

Demonstration Video

Grapher 7 - Part 2

2D Graphs

PART 2

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1. Welcome to the Golden Software's demonstration video for Grapher 7, Part 2. In this demonstration, I will cover the basics on how to create 2D graphs and some common editing of these graph types.
2. When you first open Grapher, a blank plot window will appear. This is the window where you can choose to create your graphs. Before you create a graph, though, you need to know something about how your data is arranged. You can do this in the worksheet window.
 - a. Choose **File | Open**. Verify that you are in the Samples directory. Select the SAMPLE2.DAT file and click the *Open* button.
 - b. Note that the second column has dates. This should be our data for our X column. The Y column can be either column C or column D. Let's use a combination of these columns by using a transform. Highlight Column E and choose **Data | Transform**. For the *Transform equation*, type $E=C+D$ and click *OK*.
 - c. Make any other changes that you desire to the data file. For instance, I am going to give Column E a column header.
 - d. You can close the worksheet if you want or you can simply click on the **Plot 1** tab. This will return us to the main plot window.
3. Before we create a graph, let's close the Worksheet Manager and zoom in on the plot window. You can click the X button next to the worksheet manager toolbar or you can choose **View | Toolbars/Managers** and click on **Worksheet Manager** to close it. You can then choose **View | Page** to see a larger plot window.
4. Now, let's create a graph. Choose the **Graph | 2D Graphs | Line/Scatter** command. Select the worksheet file. You can either click on the worksheet name in the file list or in the *Open worksheets* section of the dialog. And, click the *Open* button. After the graph appears, you can make any changes to the graph that you want. For instance, if we click once on the curve, we see in the property inspector that this graph is showing that the *X column* is Column A and the *Y column* is Column B. Let's change the graph so Column B is the *X column* and Column E is the *Y column*.
5. After the initial graph is created, there are several items that we can change or add to the graph. For instance, we can add additional curves, add fill, or add a fit curve.
 - a. Let's add a smooth fit curve to the graph to show a smooth line between the points.
 - i. To add a fit curve, click once on the Line/Scatter Plot 1. In the property inspector, open the **Plot** tab. Click the <Click here to add/edit fits> next to the *Fits* command. The **Fits** dialog appears. Select the *Running average* fit in the list of *Available Fits* and click the *Add* button. Click *OK*.

- ii. With the Line/Scatter Plot 1 still selected, open the **Line** tab. Change the *Style* to Invisible. You should now only see the fit curve.
 - b. We can compare another column of data to the curve already on the graph.
 - i. Choose **Graph | Add to Graph | Plot**. Select *Line/Scatter Plot* and click OK. Click OK in the **Choose Axes** dialog to use the same set of axes. Select the sample2.dat file and click *Open*.
 - ii. Change the *X column* to Column B and the *Y column* to Column C.
 - iii. Click on the **Line** tab to change the line properties for the new curve. Let's change the *Color* to blue.
 - c. Let's add fill to the graph. Fill can either go from a curve to another curve or from a curve to an axis or to an axis value. Let's show fill from a curve to an axis and between two curves.
 - i. To add fill from a curve to an axis, click once on the Line/Scatter Plot 2 object in the object manager. Click on the **Fill** tab in the property inspector. Change the *Foreground* color to blue. The curve is automatically filled from the line to the bottom axis.
 - ii. Now, if we want to fill between two curves, we can click on the Graph 1 object in the object manager. Click on the **Between Fill** tab in the property inspector. Click the *Add fill* command where it says <Click here to add a fill>. Then, change the *Plot one* to the Fit 1: Running average and the *Plot two* to the Line/Scatter Plot 2. Open the *Fill style* section. Change the *Foreground* to a new color, such as yellow. The fill goes between the two plots.
 - d. Now, let's zoom in on the plot to get a better look at what the graph actually looks like. Choose **View | Fit to Window** to zoom in on the graph.
 - e. Let's change the axes so that the X axis shows dates and the Y axis shows values. Click once on the X Axis to select it or click in the object manager on the X Axis 1 object.
 - i. Note the various options available for an axis. All of the settings that have to do with the actual label display, such as date time labels, are a label function. Click once on the **Tick Labels** tab to edit the labels. Scroll down in the property inspector until you get to the *Major Label Text* section. Check the *Use date/time format* box to turn on the display of date labels on your axis.
 - ii. Now, let's change the format for the date/time labels. Open the *Major Labels* section. Click on the *Label format* command where it says <Click here to set label format>. A **Label Format** dialog appears. Click on the **Format** tab. Change the *Date/Time Format* to mm/dd/yy. Click *OK* to make the change.
 - iii. Now, let's remove the date/time formatting on the Y Axis. These were put here by default due to the original Y data values. Click once on the Y Axis to select it. The **Tick Labels** tab is automatically selected since it was the last tab to be opened. So, you can simply scroll down and uncheck the *Use date/time format* box to turn off the display of date/time labels. The axis now shows numbers.
6. Final adjustments that you may wish to make to the graph include additions such as titles, text, legends, or background colors.
 - a. To explain your graph better, you may choose to add titles to either the axes or the graph.
 - i. It is obvious from the labels on the X axis that the X data information is date. However, the Y axis just appears as numbers. Let's add a title to explain it better. Click once on the Y Axis 1 to select

