CS170 – Computer Applications for Business

Recitation Project

Due Date:	**Before 11:59 p.m. on the day of the Recitation Project**
Accept Until:	**Before 11:59 p.m. three days after the Recitation Project**
Evaluation:	**25 points**
Submit to Canvas:	**RecitationProject.xlsx file**

To get credit for this project:

1 Deliver the **RecitationProject.xlsx** file to Canvas on time.
2 Your TA should be able to open your file by clicking on its link.

Background:

This project is designed to practice the use of formulas, built-in MS Excel Functions, What-If Analysis. For this project, you will upload your Excel file to Canvas so that it can be accessed by just clicking on the file's link.

Directions:

- Follow the instructions listed on the next pages to create and complete the Recitation Project file.
- Enter your name on cell **A1** of the worksheet.
- Submit your **RecitationProject.xlsx** file to Canvas using the Canvas->*Assignments* link.

Instructions:

Grades spreadsheet

1. Go to Canvas → CS170 -> Grades page and then do the following:

   a) Start Excel, create a Blank worksheet.

   b) Select the cell **C3** on the worksheet and enter: **Assignment 1** on it.

   c) Select the **Fill Handle** on C3 and drag down to transfer the entry all the way to cell **C13.** You'll see that the numbers have been adjusted automatically and Assignment 2, Assignment 3, etc. appear on the C column. Ensure that **Assignment 11** is on on **C13**.

   d) Select the cell **C14** on the worksheet and enter: **Quiz 1** on it.

   e) Select the **Fill Handle** on C14 and drag down to transfer the entry all the way to cell **C22.** You'll see that the numbers have been adjusted automatically and Quiz 2, Quiz 3, etc. appear on the C column. Ensure that **Quiz 9** is on **C22**.

   f) Rename the worksheet as **Grades.**

   g) Type the following five entries on cells **C24** to **C28: Exam1**, **Exam 2**, **Instructor Extra Credit**, **TA Extra Credit**, **Recitation Project**.

   h) Add the following three entries to the list of activities on the C column (below C28): **Final Exam Part 1**, **Final Exam Part 2, Final Exam Part 3.**

   i) Starting on the cell **D3**, enter the **numeric** scores that you have obtained so far as listed in the **Scores** column of the **Grades** page.

   j) Starting on the cell **E3**, type the maximum number of points possible for each **Grades** Item as listed in the **Out of** column of the **Grades** page.

   - 2 points for Assignment 1

   - 25 points for the other Assignments (other than Assignments 9 and 10 which are worth 20 points) and the Recitation Project

   - 5 points for each Quiz (other than Quizzes 4, 6 and 7 which are worth 10 points)

   - 50 points each for Exams 1 and 2

- 25 points for each part of the Final Exam (simply ignore it if this entry is not listed yet)

- **Note**: **If there is an item for which you do not have a grade yet, do not enter the maximum points for it.**

k) On row 35 do the following:

- Enter the label "**Totals**" on **C35**

- The total points obtained will be calculated on **D35**. Since there might be some blank cells, an appropriate function for this cell is **SUMIF**.

  - Arguments for **SUMIF**:

    - **range**: the list of scores on the D column (including blank cells for the activities with no scores yet)
    - **criteria**: greater than or equal to 0 (express this using Excel notation)
    - **sum_range**: the list of scores on the D column (including blank cells for the activities with no scores yet)

- Copy the function from **D35** to **E35** using the fill handle.

l) On row 36:

- Enter the label "**Performance**" on **C36**.

- On **D36** enter a formula to calculate your **Performance %** by simply dividing your total points by the total maximum points (those numbers are on row 35).

- Format your performance with Percentage style with 1 decimal.

m) On **G3**, start a table of equivalences between **% points** (on the G column) and **letter grades** (on the H column). Use the following Grading table which is derived from the Grading section of the Syllabus (once completed the Grading table should start at **G3** and end at **H9**.)

0%	**F**
60%	**D**
70%	**C**
76%	**C+**
80%	**B**
87%	**B+**
90%	**A**

n) On row 37:

- Enter the label **Letter Grade** on **C37**.

- On **D37** insert the **VLOOKUP** function to calculate the current letter grade based on your Performance % and the Grading table created on **G3:H9**.

  - The arguments for the **VLOOKUP** function are:

    - **lookup_value**: your numeric performance % (from **D36**).

    - **table_array**: the table that converts percentages into letter grades which you created starting on G3.

    - **col_index_num**: 2 (since the second column contains the letter grades).

o) **What-If Analysis**:

- Now that you have calculated a letter grade for your current scores, you will run some simulation **Scenarios** to evaluate the possible effect of the Final Exam.

- The formula entered on cell **D35** which currently contains SUMIF needs to be modified to process the hypothetical Final Exam scores for each of its parts.

- To process the Second Chance option, the formula on **D35** needs to be expanded. Instead of just =SUMIF(…) the format will be:

  =SUMIF(…) + IF(…) + IF(…)

- The first **IF** that needs to be added – use the Formula bar to add it - will have the following arguments (use Excel notation; *value_if_false* does not need an entry):

  - **Logical_test:** 2 x Score of Final Exam Part 1 > Score of Exam 1

  - Value_if_true**: (**2 x Score of Final Exam Part 1) – Score of Exam 1

  - Value_if false:

At this point **D35** should have the following format:

$$=SUMIF(…) + IF(...)$$

- The second **IF** that needs to be added will have the following arguments (use Excel notation; *value_if_false* does not need an entry):

  - **Logical_test:** 2 x Score of Final Exam Part 2 > Score of Exam 2

  - Value_if_true**:   (**2 x Score of Final Exam Part 2) – Score of Exam 2

  - Value_if false:

At this point **D35** should have the following format:

$$=SUMIF(…) + IF(…) + IF(...)$$

- Some numbers have to be added to the rows where **Final Exam Part 1**, **Final Exam Part 2** and **Final Exam Part 3** are located.

  - On the D column of those rows place some hypothetical numbers (Example: 22 on each of those three cells).

  - The E column for those rows should have 25 on those cells since the maximum score for each part of the Final Exam is 25.

- At this point, the What-If Analysis may start. Click on **D37**, then on the **Data** tab → **What-If Analysis** → **Scenario Manager**.

  - Proceed to create at least three Scenarios with different data for the *Changing Cells* (the 3 cells on the D column with the hypothetical scores for the parts of the Final Exam).

  - The *Result Cell* when closing the **Scenario Manager** – by clicking on the **Summary** button – is **D37**.

p) After generating the Scenario Summary, save your work by using the *File → Save As* option and submit your file to *Canvas →* CS170 *→ Assignments → Recitation Project*.