

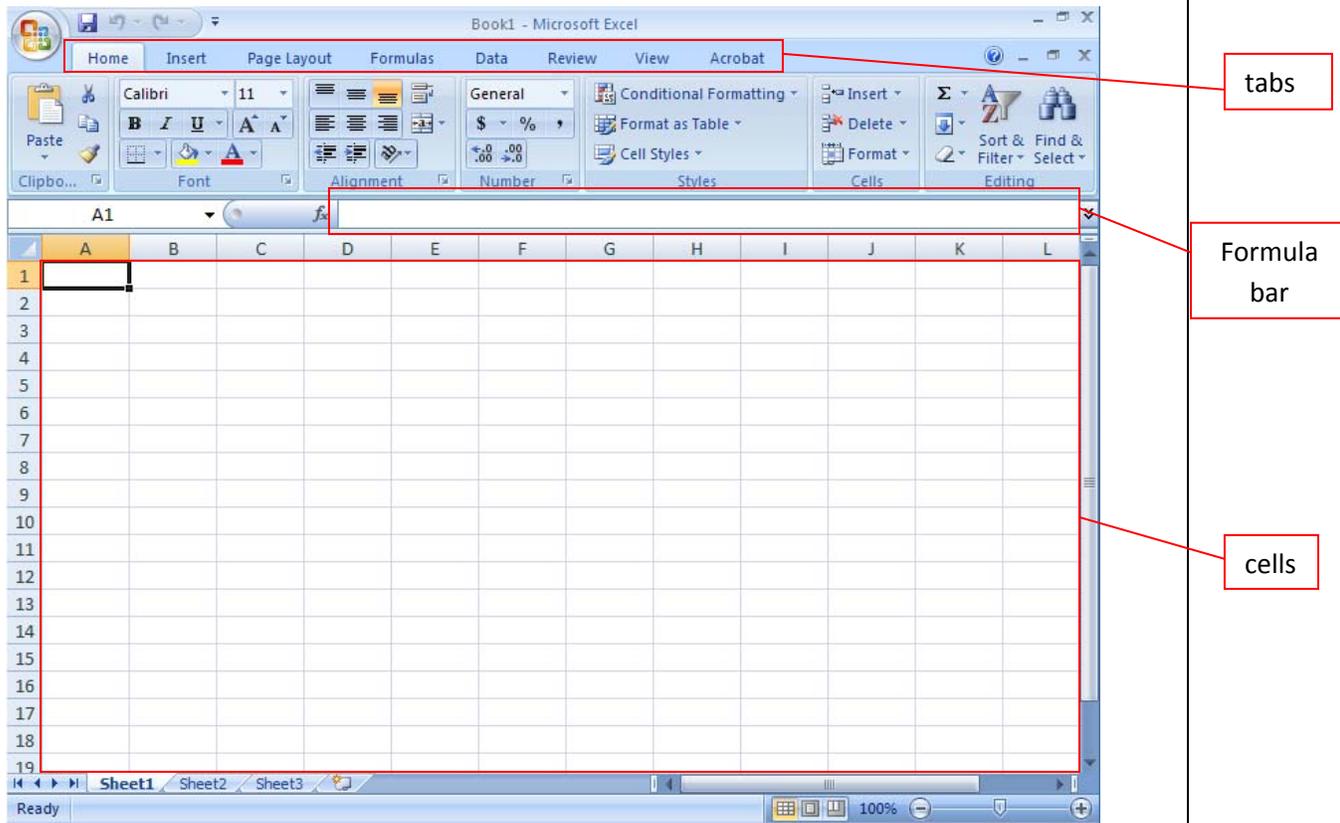
The goal of this assignment is to create a scatter plot of a set of data. You could do this with any two columns of data, but for demonstration purposes we'll work with the data in the table below. You will need to work with the data assigned to you. The final document you turn in will be two scatter plots of data that has been assigned to you.

