SE185: Problem Solving in Software Engineering
Quiz # 9 (100 points)

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Answer the following questions and make a pdf file that includes the **source code, sample inputs, and outputs**. You must submit the **pdf file and all of the .c files** on Canvas for full credit. Do not forget to add your group partner name on the pdf file and the source codes.

1. (100 points) Write a complete c program that ask users to enter four students name and their exam score for midterm 1, midterm 2, and final. Then your program:

- First, store this information in a text file name "student_data" and print the information's.
- Then, you program will read the information from the file that your program just created, and calculate the average of the three exams for each student.
- Finally, your program will print exam average for each student.

Note: Your program will create a text file, so you must include the source code (.c file), and the text file along with your submission.

Inputs and outputs format:

```
Enter student1 name and three exam score: Sam 87 95 78.6
Enter student2 name and three exam score: Sara 83.5 88 93.8
Enter student3 name and three exam score: Alex 78.2 82 87
Enter student4 name and three exam score: Robert 65 74.2 77
Sam exam scores = 87.00, 95.00, 78.60
Sara exam scores = 83.50, 88.00, 93.80
Alex exam scores = 78.20, 82.00, 87.00
Robert exam scores = 65.00, 74.20, 77.00
Sam exam average = 86.87
Sara exam average = 88.43
Alex exam average = 82.40
Robert exam average = 72.07
```

SS #1:

```
jesus@ASUS_GA503 /cygdrive/c/fall2022/se185/quiz09
$ ./question1
Enter student 1 name and three exam scores: Sam 87 95 78.6
Enter student 2 name and three exam scores: Sara 83.5 88 93.8
Enter student 3 name and three exam scores: Alex 78.2 82 87
Enter student 4 name and three exam scores: Robert 65 74.2 77
Sam exam scores = 87.00, 95.00, 78.60
Sara exam scores = 83.50, 88.00, 93.80
Alex exam scores = 78.20, 82.00, 87.00
Robert exam scores = 65.00, 74.20, 77.00
Sam exam average = 86.87
Sara exam average = 88.43
Alex exam average = 82.40
Robert exam average = 72.07
```

SS #2:

question1.c | student_data

C: > fall2022 > se185 > quiz09 > C question1.c

```c
#include <stdio.h>


typedef struct record{
    char name[20];
}srecord;

void main(){

srecord studentA[4];
srecord studentB[4];
float mid1A[4];
float mid2A[4];
float finalA[4];
float mid1B[4];
float mid2B[4];
float finalB[4];
float averages[4];
FILE* fp = fopen("student_data", "w");

    for(int i = 0; i < 4; i++){
        printf("Enter student %d name and three exam scores: ", i + 1);
        scanf("%s %f %f %f", studentA[i].name, &mid1A[i], &mid2A[i], &finalA[i]);
        fprintf(fp, "%s %.2f %.2f %.2f\n", studentA[i].name, mid1A[i], mid2A[i], finalA[i]);
    }

    fclose(fp);

fp = fopen("student_data", "r");
    for(int i = 0; i < 4; i++){
        fscanf(fp, "%s %f %f %f\n", studentB[i].name, &mid1B[i], &mid2B[i], &finalB[i] );
        printf("%s exam scores = %.2f, %.2f, %.2f\n", studentB[i].name, mid1B[i], mid2B[i], finalB[i]);
        }

    for(int i = 0; i < 4; i++){

        averages[i] = ((mid1B[i] + mid2B[i] + finalB[i]) / 3);
        printf("%s exam average = %.2f\n", studentB[i].name, averages[i]);
    }
}

```

SS #3:

question1.c | student_data

C: > fall2022 > se185 > quiz09 > student_data

```
Sam 87.00 95.00 78.60
Sara 83.50 88.00 93.80
Alex 78.20 82.00 87.00
Robert 65.00 74.20 77.00

```