CSCI 145 -- In-Class Exercise 1

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| Group Members | Contribution (0 to 10) 0 – no contribution, 10 -- most |
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Name of note taker (responsible to collect information and submit it): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Breakout Room #: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Question 1:** Your company would like to provide a new software that can be quickly developed, and it would run on various platforms for various customers. Your team must put together a proposal to convince your management to go with the Java language instead of C++ language (i.e., provide advantages of Java over C++). For your management to fairly evaluate all different proposals for different languages, they want to know one negative aspect of the Java language in your proposal (one disadvantage of selecting Java over C++).

Provide your proposal below:

Advantage:

Java programs are architecture independent.

Disadvantage:

Java programs tend to run slower than its C++ counterpart.

**Question 2**: Design a class called **Car** that contains instance data that represents the year/make/model (one attribute like “2023 Toyota Prius”) and current odometer in miles (one attribute like 25). Define the Car constructor with 2 parameters to initialize all instance data. Include getter and setter methods for all instance data, and a **toString** method that returns a one-line description of the car. Set up a method **drive** that accepts one parameter (number of miles driven) and adds that to the current odometer. Set up another method **isUsed** that accepts the current year and returns a boolean indicating if the car is a used car if it has more than 50 miles. Since this is just the design, you only need to declare **instance variables** and **method headers** below (complete definition is not needed, but feel free to do so).

public class Car

{

// Sets up instance data.

String yearMakeModel;

int currentMile;

// Sets up constructor with the specified data.

Car(String yearMakeModel, int currentMile) {

this.yearMakeModel = currentMile;

this.currentMile = currentMile;

}

// Sets up all getters/accessors.

public void setYearMaekModel (String yearMakeModel) {

this.yearMakeModel = yearMakeModel;

}

public void setCurrentMile(int currentMile) {

this.currentMile = currentMile;

}

// Sets up all setters/mutators.

public String getYearMakeModel() {

return yearMakeModel;

}

public int getCurrentMile() {

return currentMile;

}

// Drive the car several miles.

public void drive () {

currentMile += Math.random()\* 10 + 1;

}

// Returns true if the car is a used car.

public boolean isUsed() {

return currentMile > 50;

}

// Returns a string representation of this Car.

}

// Describe one useful service that you would like to add to class Car   
// and include a method header as well.

public double getMPG(double gasPrice);