The first column of the table is aligned to years after 1999 and corresponds to the years 1999, 2000, 2001, 2004, 2006, 2007, and 2008. The second column contains the number of doctors in the United States corresponding to each year. The third column contains the number of nurses in the United States corresponding to each year. The first row of data indicates that in 1999, there were 693,345 doctors and 2,271,340 nurses in the United States. For this demonstration we'll graph the Years after 1999 on the horizontal axis and the corresponding number of doctors on the vertical axis. Thus each row in the first two columns of the table will be graphed as an ordered pair like (0, 693345), (1, 708463), ..., (9, 822016).

Years after 1999	US Doctors	US Nurses
0	693345	2271340
1	708463	2249440
2	721034	2262020
5	780662	2421000
7	800586	2417150
8	816727	2468340
9	822016	2542760

Follow the steps below to create and modify a scatter plot of the data you have been assigned.

1. Start Excel.
2. Excel has many capabilities that allow it to do calculations and make different types of graphs. Along the top of the window are the tabs. As shown, the Home tab is selected. This tab contains many formatting options as well as the copy and paste buttons. Other tabs can be selected such as Insert, Page Layout, ect. Other tabs will appear as needed as you work in Excel.
3. The main part of Excel are the cells. The cells form a large table. For instance, the black box is currently in cell A1 meaning that it is in the column labeled A and the row labeled 1. You can click your mouse in other cells and see the location of the cell change in the label just above the cells.
4. Above the cells is the formula bar. This is where you will enter formulas you want Excel to calculate.



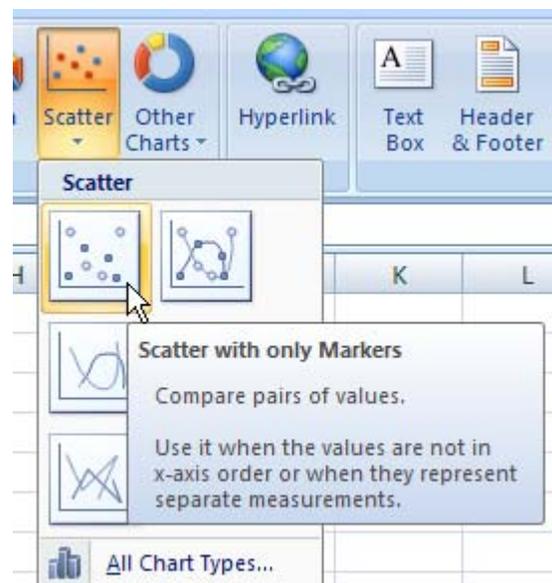
5. Enter the data from the first column of the table into column A. Simply type in the numbers.
6. Enter the data from the second column of the table into column B. Since there is no discernable pattern to the data, you need to type each data value in individually.
7. Enter the data from the third column of the table into column C.

H14			
	A	B	C
1	0	693345	2271340
2	1	708463	2249440
3	2	721034	2262020
4	5	780,662	2421000
5	7	800,586	2417150
6	8	816,727	2468340
7	9	822,016	2542760
8			
9			

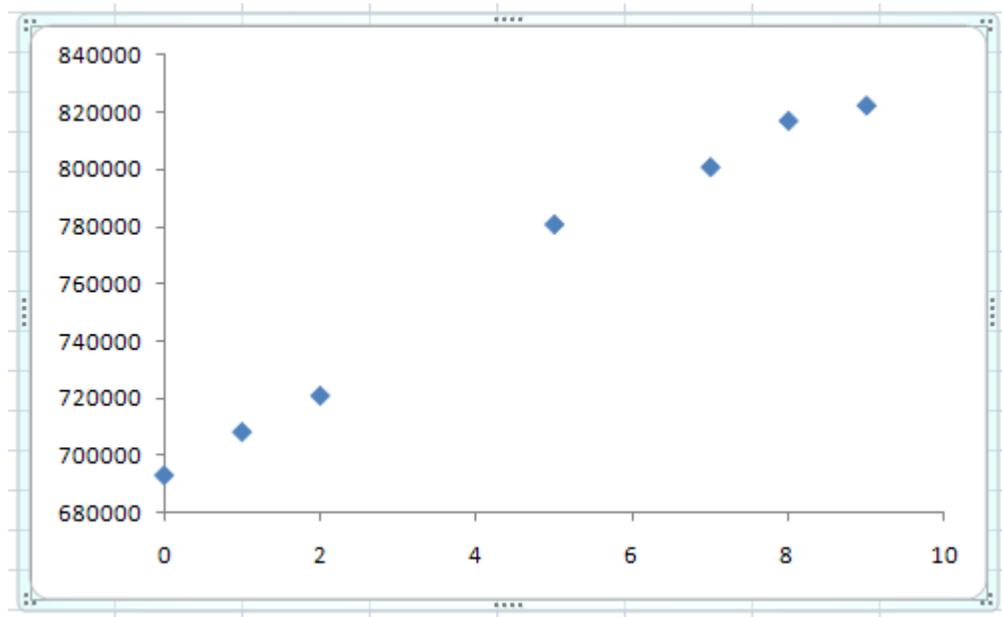
8. Left mouse click on cell A1. While holding down the mouse button, drag the mouse to cell B7 so that a selection rectangle covers all of the data you want to graph.

A1			
	A	B	C
1	0	693345	2271340
2	1	708463	2249440
3	2	721034	2262020
4	5	780,662	2421000
5	7	800,586	2417150
6	8	816,727	2468340
7	9	822,016	2542760
8			
9			

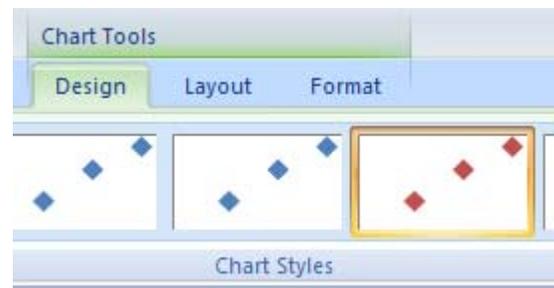
9. Click on the Insert tab at the top of the Excel window.
10. Under the Charts panel, select Scatter followed by Scatter with only Markers. This creates a scatter plot where the points are not connected by a line.



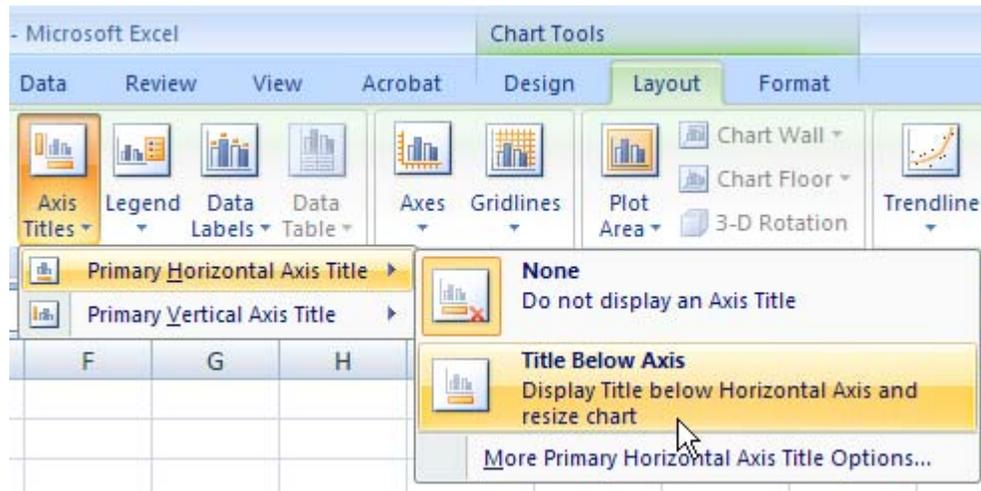
11. The scatter plot will appear in your Excel worksheet in an appropriate window.
12. Select the legend on the right of the graph and press Delete on your keyboard.
13. Select any grid lines on the scatter plot and press Delete on your keyboard. Your graph should be similar to the one below and not contain a legend or any gridlines.



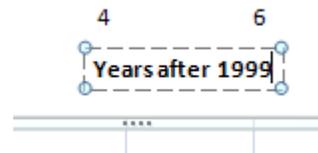
14. Use the mouse to left click on one of the data points in your graph. You'll notice that the points are selected and a tab called Chart Tools appears along the top of Excel.
15. Under the Design tab, try selecting different colors for the data points like the red points shown to the right. Many colors and sizes are available using the scroll bar on the Chart Styles panels.



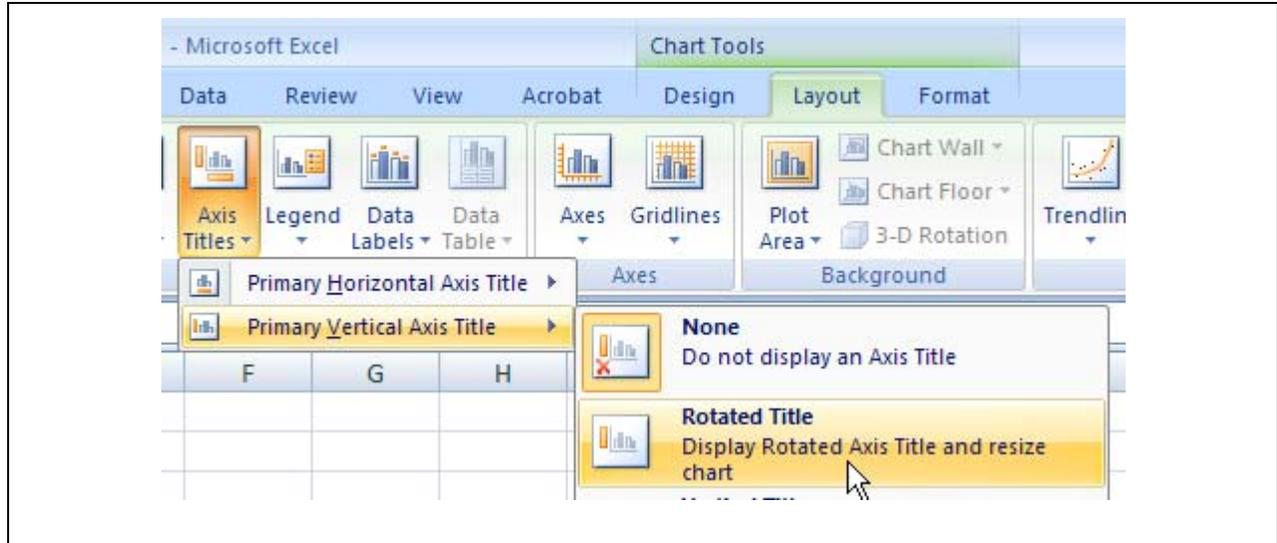
16. Click on the edge of your graph to select it. From Chart Tools, click on the Layout tab.
17. Under the Labels panel, select Axes Titles.
18. From the menu that appears, select Primary Horizontal Axis Title and finally left mouse click on Title Below Axis.



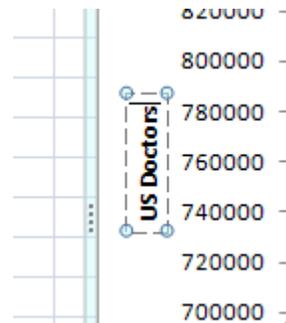
19. An axis title will appear below the horizontal axis. Double left mouse click on the axis title to select it and change it to an appropriate title for your graph.



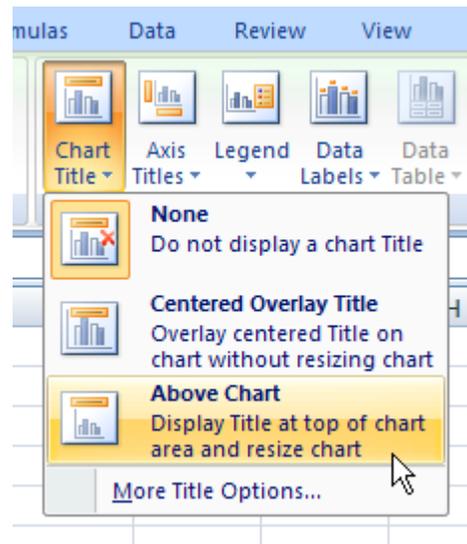
20. Click on the edge of your graph to select it. From Chart Tools, click on the Layout tab.
21. Under the Labels panel, select Axes Titles.
22. From the menu that appears, select Primary Vertical Axis Title and finally left mouse click on Rotated Title.



