

CSU101
Spring 2008
Lab 3

To complete this assignment you must submit an electronic copy to your instructor by the due date. No printed output is expected.

Download the file **Lab3.xls** from the course web site. Then rename the file as *yourLastNameLab3.xls*. There are spaces provided on the first worksheet for your name and your instructor's name. Be sure to fill these in. Submit this file to your instructor using Blackboard when you have finished the assignment.

Task for Sheet 1:

In the first spreadsheet, sheet 1, we have data from Blackboard on former students in CSU101 sections. We have this information on 183 students. The data are found in B8:B190. Your job is to parse these data into three pieces of information: last name, first name, and middle initial. We then want to see the first character of the first name. Space is provided in the sheet in columns D, E, F and G for these answers, but you will need to use other columns for your calculations. The task is to be achieved by using suitable text functions to find the appropriate delimiters in each data value, and then use these delimiters to separate out the required parts. When you have a solution that works for the first and second cases, copy that solution into rows 10 through 190 in the appropriate columns. Make sure your solution works for someone without a middle initial, as well as with someone who has a middle initial.

We now want to know the number of first names in our data that begin with each particular letter of the alphabet, "A" through "Z". The answers begin at A200.

- First type "A" through "Z" in cells A203:A228. Next assign the name *firstInitials* to the range F8:F190.
- Then in B203 place a function that will count the number of occurrences of the letter in A203 appearing in *firstInitials*. There are 22 first names beginning with "A" in the data, so if your function is correct, it should return a 22.
- Now copy this function into B204:B228. You now know the number of first names starting with each letter of the alphabet.
- Calculate the percent of the total that each of these numbers represents, by summing the numbers in B229 (cf. labeled cell), and using this total in your calculation of each percentage. 26 percents should be reported, one for each letter of the alphabet.

Next we want to know how many of the people represented in the data have a middle initial? What percent of the whole have one? The answers go in H201 and H202. Of course, these answers are to be computed from the data automatically.

Task for Sheet 2:

In sheet 2 you are given the height in inches and the sex of sixty-one students, the data appearing in D5:E65. Your task is to **calculate** the number of females in the data, their average height in inches, and the standard deviation of their heights. Similarly for the males. The answers should appear in D69:E71.

Your solution to this problem should take into account the real possibility that the data could change, that more or fewer data pairs could be given. Thus your solution should work if a data row is removed, or if one is added in the middle of the columns of data.

Task for Sheet 3:

Use sheet 3 to solve the following problem:

A bank pays interest on a CD deposit where the interest rate depends upon the amount of money on deposit. The term of the CD is one year, but interest is compounded monthly. The interest rate is fixed once the CD begins, but the magnitude of the interest rate depends upon the amount of deposit. The bank pays 4% (per year) for deposits of up to and including \$1000, 4.5% for deposits from \$1001 to \$5000, 5% for deposits larger than \$5000 but smaller than \$25,000, and 6% for any deposit of \$25,000 and up. Design and build a spreadsheet that will calculate the principal and interest on any CD for every month of the year.

Design your spreadsheet with the following requirements in mind. The spreadsheet must show the value of a CD, i.e., principal and interest, for each month of the year. All inputs and results of calculation should be labeled. The four interest rates are parameters of the problem, and should be isolated from the main calculation. In this way, if they were to change, we would have a simple way to make the change. For any particular CD, the amount of the CD, what we are calling the principal, is also a parameter of a particular calculation. So, there must be a cell in the spreadsheet where this can be entered. Once that is done, no further changes are required and the results for each month should become evident.