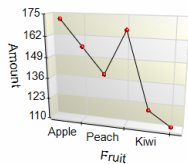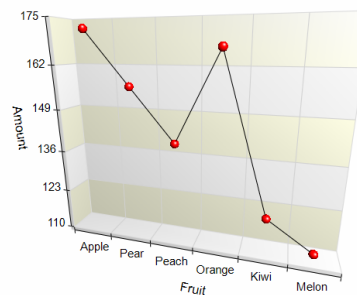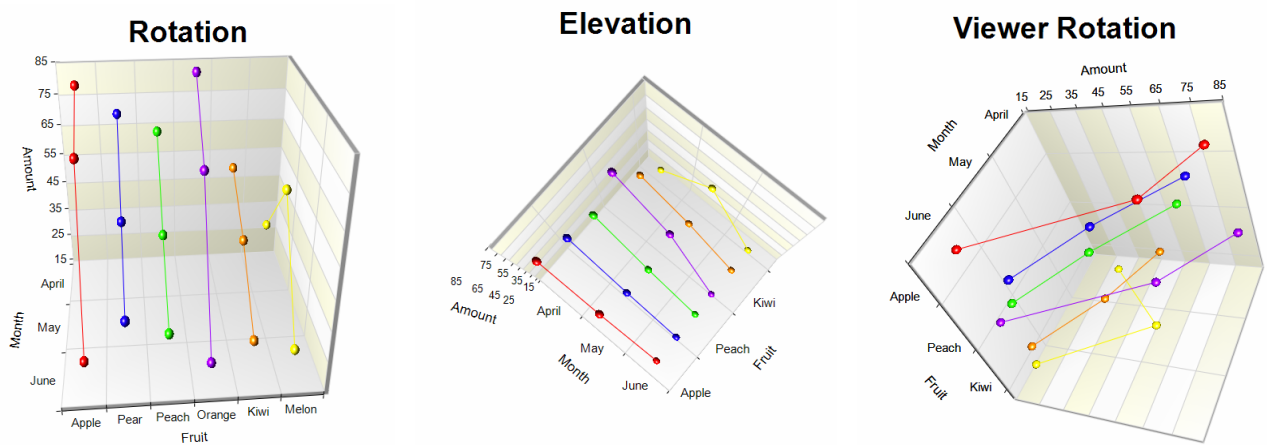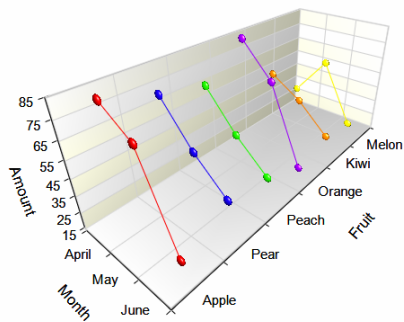
Control rotation, elevation, and viewer rotation of the 3D plot. You can modify the rotation and elevation interactively by left-clicking on the plot in the 3D Plot Preview display and dragging your mouse.

Relative Dimensions Section

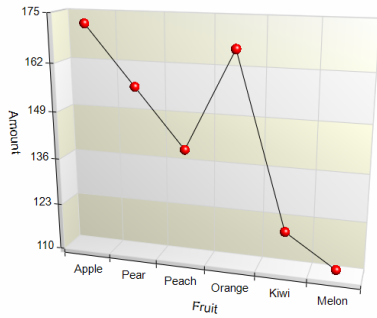Control the relative display dimensions for the X, Y, and Z axes of the plot.

Quick Layout Tools Section

Use these tools to quickly change multiple plot settings simultaneously to achieve a 3D display result.

Result of Clicking "Reset Zoom, 3D Orientation, and Dimensions"

Result of Clicking "Optimize for Horizontal Layout"
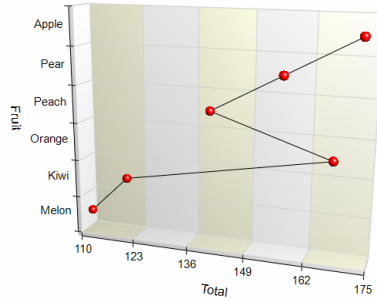
Result of Clicking "Optimize for Vertical Layout"
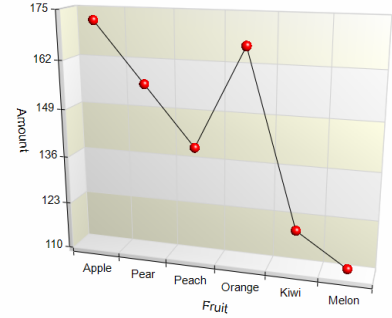
Load the Interactive 3D Plot Preview Window

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.

