

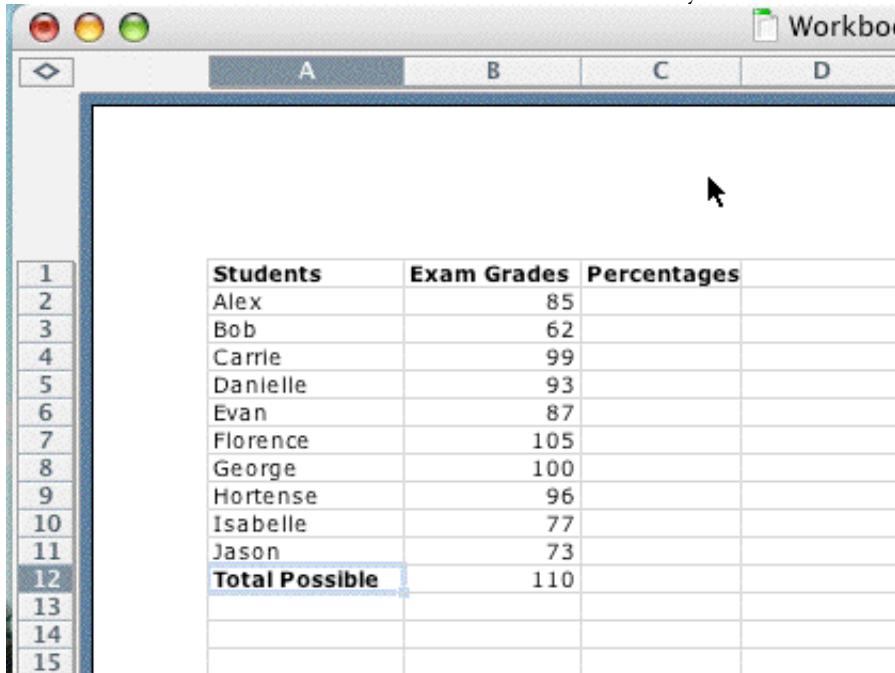
Statistics Group Project 1: Excel

1. Start Excel and download the datasets from:
<http://bcs.whfreeman.com/bps3e/>
2. Install the Data Analysis Toolpack if it is not installed already. (Look under the Tools Menu.)

A. Using Formulae

There are several ways to copy and paste formulae in Excel. For this project do the following to copy a formula from cell C2: Click once on C2 (you should not see a cursor in the cell). Press Control-C or Open Apple -C to copy the cell. Highlight the cells you want the formula in and hit Control V or Open Apple-V.

3. In a blank Excel worksheet enter numbers so that your worksheet looks like:



	A	B	C	D
1	Students	Exam Grades	Percentages	
2	Alex	85		
3	Bob	62		
4	Carrie	99		
5	Danielle	93		
6	Evan	87		
7	Florence	105		
8	George	100		
9	Hortense	96		
10	Isabelle	77		
11	Jason	73		
12	Total Possible	110		
13				
14				
15				

4. Formulas in Excel start with an “=” sign. In cell C2 enter the following formula:
`=B2/B12`
Hit enter and write down what Excel puts in the cell. This should be the percentage that Alex got on his Exam.
5. Copy and paste (using menu items or keyboard commands) the formula from C2 into all the cells from C2 to C12.
What happens in the other cells?

What is the formula that appears in C3? Explain what happened when you did the copy and paste.

6. Change the formula in C2 to read:

`=B2/B12`

Copy and paste it into cells C2 through C12.

What formula appears in C3 now?

Explain what happened.

7. Change the formula in C2 to read:

`=B2/B12`

Copy and paste into cells C2 through C12.

What is the formula in cell C3 now?

Explain what the \$ sign does.

8. What happens if you were to use the formula (after copying and pasting):

`=B2/$B12`

9. To get the average percentage for all the students, in cell C13 type:

`=AVERAGE(C2:C11)`

What is the average score?

10. To round the scores to two decimal places use:

`=ROUND(AVERAGE(C2:C11),2)`

Try it!

Now come up with a formula so that the percents will actually be written as percents (i.e. instead a decimal of .872 will appear as 87.2.) Still round your answers to 2 decimal places. Write your formula here:

11. Suppose that (for some reason) you wanted the total number of exam points for all the students. In cell B14 type
`=SUM(B2:B11)`
What is the sum?

12. It is important to be comfortable using Excel's help. Use Excel's help to figure out how to find the standard deviation of the student's exam scores. Write down the standard deviation here:

B. Histograms

12. Load the data for exercise 2.12 into Excel. (It is located in the Data Set folder under Chapter 2 and is called ex02-12.xls.

13. This data consists of the monthly fee paid by users of the Internet. What is the largest monthly payment? (Hint: Use `=MAX(A2:A51)`.)

What is the smallest monthly payment? (Hint: Guess an Excel formula that will tell you the minimum.)

14. Recall from class that to create a histogram we need equal sized bins. Excel can choose the bins for you, but it will almost always choose poorly.
Put the label "Bins" in cell B1.
Start with the minimum value in cell B2 and go up by 5s until you get to the maximum value (or larger.)

15. Under the Tools Menu, select "Data Analysis" and choose Histogram.

16. In the Input box enter A1:A51. You can also do this by highlighting those cells with your mouse. Try it!

17. In the Bins box enter the cells containing your bins, including the word "Bins". Check the "Labels" Box, since we've included the labels.

18. Check the "New Worksheet Ply". Give it a title if you want. Perhaps, "Histogram"? Also check "Chart Output". Press "OK".

19. You'll notice that what Excel outputs looks dreadful. We need to fix it considerably.

Start by dragging the chart so that it doesn't cross multiple pages.
Enlarge the chart so that it is a reasonable size.

20. Double click on one of the bars. Use the box that appears to do the following:

- a) Remove the shadow.
- b) Remove the Gap between bars. (Hint: Use "Options")

21. By clicking on various portions of the chart:

- a) Give the histogram, x axis, and y-axis useful labels.
- b) Remove the label that says "Frequency".

22. By now, your chart should look pretty good, except for the labels along the x-axis. These are dreadful.

a) Fix the alignment by double clicking on the numbers along the x-axis. Under the "Alignment" tab, change the angle to 90 degrees.

b) Each bin should be labelled with a range (since the numbers appear in the middle of the box). Up in Bins/Frequency table replace each number in the Bins column with a range. For example, replace "8" with "0-8" to indicate that that bar counts the number of households that pay between \$0 and \$8 a month for internet access. This range includes \$8 but not \$0.

If Excel changes your range into a date, highlight the cells and under Format choose "Cells..." Change the Format to "Text".

23. Print out your chart and staple it to this packet. Here is an acceptable Histogram:

