Assignment #4

Problem Solving and Programming in C++
Department of Computer Science
Old Dominion University

Objectives: The main objective of this assignment is checking students' ability to implement membership functions. After completing this assignment, students will be able to:

- implement member functions
- convert a member function into a standalone function
- convert a standalone function into a member function
- call member functions
- implement constructors
- use `structs` for function overloading

Notes:

- Please note that this assignment is split into two parts (*Part-A* and *Part-B*)
- For this assignment, you will create two projects and submit two zipped files (Assg4A_cslogin and Assg4B_cslogin) containing your code for the two parts.

Part-A (*85 marks*):

Problem description: In this assignment, we will revisit **Assignment #1** "*the example of a restaurant that is attempting to run its storehouse more efficiently*". You will need to modify the program such that the company can make some critical decisions, including processing the received inventory of condiment, food, and plastic items. You may use the solution posted, or your own solution to complete this. This assignment needs the structs employee, condiment, food, plastic item, and date.

Processing inventory: The company wants to organize its inventory by cost from least to greatest. If the price of two items is the same, either one can be displayed first. You must use a member function of the appropriate corresponding `struct` to perform the comparison. Lastly print all items in order by cost. You will need to save the output into a text file named *SequencedOrders.txt.*

You must use constructors to initialize all data variables in `structs` with default values at the beginning of the program. Use of global variables will incur a deduction of 10 points from your total points.

Please check the attached "Grading Rubric" for the grading criteria.

Submission notes for part A:

- Submit the entire project folder which includes all files from your project, especially the .cpp, .h, and .cbp file(s).

- Zip the project folder and name it as "Assg4A_cslogin", where the cslogin is your login ID for the computers at the Department of Computer Science at ODU. To zip the folder, Right click on it and select "send to" and then click "compressed (zipped) folder".

- Submit the zipped file to the respective Blackboard link.

Part-B (*15 marks*):

Start a new Code::Blocks project for Part-B. Your task for this portion of the assignment is to choose one of these member functions which you used in part A of this assignment to perform the comparisons and make it a non-member function. You will need to make the appropriate changes accordingly. Your program should compile and run. The user of the program should not notice any difference when running the program with any of your implementations for ***Part-A*** and ***Part-B*** of this assignment. Clearly comment which function has been turned into a non-member function.

Please check the attached "Grading Rubric" for the grading criteria.

Submission notes for part B:

- Submit the entire project folder which includes all files from your project, especially the .cpp, .h, and .cbp file(s).

- Zip the project folder and name it as "Assg4B_cslogin", where the cslogin is your login ID for the computers at the Department of Computer Science at ODU. (To zip the folder, Right click on it and select "send to" and then click "compressed (zipped) folder")

- Submit the zipped file to the respective Blackboard link.