

Demonstration Video

Grapher 8 - Part 2

Working with Data

PART 2

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1. Welcome to Golden Software's demonstration video for Grapher 8, Part 2. In this demonstration, I will cover the basics on how to open, edit, and transform data. I will also discuss statistics and how to create a graph from the worksheet.
 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 TUTORIAL.DAT file and click the *Open* button.
 - b. Note that the first column has a column header indicating dates. But, the actual values in this column are numeric. Since this should be our X column and we want it to automatically show dates, let's change the values in this column. Click in cell A2. Type 1/1 and press the Enter button. Note the date automatically appears.
 - c. Repeat the previous step for cells A3 through A13, typing each month, a slash, and the first date.
 - d. In these cells, the year is assumed, but we can change the format of the column to show the year. Highlight column A and choose **Format | Cell Properties**. Select *Date/Time* and set the desired *Date format*. Click OK. The dates appear in the column.
 3. Now that our data is properly formatted, we can make other adjustments. For example, the Y column can be any of the columns from B to column I. Let's use a combination of some of these columns by creating a transform.
 - a. Highlight Column K, the first empty column, and choose **Data | Transform**. The **Transform** dialog appears.
 - b. The very first item in this dialog is *Transform with*. Grapher can operate on columns, rows, or individual cells for a function. To change the transformed selection, change the *Transform with* to *Column variables*, *Row variables*, or *Cell variables*. For this exercise, let's set the *Transform with* to *Column variables*.
 - c. In the *Transform equation* box, delete the existing text. This box is where the equation that we want to use is typed. First, type in the column letter where you want the data to appear, K, and then an equal sign because everything after this will be the function.
 - d. Grapher has several pre-built functions that can be used. To see the list of equations, click the *Functions* button. Double click on a function to insert it into the equation. For instance, let's double click on the average, *AVG(A..Z)*, function. You'll notice that it automatically appears up in the *Transform equation* box.

- e. In the *Transform equation* box, highlight the *A..Z* text and change it to *B..I*. This will average the values in columns B through I to create the value in column K. The equation should now read $K = \text{AVG}(B..I)$.
 - f. Change the *First row* to row 2, the first row in our data with numbers in it. Change the *Last row* to row 13, and click *OK*.
 - g. Make any other changes that you desire to the data file. For instance, I am going to give Column K a column header in row 1 that reads *Data Average*.
4. If you would like to see any statistics on the data, you can highlight the desired columns and choose the **Data | Statistics** command.
 - a. Perhaps we would like to see what the minimum, maximum, and average value is for all of the values in Column K. To do this, highlight column K and choose **Data | Statistics**.
 - b. In the dialog that appears, make sure that *Minimum*, *Maximum*, and *Mean* are selected. Uncheck all other items.
 - c. I would like to use these values as grid lines for my graph, so I am going to place the values in worksheet cells. Select *Copy to worksheet* and set the *Starting in cell* to M1. Click *OK*. The minimum, maximum, and mean are shown in the worksheet column N.
 5. Grapher allows you to create graphs directly from the worksheet window. Highlight columns A through K. Now, choose **New Graph | 2D XY Graphs | Line/Scatter**. Note that all of the columns are used to create new line/scatter plots. Each plot has the same X value (Column A) and one of the Y values (Column B through K).
 6. Let's change some plot properties to highlight the items we added in the worksheet.
 - a. In the Object Manager, select *Line/Scatter Plot 10*. This is our average value plot which we can see because the *Y column* is column K. In the Property Inspector, open the **Line** tab and change the *Color* to Blue.
 - b. We can add the grid lines by clicking on the Y Axis 1 and clicking on the **Grid Lines** tab. Scroll down and check the *Worksheet grid lines* box. Click the *Worksheet* command and select the TUTORIAL.DAT file. Change the *Column* to Column N and the minimum, maximum, and mean values are shown as lines on the graph.
 - c. One final thing to notice is that the X Axis shows dates, exactly like we wanted. You can change the format of the dates by clicking on the X Axis 1 and clicking on the **Tick Labels** tab. Click the *Label Format* command where it says <Click here to set label format>. In the dialog, click on the **Format** tab. Change the *Date/Time Format* to the desired format and click *OK*. The axis automatically updates.
 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 8 program. An excellent place to start is the tutorial. To access the tutorial, open Grapher and choose **Help | Tutorial**.