

Making a Time Series Graph Using Excel 2016

Using Categorical Time Labels

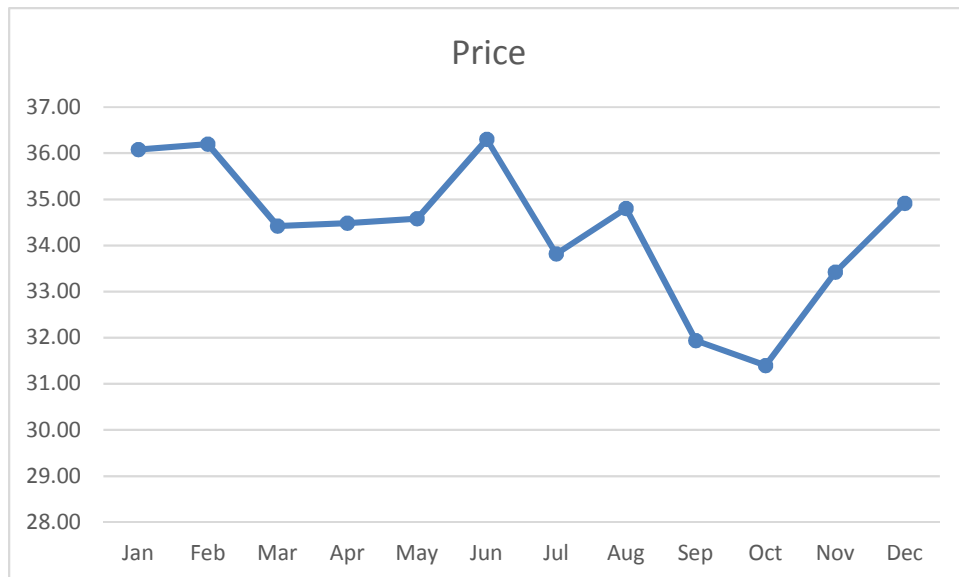
To demonstrate the procedure, we will use the end of the month stock prices in dollars for General Motors for 2014, accessed from <http://www.bloomberg.com/quote/GM:US> on January 18, 2015.

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Price	36.08	36.20	34.42	34.48	34.58	36.30	33.82	34.80	31.94	31.40	33.42	34.91

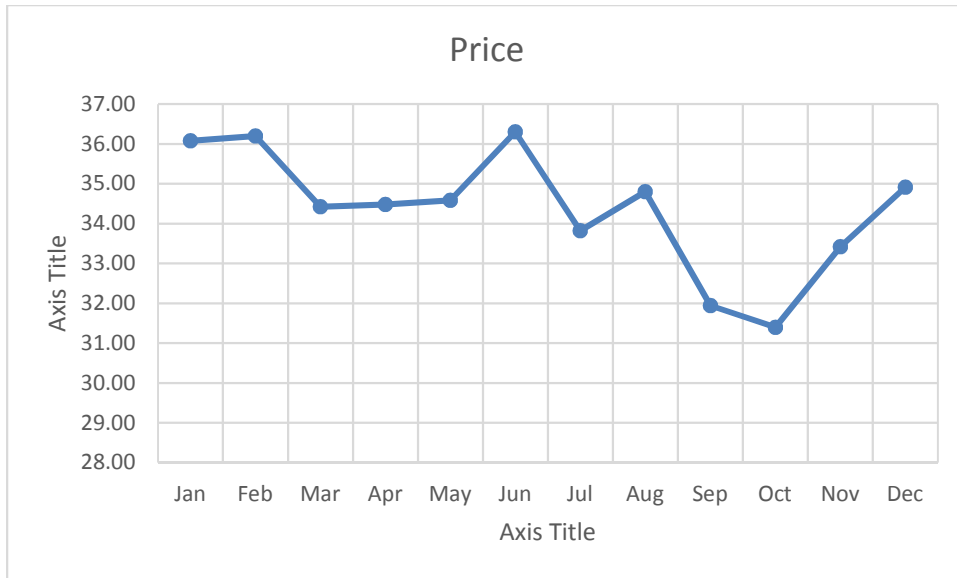
Open a blank worksheet in Excel 2016. Enter **Month** and the months under column A. Enter **Price** and the prices under column B. The result should look something like the following.

A	B
Month	Price
Jan	36.08
Feb	36.20
Mar	34.42
Apr	34.48
May	34.58
Jun	36.30
Jul	33.82
Aug	34.80
Sep	31.94
Oct	31.40
Nov	33.42
Dec	34.91

Next highlight everything you just entered and click on the *Insert* tab. Then click on the *Insert Line or Area Chart* icon and then choose *Line and Markers*. You should see a graph like the following.



