

## COP 4331- Fall 2015

### Homework 2

Due: Nov 19, 2015

- No late submissions will be accepted
- Please submit the homework through Webcourses using the following format: COP4331C\_Fall13\_HW2\_LastName\_FirstName.pdf.
- This homework assignment is an **INDIVIDUAL** assignment, not a team effort!!!

#### Problem statement:

You are required to improve on the system developed in Homework-1. You have been requested to improve the current car dealer system. In the current system buyers can't compare the cars with each other and find their best options based on their criteria. In order to improve the system the buyer should be able compare any number of cars with each other and get suggestions in response. Each comparison can be based on selected features or all features of the car together. Each car should hold these values so it can be compared : <Mileage>, <Price>, <Year Built>, <Cylinders>, <Fuel Capacity> and <Horse Power>. The rules and measuring for find best car based on features are:

- Mileage based on miles where less is better and should be in range of user defined criteria
- Price based on dollar where less is better and should be in range of user defined criteria
- Year, more is better and should be in range of user defined criteria
- Cylinders, more is better.
- Fuel Capacity based on gallons and more is better.
- Horse Power based on hp and more is better.

#### Deliverables:

- All submissions must be a zip file that contains the source code, .exe files and README file including information necessary to run your programs (Hint: think of the readme file as a preliminary attempt at creating a user manual).
- Your program should compile and run. If it doesn't compile and/or crash, you will receive only a partial credit for the code. **IT MUST RUN USING THE GIVEN "INPUT.TXT" FILE.**
- You have two options for language, C++ and Java. If you choose C++, you have two options, you can either submit a makefile or you can submit it as a Visual Studios Project. If you choose Java, you **must** submit the Jar, as well as the source code, or submit an Eclipse/NetBeans Java project. No other forms of code or executable will be accepted.

### **Constraints of input.txt:**

➔ The first line in input.txt will be a number from 1 – 100 representing the number of cars

Following that, will be 'n' number of cars in the following format:

- Car Name: Name of the car for example BMW M4.
- Mileage: The distance the car has traveled until now in miles.
- Price: Price of the car in dollars.
- Year: The year the car was built in.
- Cylinders: Number of cylinders the car engine has for example 6 cylinders.
- Fuel Capacity: The capacity of gas tank the car has for example 10 gallons.
- Horse Power: The horse power of the car for example 180 hp.

Example:

1

BMW M4

1000

5000

2010

6

10

180

### **Output:**

Handling output is entirely up to you. You will be providing a “User Manual” in the form of a README.txt file so you are not constrained to an output method.

Examples for ways to handle output could be:

- 1) User Driven, prompting the user to select the comparison criteria and the returning the result on the screen in form of sorted best options for the user in descending order.
- 2) Automatic, running your program either dumps to the screen or to a separate text file the results of analyzing the input file in form of sorted best options for the user in descending order using all criteria together and no boundaries for user range inputs.