Object Oriented Programming Lab

Lab 05 **Marks 05**

Instructions

Work on this lab individually. You can use your books, notes, handouts etc. but you are not allowed to borrow anything from your peer student. *You are strictly **NOT ALLOWED** to include any additional data-members/functions/constructors* in your class.

Marking Criteria

Show your work to the instructor before leaving the lab to get some or full credit.

What you must do

Program the following task in your C++ compiler and then compile and execute them. *Write the **main** function first and keep testing the functionality of each function once created.*

ADT: Car

Write a class named **Car** that has the following:

1. The class should have following **three private data members**
    1. An **integer** named **yearModel** that holds the car's **year model**.
    2. A **string** named **make** that holds the **make** of the car.
    3. An **integer** named **speed** that holds the car's **current speed**.
2. Provide the implementation of following **constructors** and a **destructor**
    1. The constructor should accept the **car's year model** and **make** as arguments. These values should be assigned to the object's **yearModel** and **make** member variables. The constructor should also assign **0** to the **speed** member variables.
    2. A **copy constructor** to initialize a car's object with already existing object.
    3. A **destructor** that does nothing except displaying a simple message "Destructor executed…" on the screen.
3. Provide the implementation of appropriate **accessor functions** to **get** the values stored in an object's **yearModel**, **make**, and **speed** member variables.
4. Provide the implementation of appropriate **mutator functions** to **set** the values of object's **yearModel**, **make**, and **speed** member variables.
5. Provide the implementation of following member functions
    1. **setCar** method accepts **car's year model**, **make** and **speed** as arguments and assigns them to the appropriate member variables.
    2. **getCar** method to **initialize the data** of a car **taken** from the user.
    3. **putCar** method to display the information of a particular car.
    4. **accelerate** should **add 5** to the **speed** member variable each time it is called.
    5. **brake** should **subtract 5** from the **speed** member variable each time it is called.
6. Test the functionality of **Car** class by creating its **five objects** to hold the following data in **main** function,

Year Model	Make	Speed
2021	Suzuki Alto	40
2015	Toyota Camry	45
2011	Honda Accord	80
2012	Toyota Prius	60
2018	Daihatsu Boon	55

The program should store this data in the five objects and then display the data for each car on the screen in the appropriate format.

☺ ☺ ☺ **BEST OF LUCK** ☺ ☺ ☺