Date Assigned: Tuesday, January 8, 2019
Date Due: Wednesday, January 9, 2019 3:00 pm
Points: 50

Goals: Build a worksheet, format data correctly, use named cells, build simple formulas, use built in Functions, build a table, and build a simple chart.

In a Workbook called **01ExcelPUNetID**, create each of the following worksheets:

Worksheet #1 (Name it ExamGrades)

I need to calculate student exam grades and perform some simple analyses of each exam question. Which questions were most difficult? Which questions were easiest? Which questions had the largest spread in answers?

The spreadsheet at the following URL allows me to perform the analysis I need. The spreadsheet has a column for each exam question and a row for each student.

You need to build the spreadsheet as shown.

http://zeus.cs.pacificu.edu/chadd/cs130w19/Assignments/Assignment1Question1Example.pdf

You must write formulas to calculate: Total Points, Student Score, Average, Median, Average Percent, and Standard Deviation. Use may use Excel functions to perform these calculations. I must be able to add information for students 1006 through 1010 and have your spreadsheet update all the calculated values correctly.

In a comment in cell T1, answer the following questions:

- Which question was the most difficult (students scored the worst)?
- Which question was easiest (students scored the best)?

In a comment in cell U2, answer the following question:

- Which question had the largest spread in answers?
- Explain exactly what data you used to make this determination.

You may add calculations to the spreadsheet to answer the above questions. Add these calculations below the table.

Make sure all of your data is formatted correctly. Numeric data and column headers for numeric data must be right justified. Text data and column headers for text data must be left justified. Any value that is a percent must not have any digits after the decimal point. Average and Median must have one digit after the decimal point, and Standard Deviation must have two digits after the decimal point.

Worksheet #2 (Name it Population)

A population of organisms grows based on the growth rate of the population. The population growth is limited by the carrying capacity of the environment. The carrying capacity is the maximum population size a particular area will sustain.   You will need to build a worksheet that calculates the total population of a group of organisms over time based on the following formula[1]:

Growth = Growth Rate * Current Population * (Carrying Capacity - Current Population) / Carrying Capacity

Allow the user to input the initial population, growth rate, and carrying capacity. Be sure to use Named Cells where appropriate.

Build a table to show the population for the first 25 years (year 0 to year 24) if the initial population is 50, the carrying capacity is 10,000, and the growth rate is 5%. Since we cannot have a partial organism, produce only integers in the Growth column.

The top of the spreadsheet must look as follows but you need to format the spreadsheet to make it look better:

Initial Population	50		
Carrying Capacity	10000		
Growth Rate	5%		
Year	Population	Growth	New Total Population
0	50	2	52
1	52	2	54

Formatting:
Headings need to be aligned correctly. Numeric data needs to be right aligned. All numeric data are integers.

Chart:
Below the table build a chart that graphs **New Total Population** and **Growth** for each year. Properly label the chart axes and legend. Be sure to give the chart an appropriate title. **BONUS**: Use a secondary vertical axis to graph the Growth. Appropriately label the primary and secondary axes.

How to Submit and Grading Policies
A copy of your single Excel file (properly named) with the two worksheets (properly named) is to be submitted to Moodle by **3:00pm** on the due date to be considered on time.

Grading will be based on:

- Correctness of your results   Completeness of your results
- Professional look of the worksheets as described above and discussed in class
- Ability to perform a what-if analysis by changing any of the user input data with accurate results computed and displayed in the worksheet.

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[1] http://www.brown.edu/Courses/BI0020_Miller/week/2/eco-1-handout.pdf