Wall Colors
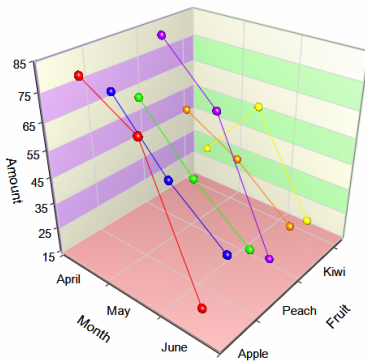
Wall Width
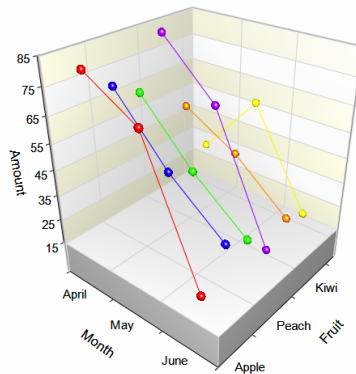
No Walls
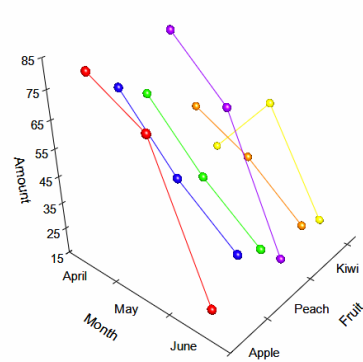
Titles, Legend, X Axis, Y Axis, Z Axis, Grid Lines, and Background Tabs

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.
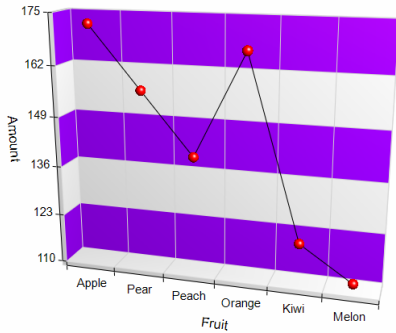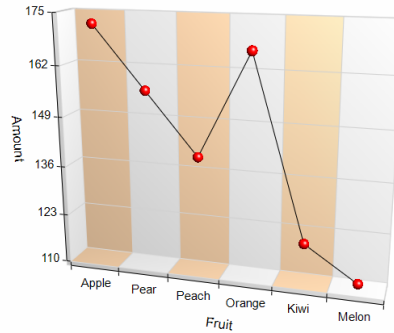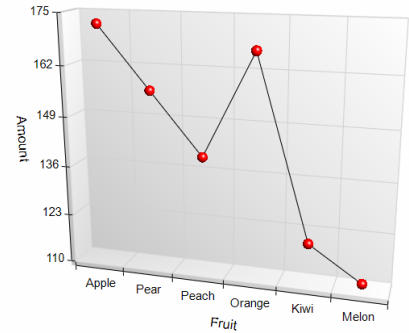
Lighting Scheme (on Background Tab)

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.
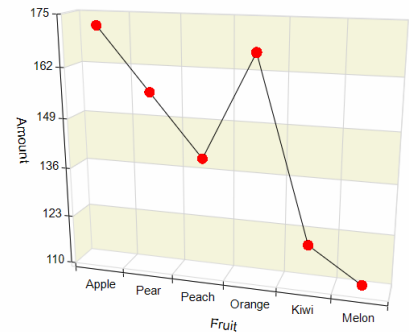
Example 1 – Creating a Simple 3D Line Chart

This section presents an example of how to create a 3D line 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 Line Charts procedure options
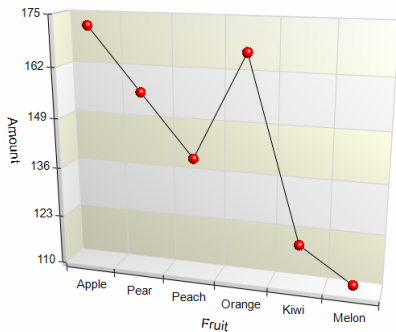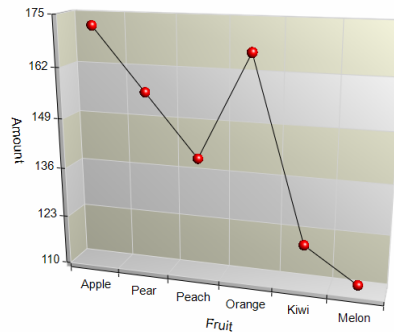- Find and open the **3D Line Charts** procedure using the menus or the Procedure Navigator.
- The settings for this example are listed below and are stored in the **Example 1** settings file. To load these settings to the procedure window, click **Open Example Settings File** in the Help Center or File 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 Line Chart Output