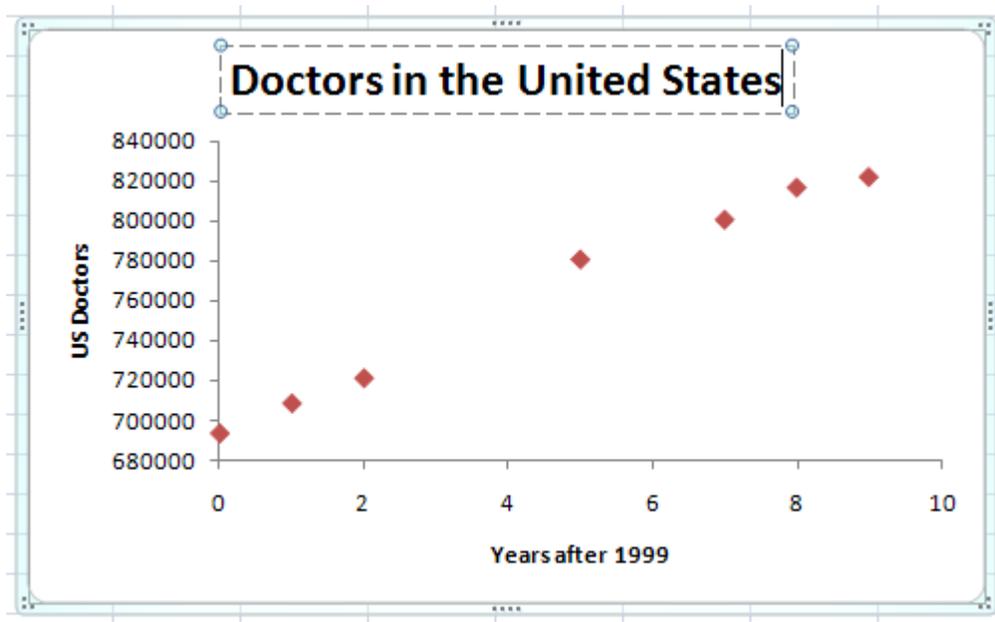
23. An axis title will appear to the left of the vertical axis. Double left mouse click on the axis title to select it and change it to an appropriate title for your graph.



- 24. The final addition to the graph you will make is a chart title. Click on the edge of your graph to select it. From Chart Tools, click on the Layout tab.
- 25. Under the Labels panel, select Chart Titles.
- 26. From the menu that appears, select Above Chart.



27. A chart title will appear above the scatter plot. Double left mouse click on the chart title to select it and change it to an appropriate title for your graph.



28. Next you need to copy your graph from Excel to word processing document in Word (or a similar program). Click on your graph to select it.

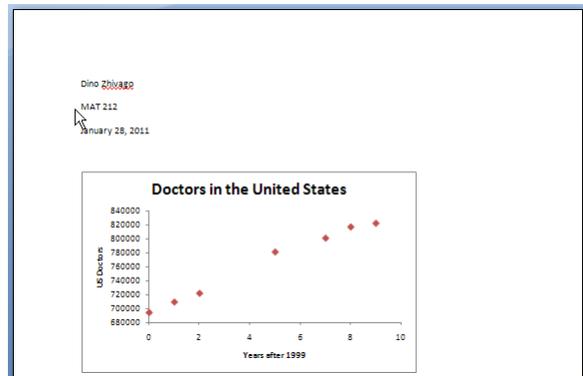
29. On the Home tab, left click on the Copy button to copy the graph to the clipboard.

30. Open Word (or another word processing program).

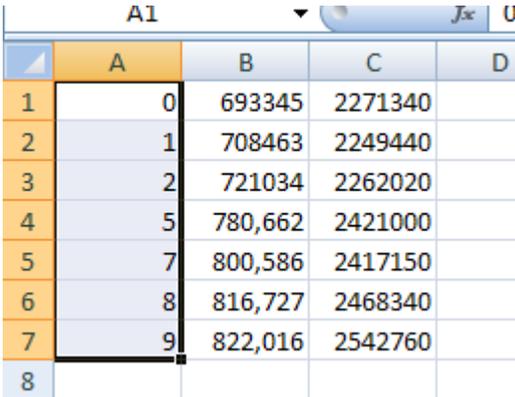
31. At the top of the document, type your name, class, and the date followed by a carriage return (Enter).