Click on the plus sign (+) next to the graph, and make sure the boxes for *Axes*, *Axes Titles*, *Chart Title*, and *Gridlines* are checked. Highlight the row for *Gridlines* and click the arrow that appears. Make sure the boxes for *Primary Major Horizontal* and *Primary Major Vertical* are checked. The graph should now look like the following.

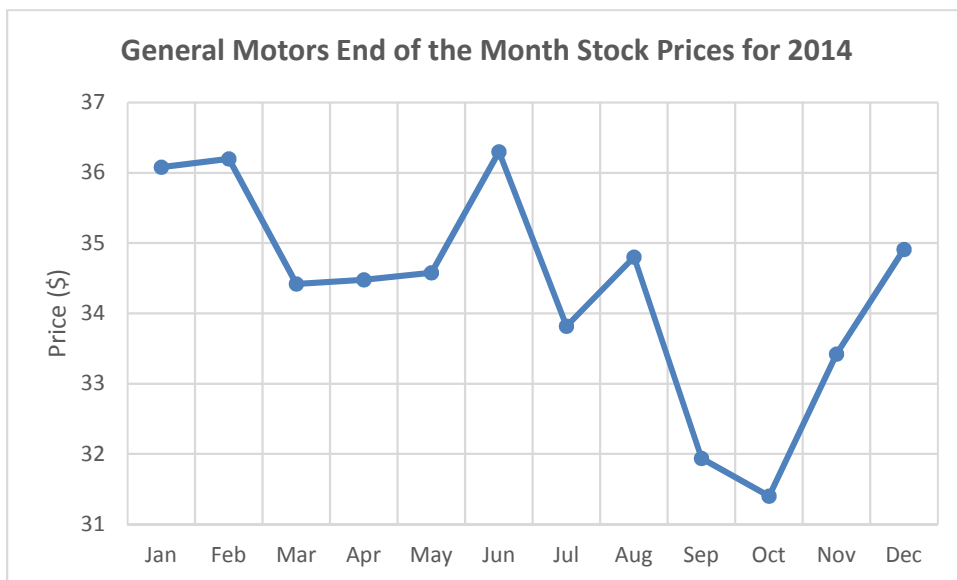


Right click on the vertical axis and choose *Format Axis*. We need to make two changes under *Axis Options*. Under *Bounds*, type in 31 for the *Minimum* and then press Enter to make the change permanent. Next click on *Number*, and next to *Decimal Places*, change the number to zero (0). Then click on the “X” to close the *Format Axis* window.

Click on the *Home* tab and then click on the title of the graph. In the upper left corner of the Excel window, change the font size to 12. The font size is next to the font descriptions – font descriptions are words or phrases like “Arial”, “Calibri (Body)”, “Franklin Gothic Medium”, “Myriad Pro” or “Times New Roman”. Then click on the **B** to make the title font bold.

Change the graph title to “General Motors End of the Month Stock Prices for 2014”. Change the vertical axis title to “Price (\$)”. Delete the horizontal axis title. Since the abbreviated month names should be recognized as month names, there is no need for an axis title.

Your resulting graph should look something like the following.



Using Measurement Time Labels

To demonstrate the procedure, we will use the US population data for 2000 to 2009 shown in the table below. The data was accessed on January 19, 2015 from the US Census Bureau website:

