

Programming Assignment 1:

Spring Festival – Phase 1

Phase 1 Due 11:59 pm Sunday, February 14th

1. Overview

This semester, you will work on a project called “Spring Festival”. This project is an exercise in time management and planning (i.e. writing algorithms) as much as it is an exercise in C programming. One of the most important lessons with programming is learning how to do things incrementally – breaking up a big program into smaller components and working on each component one at a time. If you do not get an early start on each phase, it is VERY LIKELY that you will find that you do not have enough time to complete the project.

The project will consist of 3 phases in all. This first phase is the “BBQ Competition”, which will involve the use of several C concepts up through Chapter 5, including loops & conditions, as well as printf and scanf, declaring variables, and using logical expressions.

2. Phase 1: BBQ Competition

Every spring there is a Spring Festival downtown. One event held at the Spring Festival is a BBQ Contest. For this year’s event, there will be 6 judges, and each judge will give a score out of 10, such as 7.5 or 9.0, etc. The lowest score is discarded and the remaining scores are averaged to determine the final score. If the average is 9.0 or above, the contestant gets a free t-shirt.

Write a program that does the following:

1. prompts the user for the 6 scores, calculating the total and the minimum score as it goes;
2. calculates the final score, after dropping the minimum one and averaging the rest together;
3. prints a message showing what the calculated score is;
4. prompts the user to see if they want to enter another set of scores, and if so, repeats the above steps;
5. prints a summary after all the scores are entered.
6. (Sample output is on the following page.)

You must ensure that a change in the number of judges will require only minimal changes in the program (in other words, you should have the number of judges as a variable that is initialized once at the top of the function).

Your program should compile without warnings and run correctly on the computer science Unix named machines. **Your file MUST BE NAMED `contest.c`.**

The code for your final project will be evaluated not only on its correctness but also on its adherence to the coding style standards. The handout “*Programming Assignment Requirements*” is provided on Blackboard under “Handouts and Other Info” as well as where the assignment appears in the Module. Don’t forget to use meaningful variable names, and don’t forget about indentation and comments.

3. Sample Output for Phase 1

The following is a sample run where user input is denoted in *italics*. Your statements to the user don't have to be exactly what I have below, as long as they are something that is informative to the user as to what is needed and what is going on.

```
- * - * - * - * - * - * - * - * - * - * - * - * -  
- * - * - * - * - *      BBQ CONTEST      * - * - * - * - * -
```

Enter the 6 scores:

7.5

8

9.5

10

7

8.0

The average score for that bbq dish is: 8.6

Do you have another bbq dish to enter scores for?

(Enter: 1 for Yes, 0 for No) *1*

Enter the 6 scores:

9.0

9.5

8.5

10

7.5

10

The average score for that bbq dish is: 9.4

That contestant wins a t-shirt!!

Do you have another bbq dish to enter scores for?

(Enter: 1 for Yes, 0 for No) *0*

```
- * - * - * - * - * - *      SUMMARY      * - * - * - * - * -
```

There were 2 bbq dishes in the contest.

1 t-shirts were won!

The average of the scores was 9.0

4. Notes on Collaboration

You are required to work individually on this assignment. **Please do not consult *anyone* other than me or the lab assistants or the tutor on *any* aspect of this assignment.**