Introduction

You are required to write a program in a single file called ass1_2017.m that does the grade calculation for CS2035. Normally the professor does this but he in incredibly lazy and so has out-sourced the job to you as assignment 1.

You are supplied with a file ass1_template_2019.m that contains much of the code you need to complete this assignment. Write the additional code needed to complete the commented tasks to get a working program. The tasks to complete this assignment are enumerated below:

1. Write the fprintf statement to print all the read data for each student. This statement should use appropriate formats to print character strings and numbers. For example, formats %s and %d (in their various forms) are needed.

2. Compute the lab_total variable for student i as the sum of all the labs, up to a maximum of 10

3. Compute the assignment grade as 9% for assignments 1 to 3 (multiple the assignment grades by 0.09) and 8% for assignment 4 (multiple the assignment grade by 0.08).

4. Compute the exam grade as:
   (a) If the student’s midterm mark is greater than his/her final exam grade, compute the exam_total variable as 0.2 of the midterm mark and 0.35 of the final mark.
   (b) If the final mark is greater than the midterm mark for the student then compute the final exam grade as 0.55 of the final mark.

5. Set the message character string for rule 1 (the 45% rule). Both the assignments grade and the exam grade must be 45% of the maximum values. If this is not satisfied, the course grade cannot be \( \geq 45\% \). Keep track of the number of times rule 1 is invoked for the fprintf statement at the end of the program (use variable rule1_no).
6. Set the message character string for rule 2 (the 60% rule). Both the assignments grade and the exam grade must be 50% of the maximum values. If this is not satisfied, the course grade cannot be $\geq 60\%$. Keep track of the number of times rule 2 is invoked for the fprintf statement at the end of the program (use variable rule2_no).

7. Set total and count variables for average calculations. The passed_course_total, failed_course_total and passed_course_ct and failed_course_ct variables are set below this comment as an example of what you have to do.

8. Compute the counts for grades $\geq 90$, $\geq 80$, $\geq 75$, $\geq 70$, $\geq 65$, $\geq 60$, $\geq 55$, $\geq 50$, in the range 1 and 49 and equal to 0 - this code requires a nested if-then-else statement.

Your program must be documented with good grammatical correct comments and your program should be nicely indented. The course webpage has examples of 2 well documented MatLab function examples, commented_new_decimal2roman.m and commented_new_roman2decimal.m. Use a block comment at the beginning of your program in ass1_2018.m that gives your full name (as it appears on your student card), your student number, your uwo email address and which assignment you are doing. For example:

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% John Barron %
% 123456789, barron@uwo.ca %
% CS2035, Assignment 1, 2019 %
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

would be my block comment. Also include a brief comment about what your program does (not done above).

The source code ass1_2019.m should be submitted via OWL by the due date. You know how to submit your assignment because you did the first lab! We will run your code while grading your assignment. It is necessary to follow the assignment specs to optimize your grade.