Digital Assignment 1

Programming Challenge: Car Race Simulator

I) Write a class named Car that has the following fields (attributes):

year (an int which holds the car's year)
model (a String with holds the car's model)
make (a String which holds the make of the car)
speed (an int which holds the car's initial speed)

The Car class should have the following constructors and other methods:

Constructor - Accepts the car's year, model, make, and speed as arguments.
Default Constructor - Does not accept any input parameters, and uses data type defaults.
Accessors (getters) for the object's attributes and Modifiers (setters).

Methods:
1. accelerate - each time it is called, it should add a random number between 5 and 30, to the speed field
2. brake - each time it is called, it should subtract a random number between 5 and 30, to the speed field

II) Write a Driver class, the DrivingSimulation class, which does the following:

- ✓ Prompt the user for the year, model, make, and initial speed of car #1.
- ✓ Create a Car object #1 using the default constructor. Then use the setters to initialize it's values.
- ✓ Prompt the user for the year, model, make, and initial speed of car #2.
- ✓ Create a Car object #2 using the non-default constructor.
- ✓ Display the information for each car.
- ✓ Display an announcement that a race is about to begin between the 2 cars. Use your creativity regarding all messages displayed.
- ✓ Create a loop that will simulate racing around a track 5 times.
    - Within the loop, call the accelerate for each of the car objects, and after each call, use the accessor method to display the current speed of the car
    - Within the loop, call the brake for each of the car objects, and after each call, use the accessor method to display the current speed of the car
    - Within the loop, compare the speed for each car, and store the fastest speed for each car (hint: use 2 local variables in the driver to hold the fastest speed of each car. Compare current speed to fastest speed, at each loop iteration)
- ✓ At the end of the loop, display the fastest speed that each car reached. Make a conclusion about which car achieved the fastest speed, and report on it.