3D Line Chart
_____

Line Chart of Total Number Sold
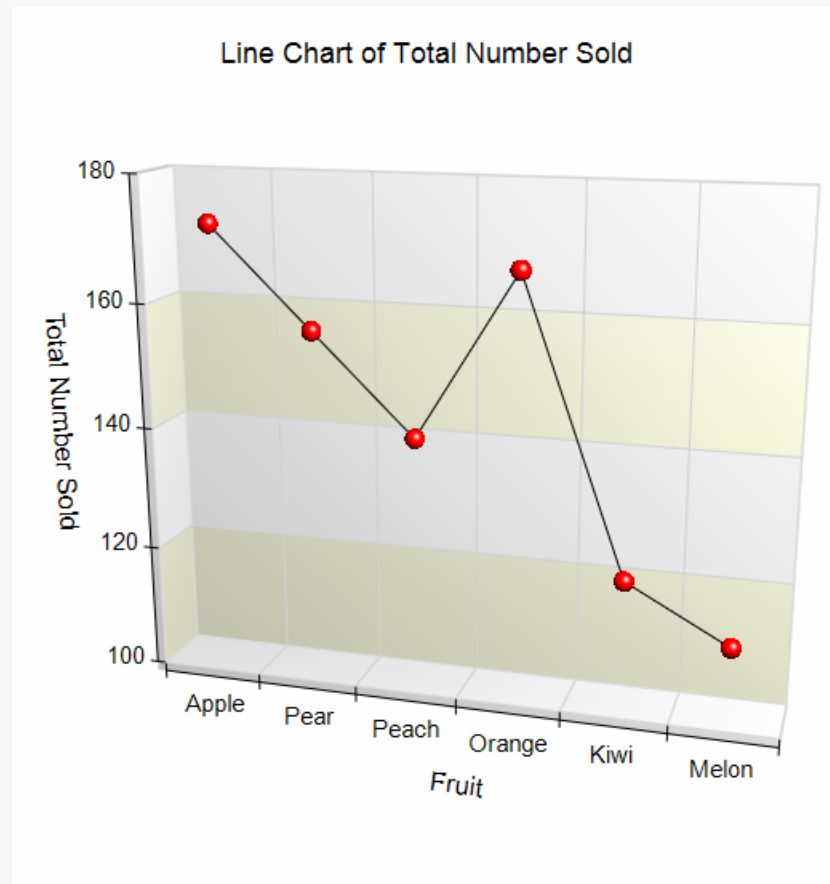
You could make all the symbols different colors by clicking on the **3D Line Chart Format** button. There you would click on the **Symbol Format** button and change the **Symbol Format Mode** from **Single Symbol** to **Multiple Symbols**. The result is shown below.
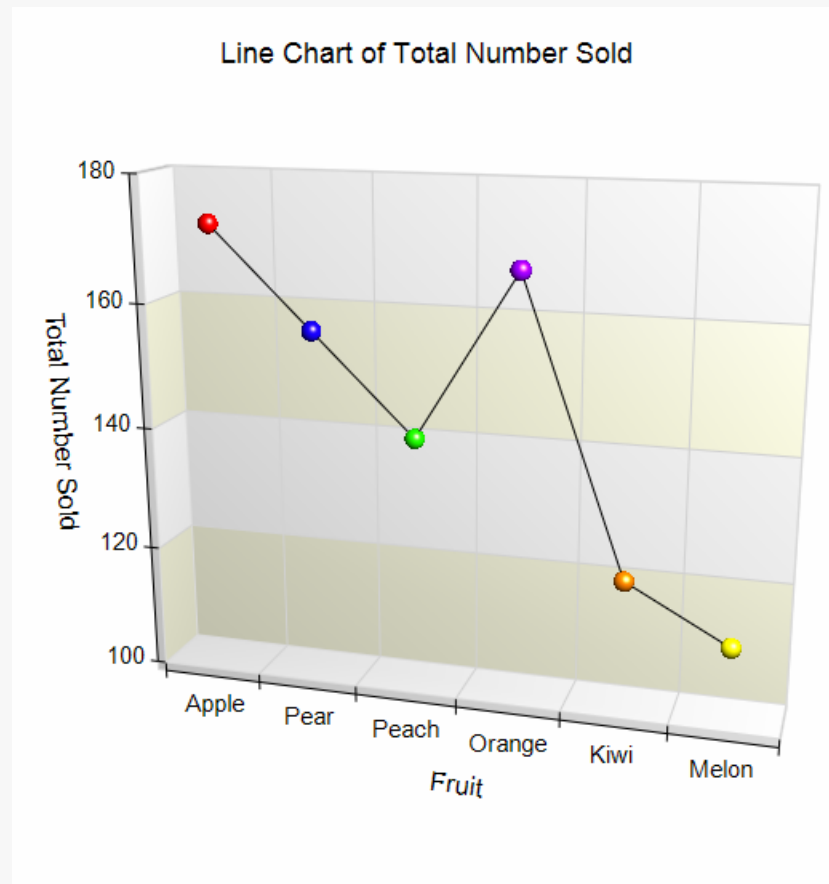
3D Line Chart
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Example 2 – Creating a Two-Factor 3D Line Chart