http://www.census.gov/popest/data/historical/2000s/vintage_2009/index.html

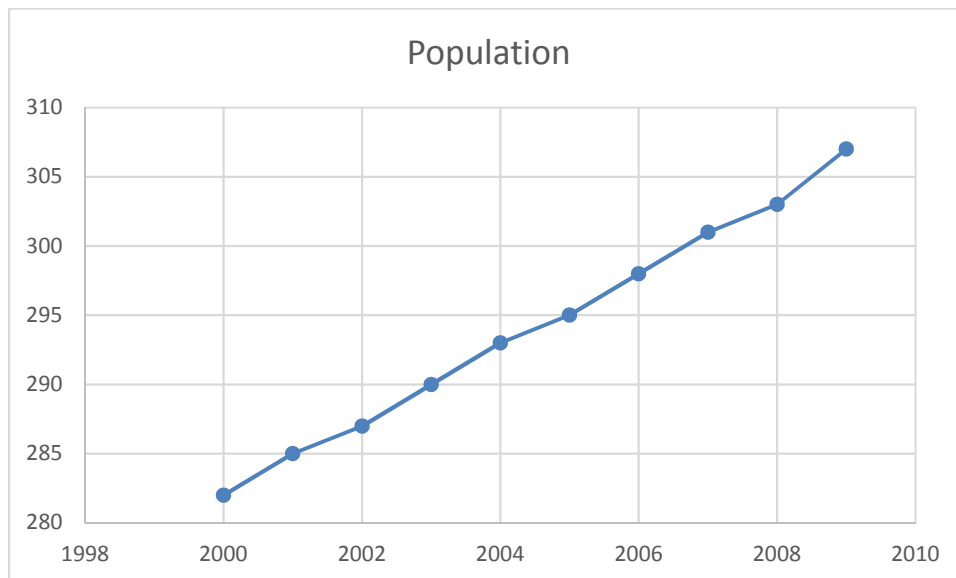
These values are U.S. population estimates on July 1st of each year, rounded down to the nearest million.

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Population	282	285	287	290	293	295	298	301	303	307

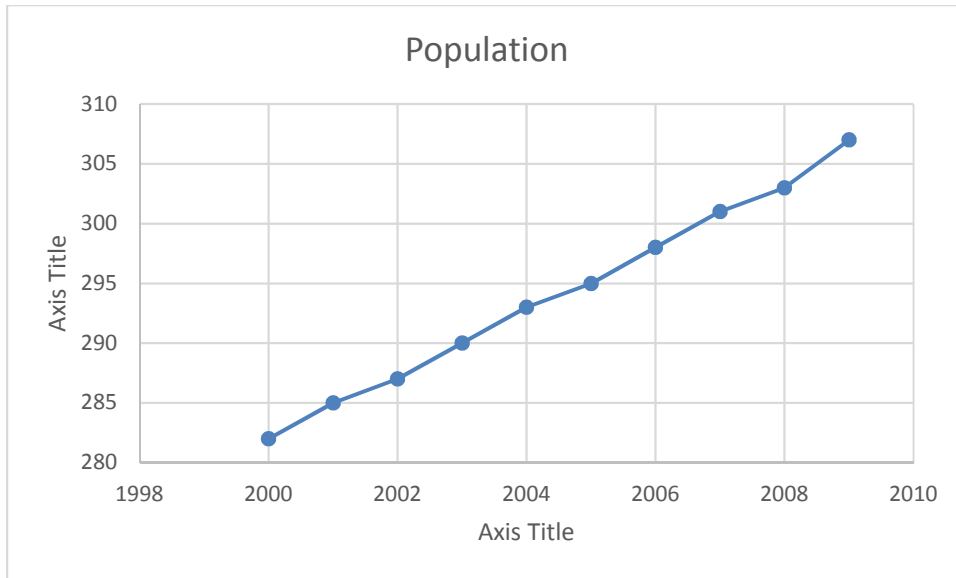
Open a blank worksheet in Excel 2016. Enter **Date** and the dates under column A. Enter **Population** and the population values under column B. The result should look something like the following.

A	B
Year	Population
2000	282
2001	285
2002	287
2003	290
2004	293
2005	295
2006	298
2007	301
2008	303
2009	307

Next highlight everything you just entered and click on the *Insert* tab. Then click on the *Insert Scatter(x, y) or Bubble Chart* icon and then choose *Scatter with Straight Lines and Markers*, the first icon in the second row. The following graph should appear.



Click on the plus sign (+) next to the graph on the right. Click on the check boxes for Axes, Axes Titles, Chart Title, and Gridlines. The graph will now look like the following.



Click on the chart title twice. If a window appears close it. You should now be able to edit the title. Change the title to “US Population from 2000 to 2009”. Change the vertical axis title to “Population (millions)”. Change the horizontal axis title to “Year”.

Click on the *Home* tab, and then click on the title. Change the font size to 12. The font size is shown next to the font descriptions. Font descriptions are words or phrases like *Arial*, *Calibri (body)*, *Franklin Gothic Medium*, *Myriad Pro*, or *Times New Roman*. Then click on the **B** to make the font bold.

Finally, right click on the horizontal axis and choose *Format Axis*. Change the *Minimum* to 2000, change the *Maximum* to 2009, and change *Major* under *Units* to 1. Then click on *NUMBER* and under *Category* choose *Number*. Change the decimal places to 0 and uncheck the box next to *Use 1000 Separator* (,).

Your finished graph should look like the following.

