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**ELET 4309 Dr. F. Attarzadeh**

**60 Points Due 03/28/2019 03/19/2019**  **9 PM**

***It is very important that you read the notes at the end of each assignment for this and all other assignments.***

Develop an object-oriented model and then write a C++ program as explained below. You will be using classes and objects, and appropriate member functions, constructors, destructor, etc. to handle the tasks outlined below.

Develop a **C++** program that declares three classes. The first class is named ***General*** and will contain the following data member in the private access region:

**Manufacturer** - PC manufacturer

**Model** - PC Model

**Model Year** - Year Manufactured

The second class is named ***Spec*** and will contain the following data members in the private access region:

**Registration Number**  - PC Registration Number

**Owner** - PC Owner

The third class is named ***PC*** and will contain objects of the other two classes as its members ( declared in the private access region). This class is an example of ***has a*** relationship.

You will declare and define all member functions for all three classes as needed, including constructors and destructors.

Declare two objects of the class ***PC***  named ***pcOne*** and ***pcTwo***. Initialize ***pcOne*** in the program, using specifications for the ***pcOne***. Prompt the user to provide the necessary data for the ***pcTwo***. Your program will then display the information about the PCs in a tabulated format shown below. You may declare an array of two objects named twoPC[2] with elements twoPC[0] and twoPC[1].

**PC 1 PC 2**

**Manufacturer**

**Model**

**Model Year**

**Registration Number**

**Owner**

**Grading:**

Object model 10 points

Choice of data selected 5 points

Documentation 5 points

Proper development of class

and member functions 15 points

Program completeness 20 points, this includes program correctness, efficient programming, using right constructs for the solution, and proper use of coding as emphasized in class

Sample correct outputs 5 points

**Notes:(please read very carefully)**

1. Make sure the files you upload to the Blackboard are **VIRUS FREE**!(grade of 0 will be given for infected media). Use Technology lab PCs for the test.

2. Comment your program.

3. Use meaningful prompts.

4. Provide a brief description of the problem being solved.

5. Be sure to include a header file at the beginning of your program as shown in the course syllabus.

6. **NO global declarations allowed, except for the class, member function definitions, and function prototypes.**

7. Use classes, member functions, date members, and strings.

8. Full member -function prototyping is required. Member functions must have their purposes fully explained.

8A. No member function should be defined within a class (i.e., no body of the member function should be seen inside any class)

9. Make sure to use constructor(s) and destructor for the class. The class may have more than one constructor.

10. Parameter passing to functions will be ***by value or by reference*** and return value from functions willbe ***as specified in the member function prototypes and user-defined function prototype.***

11. Use data types as specified in the member function prototypes.

12. At the due date, submit your **H4 containing the components of the program specified in the guidelines.**  You need to include the class and object model, the list of your .cpp file, and the sample run of the program in the Word document. The source file for H4.cpp and the Visio file H4.vsdx will be uploaded as well. Unrelated files should not be present when you upload them to the Blackboard. Homework must be uploaded to the Blackboard by **9 PM** of the due date and ***late homework will not be accepted***.

13. Use **Microsoft Visual Studio Enterprise 2015** compiler using default compiler settings.

14. Use **Microsoft Visio 2013** to develop your flowchart.

15. Adherence to the ***ANSI C*** and ***ANSI C++***  required.

15a. You are responsible for proper submission of your homework components.

15b. You are responsible to make sure your homework is graded and your grade is posted to the BB.

15c. We have to show us the assignment object-oriented model before we can help you with your code.

16. ***Do not*** use **<stdio.h>, <cstdio> and <conio.h>**  in this assignment and all other assignments.

17. ***Do not*** use any **#define** in your program until the time that is required for class declaration header files.

18. No ***goto*** statements allowed in any program that you develop in this course.

19. ***Non-compliance with these notes will cost you points***.

20. No collaboration on this assignment and all other assignments allowed. If you violate this policy, your grade for the course will be **F**.