```
/*Havin Lim / Raj Jhanwar
Lab : 5 - More about classes and objects
September 11 2022
Sources: https://www.w3schools.com/js/js_random.asp
Help obtained: None
We confirm that the above list of sources is complete AND that we have not talked to anyone
else (e.g., CSC 207 students) about the solution to this problem.
*/

// Conter.java

class Counter
{
   private int counter;
   private String name;

   Counter(String addName)
   {
      counter = 0;
      name = addName;
   }

   public int counterGet()
   {
      return counter;
   }

   public void counterIncrement()
   {
      counter += 1;
   }
```

```
    public void counterReset()
    {
        counter = 0;
    }

    public String toString()
    {
        return name+": "+counter;
    }
}
```

```
// Tester (for Counter.java)

/*
https://www.w3schools.com/js/js_random.asp
*/


class Tester
{
   public static void main(String[] args)
   {
      Counter obj1 = new Counter("Object 1");
      Counter obj2 = new Counter("Object 2");

      System.out.println("\nIncrementing Counter of Object 1 - ");
      obj1.counterIncrement();
      System.out.println("The value of the counter is : "+obj1.counterGet());

      for(int i = 0; i < 10; i++)
         {
            int choice = (int) (Math.random() * 2 + 1);

            if(choice == 1)
               {
                  int increment_times = (int) (Math.random() * 5) + 1;
                  System.out.print("\nIncrementing Counter of Object-1 ");
                  System.out.println(increment_times+" times.");
                  for(int j = 0; j < increment_times; j++)
                     obj1.counterIncrement();
               }
```

```
        else
            {
                System.out.println("\nResetting Counter of Object-1 to 0");
                obj1.counterReset();
            }

        System.out.println("The value of the counter is : "+obj1.counterGet());

    }

System.out.println("\n\nObject Details -\n"+obj1.toString());


for(int i = 0; i < 15; i++)
    {
        int choice = (int) (Math.random() * 2) + 1;

        if(choice == 1 || choice == 3)
            {

                int increment_time = (int) (Math.random() * 3) + 1;
                System.out.print("\nIncrementing Counter of Object-2 ");
                System.out.println(increment_time +" times.");

                for(int j = 0; j < increment_time; j++)
                    obj2.counterIncrement();
            }

        else
            {
                System.out.println("\nResetting Counter of Object-2 to 0");
```

```
                obj2.counterReset();
            }

            System.out.println("The value of the counter is : "+obj2.counterGet());

        }

        System.out.println("\n\nObject Details -\n"+obj2.toString());
    }
}
```

```
// Averager.java

class Averager
{
   private int total;
   private int addends;

   Averager()
   {
      total = 0;
      addends = 0;
   }

   public double getAverager()
   {
      if(addends == 0)
         {
            System.err.println("There are no addends to get an average running total for. Division
by zero is not possible.");
            return 0;
         }

      else
         return (double)total/addends;
   }

   public void totalIncrement(int increment_by)
   {
      total += increment_by;
      addends++;
   }
```

```
    public void totalReset()
    {
        total = 0;
        addends = 0;
    }
}
```

```
// Tester (for Averager.java)

class TestAverager
{
   public static void main(String[] args)
   {
      Averager obj = new Averager();



      //Computations for the positive
      for(int i = 0; i < 5; i++)
         {
            int increment_value = (int) (Math.random() * 4) + 1;
            System.out.println("Incrementing total of the Object by "+increment_value);

            obj.totalIncrement(increment_value);
         }
      System.out.println();

      double average = obj.getAverager();

      if(average != 0)
         {
            System.out.print("The Arithmetic mean of 5 positive integers is : ");
            System.out.println(average);
         }



      //Computations for the 0
      System.out.println();
      System.out.println();
```

```
obj.totalReset();
average = obj.getAverager();

if(average != 0)
   System.out.println("The Arithmetic mean of no addends is : "+average);



//Computations for the negative
for(int i = 0; i < 5; i++)
   {
      int increment_value = ((int) (Math.random() * 4) + 1) * -1;
      System.out.print("\nIncrementing total of the Object by "+increment_value);

      obj.totalIncrement(increment_value);
   }

average = obj.getAverager();

if(average != 0)
   {
      System.out.print("\nThe Arithmetic mean of 5 negative integers is : ");
      System.out.println(average);
   }

obj.totalReset();
//Computations for the positive and negative
for(int i = 0; i < 10; i++)
   {
      int increment_value;

      if( i%2 == 0)
```

```
                increment_value = (int) (Math.random() * 4) + 1;

            else
                increment_value = ((int) (Math.random() * 4) + 1) * -1;

            System.out.print("\nIncrementing total of the Object by "+increment_value);

            obj.totalIncrement(increment_value);
        }

    average = obj.getAverager();

    if(average != 0)
        {
            System.out.print("\nThe Arithmetic mean of 5 positive and negative integers is : ");
            System.out.println(average);
        }
  }
}
```

```
/*Havin Lim
Lab : 6 - Java Standard Libraries & Packages
September 11 2022
Sources: None
Help obtained: None
I confirm that the above list of sources is complete AND that I have not talked to anyone else
(e.g., CSC 207 students) about the solution to this problem.
*/



// Prefix.java

public class Prefix
{
   public static void main(String[] args)
   {
      String prefix = "java/";
      String ex = "java/ hello world";
      String ex2 = "hello world java/";
      String ex3 = "hello world";


      System.out.println(ex.startsWith(prefix));
      System.out.println(ex2.startsWith(prefix));
      System.out.println(ex3.startsWith(prefix));
   }
}
```

```
// StringVault.java
public class StringVault
{

   private static String password = "this is the password";
   private static String secret = "kept hidden or separate from the knowledge of others";

   public static void getSecret(String str) {
      if (str.equals(password)) {
         System.out.println("The secret is: " +secret);
      }
      else {
         System.out.println("null");
      }
   }



      public static void setSecret(String str, String password1) {
      if (str.equals(password)) {
         secret = password1;
      }

   }
   public static void main(String[] args) {

      System.out.println(secret);
      setSecret("this is not the password", "changed password");
      System.out.println(secret);
      setSecret("this is the password", "changed password");
      System.out.println(secret);
   }
```

}