

Extra Credit Assignment 8 (Ex8)

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Problem.

4. Car Class

Write a class named Car that has the following member variables:

- **year**. An int that holds the car's model year.
- **make**. A string object that holds the make of the car.
- **speed**. An int that holds the car's current speed.

In addition, the class should have the following member functions.

- **Constructor**. The constructor should accept the car's year and make as arguments and assign these values to the object's year and make member variables. The constructor should initialize the speed member variable to 0.
- **Accessors**. Appropriate accessor functions should be created to allow values to be retrieved from an object's year, make, and speed member variables.
- **accelerate**. The accelerate function should add 5 to the speed member variable each time it is called.
- **brake**. The brake function should subtract 5 from the speed member variable each time it is called.

Demonstrate the class in a program that creates a Car object and then calls the accelerate function five times. After each call to the accelerate function, get the current speed of the car and display it. Then, call the brake function five times. After each call to the brake function, get the current speed of the car and display it.

Figure 1: p. 500, Programming Challenge #4

- Your goal is to get the same output I have, given the same inputs. You do not have to have the same titles, etc, I have however. I'm interested in you transforming the same data and arriving at the same output.
- Do not get creative and add features - save that for your homework. These are supposed to be short and quick assignments.
- Use a source file header just like your homework assignments.
- The purpose of these assignments is to reinforce concepts from the material we are currently studying. That's why they are only worth 50% when they are late - they don't apply to the material we are studying anymore.

Output.

Due Date and Turn In.

I ONLY accept homework through the Canvas Dropbox. Do not add it to the submission comments or email it to me - I will not accept it. Turn homework in by uploading to the appropriate Canvas Dropbox folder. Save your homework as a .cpp file. Don't zip or otherwise compress your files. Do NOT split your file up into multiple

```

calebfowler@ubuntu:~/Desktop/Ex8$ ./a.out
A 2020 Ford traveling at 0mph created.
Vroom
Vroom
Vroom
Vroom
Vroom
Now traveling at 25mph
Urrrr
Urrrr
Urrrr
Urrrr
Urrrr
Now traveling at 0mph
calebfowler@ubuntu:~/Desktop/Ex8$

```

Figure 2: Aim to produce something similar to this.

files. I know that is a standard industry practice, but it just get's in the way for this class.

Create a file with the following naming format: W12345678.cpp (your w number). This allows me to sort the class in alphabetical order - don't stand out here! If you are having trouble submitting the assignment, email me immediately. Don't change your filename if you make multiple submissions - Canvas will keep track of them and download the latest one by default.

This assignment is due **MONDAY at 11:59 PM**. If you exceed that date and time, your work is late. Build 5 - 10 minutes into your estimates to upload the file! ¹ Canvas records the date and time the upload COMPLETES. Late work is still acceptable, but it is worth half as much. That is, there is a 50% penalty for late work. You may turn late work in up until the following Sunday at 11:59 PM OF THE WEEK THE ASSIGNMENT IS DUE. Once Canvas closes I will not accept an assignment.

¹ Pro-Tip: Get a bare bones copy of your code running and turn it in. Then go ahead and modify it with more specifications and whatnot. Upload it with the same name when you finish. That way, if something unexpected happens, you have some working code turned in. Canvas downloads the latest version to me by default. Risk management, class, risk management.