Assignment 6

Classes, Objects and Methods

The point of this assignment is to cover a few of the basic principles of classes and objects including the proper use of methods.

The solution for this assignment (at least the one I implemented) can be accomplished by inserting code to determine if a prime number ends in the digit entered by the user.

Using the IDE

Remember that all code must be submitted in text format.

Initial Code & Output

Load the following code into the online compiler:

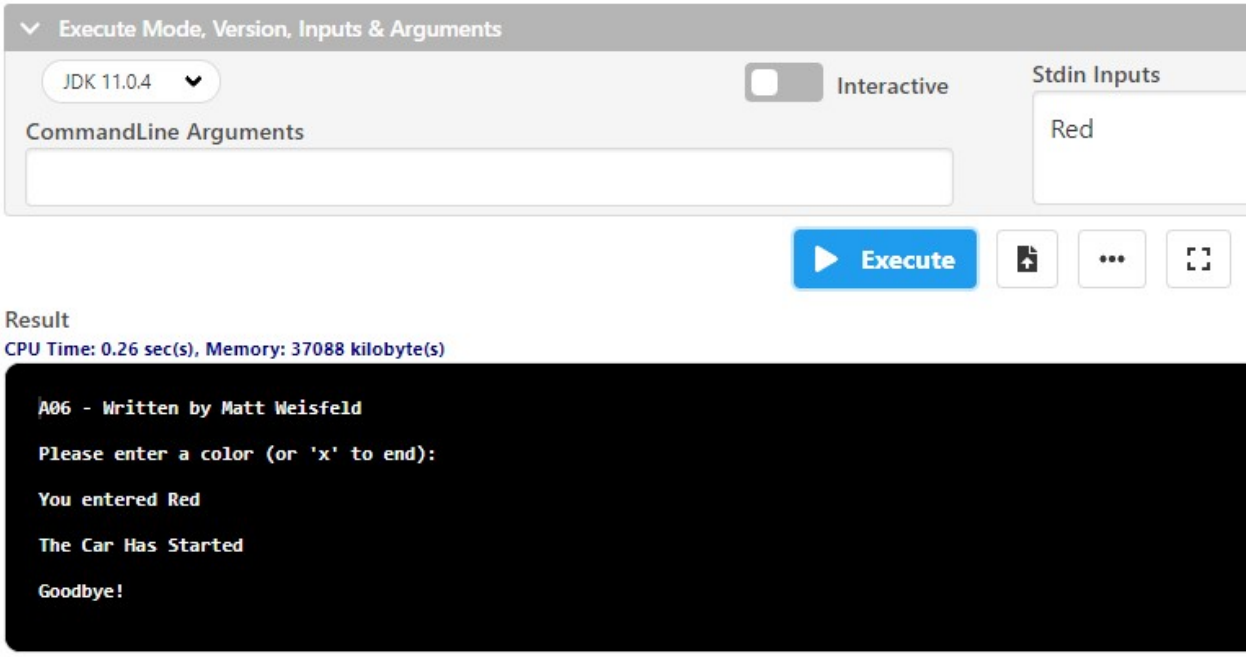
https://www.jdoodle.com/online-java-compiler/

Please copy the following code into the IDE, compile and run it.

```
import java.util.Scanner;

class Car {

   public void start () {

      System.out.println("The Car Has Started\n");

   }
}

public class MyClass {

   public static void main(String args[]) {

      System.out.println("A06 - Written by Matt Weisfeld\n");

      String consoleInput = null;

      Scanner console = new Scanner(System.in);

      Car myCar = new Car();

      System.out.print("Please enter a color (or 'x' to end): \n");

      consoleInput = console.nextLine();

      System.out.println("\nYou entered " + consoleInput + "\n");

      myCar.start();

      System.out.print("Goodbye!");

   }

}
```

This code is an introduction to creating objects and passing arguments to those objects. We will cover much of this in detail later in the course; however, take this opportunity to study the code and determine what is going on.

When you execute the code it will look something like this:



Problem

Add the constructor for the Car class and add the accessor (*getters and setters*) methods for the color attribute.

https://www.tutorialspoint.com/java/java_constructors.htm

https://www.w3schools.com/java/java_encapsulation.asp

Here is an article I wrote many years ago ☺ on encapsulation which is what accessor methods support.

https://www.developer.com/java/other/article.php/10936_3374921_3/Exploring-Encapsulation.htm

Here are 5 constraints that you must include in your program.

1) Include an output statement at the beginning of the program with the assignment number and your name:

   A06 – Written by Matt Weisfeld

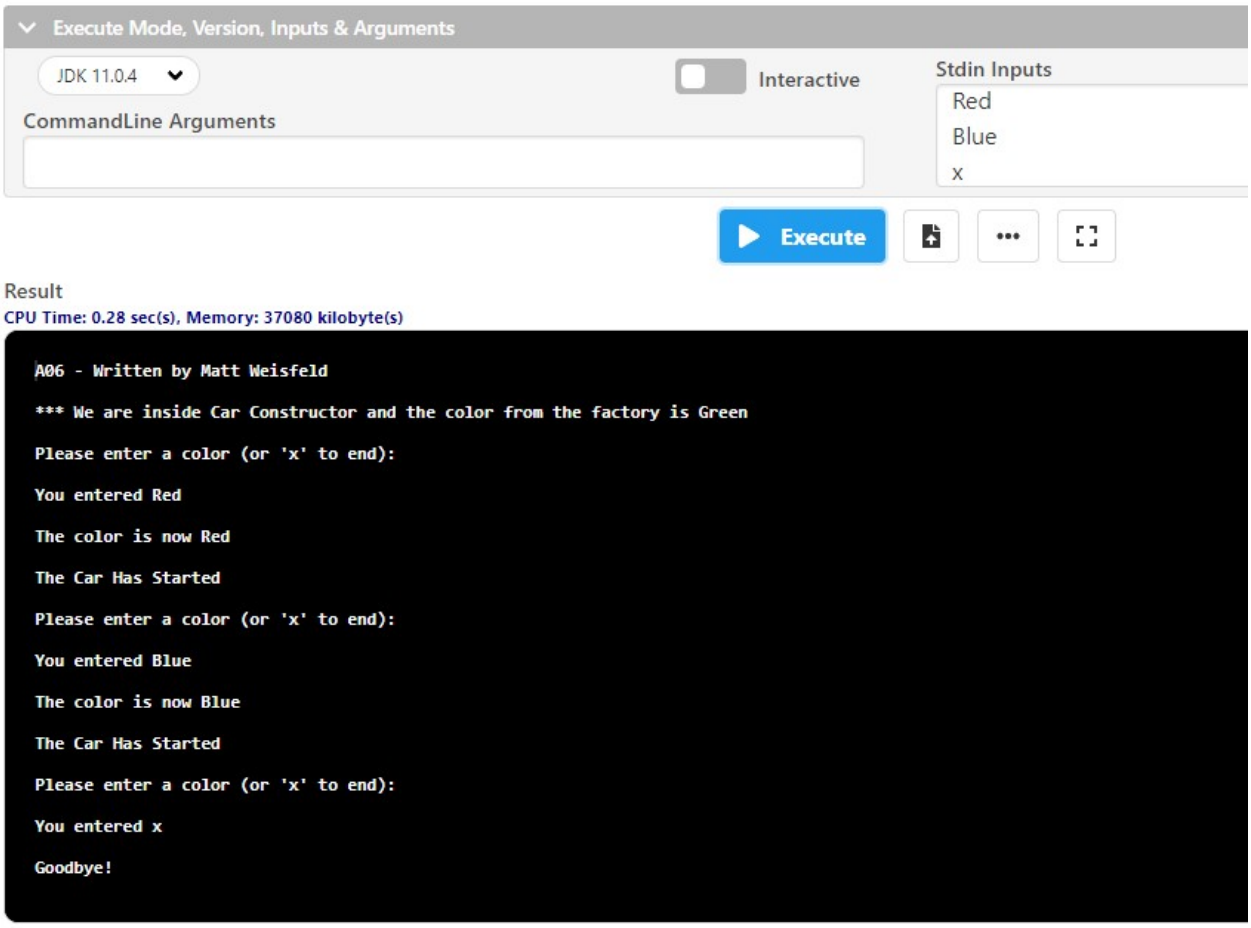
2) The constructor must pass a single argument to initialize the color.
3) When the constructor is called, set the car's initial color to Green.

4) Include a loop to change the color until an “x” is entered.
5) Include a condition to test for the “x” and when found use a break to exit the loop.
6) Print “goodbye” upon exiting the program.

Final Output

Once completed, your output (in the following test case) should look like this:

Test case: enter Red, Blue, x



- Note the input box

What to Submit

A single Java text file should be submitted to Blackboard.