Homework 2: Formulas and Functions

Due: Tuesday, Sept. 20th by the beginning of class.
This is an individual assignment. Be sure to include you collaboration statement as specified in the submission instructions.

Exercise 1 Grade Calculation Worksheet

Problem Definition:

In this exercise, you will first create a worksheet for 10 students containing the following information.

<table>
<thead>
<tr>
<th>Name</th>
<th>Midterm</th>
<th>Quiz#1</th>
<th>Quiz#2</th>
<th>Quiz#3</th>
<th>Final</th>
</tr>
</thead>
</table>

All exams and quizzes are scored out of 100. The “Total Pts.” is calculated by adding the scores from midterm, final, and best two quizzes.

The grade for each student is determined by the following procedure:

a. If a student total is 100 or less, the student gets the failing grade F.
b. If a student total is in the range of 101-200, the student gets the grade D.
c. If a student total is in the range of 201-275, the student gets the grade C.
d. If a student total is in the range of 276-349, the student gets the grade B.
e. If a student total is 350 or better, the student gets the grade A.

Part 1: Modify the Spreadsheet

Create the worksheet described drawn above. Title your worksheet “Ex1-Grades.” Add two columns, Total Pts. and Grade, to the worksheet to calculate the final grade for each student according to the above rules.

Part 2: Draw the Flowchart

Add another worksheet to your workbook. Titled this worksheet “Ex1-Flowchart”.

Draw a flowchart to show the logic of the grade calculation. To draw the flowchart on your worksheet, select the location on your worksheet for drawing. Next, Windows: click the Insert tab. In the Illustration group of commands, click the Shapes button to bring up the menu of different shapes that you can choose and draw. Mac: Go to the Insert menu, then to the Picture submenu, and then to Shape which brings up a box of different shapes that you can use to draw. Now you can select shapes and draw them on your worksheet.
Exercise 2: Top 50 Billionaires Worksheet

In this exercise, you will use the file billionaires.xlsx (available on BB in the Resources section) to answer the following questions. Note that each column has a Name associated with it; use these names when composing your formulas. Your formulas should work regardless of whether data is added or subtracted from the spreadsheet (in other words, do not assume the table will always have the same number of rows/data). At the top of the data, in column F, write the number corresponding to the question asked. Then in column G, write the formula to determine the answer to the questions below.

1. What is the number of billionaires on the list who are United States citizens?
2. What is the average age of billionaires who are citizens of India?
3. What is the average net worth of billionaires on the list who are United States citizens and are older than 50?
4. What is the number of billionaires who hold citizenship in either Russia or the United States?
5. What is the number of billionaires who have a net worth of more than $30bil?
6. What is the number of billionaires who are younger than the average age of all billionaires on the list?
7. What is the number of billionaires who are not from China or the United States?
8. How many billionaires are over 80 years old, from the United States, and have a net worth of at least $7bil?
9. How many billionaires are between 50-70 years old and not from the United States?
10. What is the average age of billionaires who are from China or Germany?

Submit:

Save the workbook for the first exercise as hw02-lastname-exercise1.xlsx. Save the workbook for the 2nd exercise as hw02-lastname-exercise2.xlsx. Include your collaboration statement as a separate worksheet in the exercise 1 workbook.

Upload both workbooks to HW02 in BB. DO NOT create separate submissions for each workbook. Instead, upload both files to one submission in BB.