- it. On the **Axis** tab, open the *Axis title* section. Click on the <Click here to edit text> next to the *Title* command. Type in any text, such as “Sales” and click OK.
 - ii. You may also want to add a graph title. In this case, we don’t know what is being sold, so a graph title may help explain. Click on the Graph 1 in the object manager. In the property inspector, open the **Title** tab. Click on the <Click here to edit text> next to *Title*. Type in any text, such as “Sales of Online Books”. Click OK to make the graph title appear.
 - b. Adding legends sometimes explains how individual curves differ. Choose **Graph | Add to Graph | Legend**. A new legend is added. Since the legend is selected, we can change properties for it.
 - i. For instance, maybe the length of the lines in the legend are too long. Change the *Line length* to a smaller value, such as 0.60 inches.
 - ii. Maybe we don’t want the Line/Scatter Plot 1 to show since the fit curve is the curve we are actually displaying. Click on the *Entries* command where it says <Click here to edit entries>. Select Line/Scatter Plot 1 and click the *Delete* button.
 - iii. Another item we may wish to change in the **Legend Entries** dialog is the names of the curves. Click on the Fit 1: Running average and press the *Rename* button. Type in “Sue and Darren” and click *OK*. Click on the Line/Scatter Plot 2 and press the *Rename* button. Type in “Sue” and click *OK* in both dialogs.
 - iv. You may also wish to add color fill or a background shadow to your legend. You can add the color fill by clicking on the **Fill** tab and changing the *Foreground* color. I will change the legend to have a white background. You can add a shadow behind the legend by clicking on the **Legend** tab and checking the *Display shadow* box.
 - c. One final enhancement that makes your graph presentation ready is to add a background fill behind the graph. You can do this by drawing a filled object and moving it behind the graph.
 - i. First, choose **View | Page** so that the entire page is displayed.
 - ii. Now, choose **Draw | Rectangle**. Click on the screen and hold down the left mouse button. Drag the mouse to the other side of the graph and release the mouse button.
 - iii. Click once on the Rectangle 1 object in the object manager. Choose **Arrange | Move to Back** to move the rectangle object behind the graph object.
 - iv. Finally, in the property inspector, click on the **Fill** tab. Change the *Foreground* to the desired color for a nice background, such as this light yellow color.
 - v. You can choose **View | Fit to Window** to zoom back in on the objects.
7. I’m now going to close this Grapher file so that I can prepare for my next demonstration. Choose **File | Close** to close your file. I am going to click *No* when prompted to save the changes to the graph.

You can continue watching the training videos or you can begin working in the Grapher 7 program. An excellent place to start is the tutorial. To access the tutorial, open Grapher and choose **Help | Tutorial**.