32. In Word, left click on the Home tab.

33. Select Paste to paste the graph into your Word document. Your document should look similar to the one shown to the right.



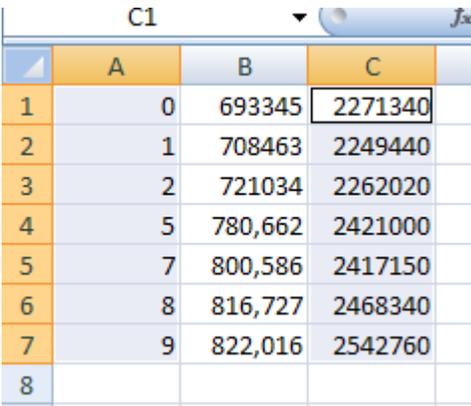
34. Now we want to create a second graph with Years since 1999 on the horizontal axis and nurses in the United States on the vertical axis. To do this we need to select the first and third columns of data in the Excel worksheet. However, since these columns are not side by side, we have to take some special steps to select them. Click in cell A1. While holding the mouse button down, drag the cursor to cell A7 and release the mouse button. This will select the data in column A.



The screenshot shows an Excel spreadsheet with columns A, B, C, and D. The active cell is A1. A vertical selection bar is visible on column A, extending from row 1 to row 7. The data in column A is highlighted in orange.

	A	B	C	D
1	0	693345	2271340	
2	1	708463	2249440	
3	2	721034	2262020	
4	5	780,662	2421000	
5	7	800,586	2417150	
6	8	816,727	2468340	
7	9	822,016	2542760	
8				

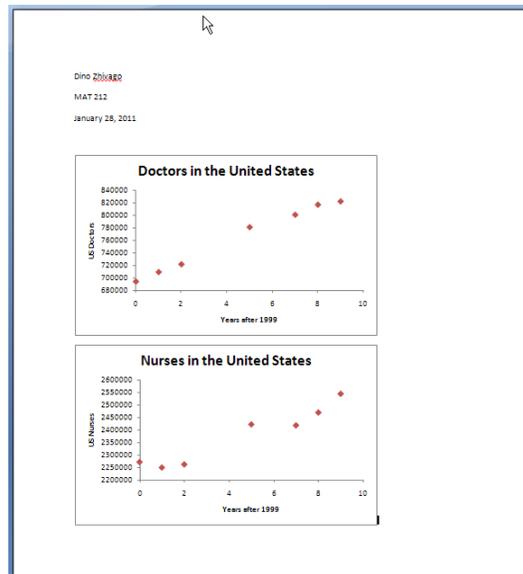
35. Hold down the Ctrl key on the keyboard. While holding the key down, click on cell C1 and drag the mouse to C7 to select the data in column C. The data in columns A and C will be highlighted in blue.



The screenshot shows the same Excel spreadsheet. Now, columns A and C are selected, indicated by blue highlighting. The active cell is C1. The data in column C is highlighted in orange.

	A	B	C	
1	0	693345	2271340	
2	1	708463	2249440	
3	2	721034	2262020	
4	5	780,662	2421000	
5	7	800,586	2417150	
6	8	816,727	2468340	
7	9	822,016	2542760	
8				

36. Repeat steps 9 through 29 to create a second scatter plot. You may need to click on the edge of the new scatter plot and drag it to a location in the Excel worksheet that is more convenient. When complete, your document should look similar to the one below but with the data you have been assigned.



37. Finally, you need to save this document to a convenient location. In the upper left hand corner of Word, left click on the disk icon.

38. Give the document an appropriate name and location and select Save.

39. You can also select the Office button to the left of the disk icon. This is useful to save the document with a new file name. In this case you would select Save As... and then give an appropriate name. If you are working on a document over several days, it is advisable to save the document with a slightly different name on each day based on the date. This allows you to recover earlier version of a document in case you need to refer to earlier work.

