Classes Worksheet
CIS-2271 Java Programming
October 23, 2018

Work on this sheet in pairs (or triples). Stop after each problem and we will look at the answer as a class.

Car

Define a basic Car class. Each car should have a make and a model (Strings) and a year (int). Include a constructor to create cars. Also include a toString method that will return something in the form of "2007 Honda Accord".

Mileage
Have each car track how far it has driven. Give a second constructor that takes an initial odometer reading. Modify the original constructor to initialize the mileage to 0. Create a drive method that takes a distance and adds that to the odometer.

Oil changes
Track how long it has been since an oil change. You will need a method that indicates
the oil has been changed. Add a needsOilChange method that returns true if the car
needs an oil change. (Assume each car needs an oil change every 7500 miles.)

Model
Create a second class CarModel that knows it's model and make (both as strings) and a range of years that the model was/is made. Change the Car class to use instances of this class instead of the two strings.

Model based oil changes
Have each model know how long it needs between oil changes and add a method to return that number. Use that method instead of the hardcoded 7500 in the car class checking for oil change needed.

Reliable models
Define a method on model call isReliable that takes a Car as its argument and returns true or false. Use the same logic as the exam question. Add a method to car called isReliable that calls the one of CarModel to determine if it is reliable.