This section presents an example of how to create a two-factor 3D line 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 Line Charts (2 Factors) procedure options
- Find and open the **3D Line 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 Line Chart Format (Click the Button)

3D Layout Tab
Z (Depth) Relative Dimension.........................150%

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

Group 1 Axis (X) Tab
Front Axis Label..............................................Month
```
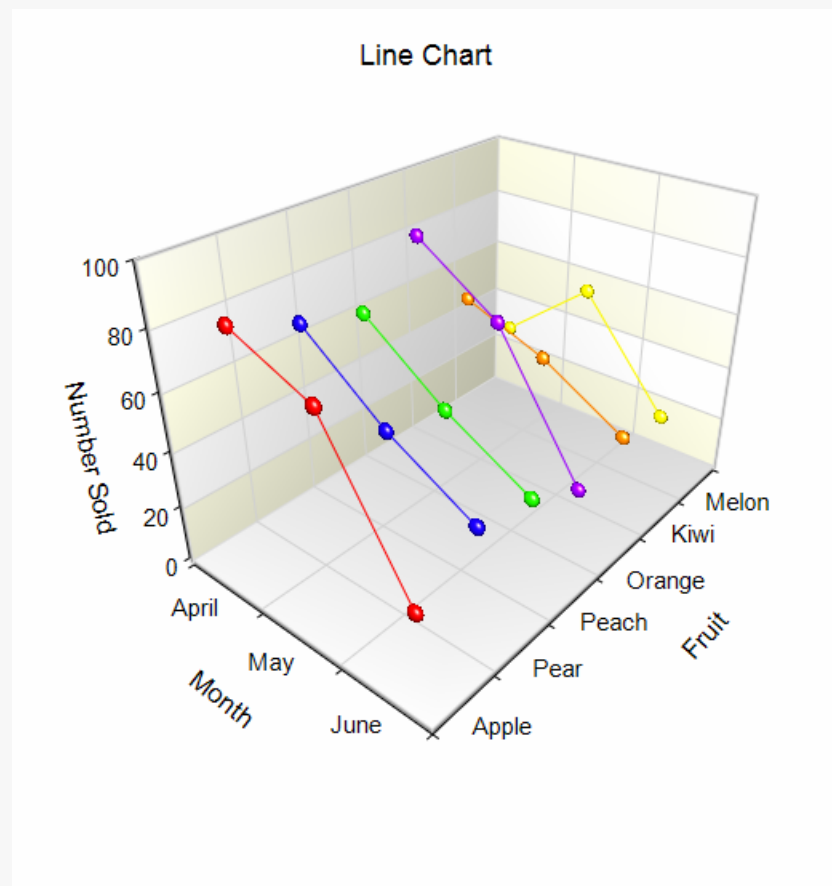
3   Run the procedure
- Click the **Run** button to perform the calculations and generate the output.

3D Line Chart Output

3D Line Chart
_____

3D Line Charts

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 Line Chart
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