Background

This assignment covers most of the topics we've covered, including selection, repetition, and file I/O.

Problem Statement

You are provided a file, **EWA_07_random.dat**, which contains two columns of random numbers. The first consists of integer values from 1-12 and the second floating point values from 0-100. There are a lot of numbers in this file, too many to count. You are needed to determine the number of integers and floats, along with their averages over set ranges.

Instructions

Represent

- Create a flowchart, algorithm, or pseudo code for solving the problem.

Plan

- Create a file named **EWA_07.cpp**
- Copy the file **EWA_07_random.dat** from **`/srv/share/EED/engr1281/students/EWA/EWA_07`** to your current directory.
- Outline the steps your program will take by adding comment statements to your file based on the flowchart, algorithm, or pseudo code.

Implement

- In the file **EWA_07.cpp**, complete the following tasks:
  - Open the file **EWA_07_random.dat** and read in the integer and floating point values.
  - Open the file **EWA_07.txt** for writing.
  - Count the number of integer and floating point pairs (i.e., the number of lines).
  - Uses an if-else if selection structure for floating point values and a switch-case structure for integer values to find the averages over the following ranges:

Integer	Float
1 – 3	0 to <= 25
4 – 6	>25 to <= 50
7 – 9	>50 to <= 75
10 – 12	>75 to <= 100

  - Write the number of integer and floating point pairs to the screen and to **EWA_07.txt**.
  - For each range listed above, write the average of the integer values and the average of the floating point values to the screen and to **EWA_07.txt**.
- **Hint:** You will want to use a while loop to read the data from the file. You should look at the slides from the switch-case lecture and consider replacing grade = getchar () with an appropriate fscanf () statement. Additionally, you can look in Chapters 3 and 4 of your text for examples.
- **Another hint:** Get small pieces of the program working one at a time. Don't try to write the whole thing at once, for example, read the data from the file and count the number of lines of data, before you write the code to determine the averages for each range.

Evaluate

- Use Excel to verify and check your results for the averages.

Document

- Assemble all of your code, output, and documentation into a single PDF and submit to Carmen according to the DAL.

Include the standard comment and **`fprintf()`** statements indicating name, seat number, etc.