**CHALLENGE 1:**

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@author: Chanpreet

@application: using setter and getter methods for instance variables

@date: 21 March,2023

@time:7.00 pm

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import java.util.Random;

public class RealEstateTransaction

{

    String streetNumber;   // instance variable

    String  streetName;

    String city;

    String purchasePrice;

    // defalut constructor

    public RealEstateTransaction()

    {

    }

    // Constructor that takes four arguments

    public RealEstateTransaction(String streetNumber, String streetName, String city, String purchasePrice)

    {

        this.streetNumber= streetNumber;

        this.streetName = streetName;

        this.city = city;

        this.purchasePrice = purchasePrice;

    }

    // setter and getter method for each field

    public void setstreetNumber(String streetNumber)

    {

        this.streetNumber= streetNumber;

    }

    public String getstreetNumber()

    {

        return streetNumber;

    }

    public void setstreetName(String streetName)

    {

        this.streetName = streetName;

    }

    public String getstreetName()

    {

        return streetName;

    }

    public void setcity(String city)

    {

        this.city = city;

    }

    public String getcity()

    {

        return city;

    }

    public void setpurchasePrice(String purchasePrice)

    {

        this.purchasePrice = purchasePrice;

    }

    public String getpurchasePrice()

    {

        return purchasePrice;

    }

    // new method to get one part as lower and other part as upper of string

    public String getstringMethod()

    {

        String fullString= streetNumber+streetName+city+purchasePrice;

        int halfString= fullString.length()/2;

        int secondString= fullString.length()- halfString;

        String firstHalf= fullString.substring(0,halfString).toLowerCase();

        String secondHalf= fullString.substring(secondString).toUpperCase();

        return firstHalf+secondHalf;

   }

         // random function

       Random rand = new Random();

       // new method using random function

    public String getrandomString()

    {

        String fullString= streetNumber+streetName+city+purchasePrice;

        int halfString= fullString.length()/2;

        int secondString= fullString.length()- halfString;

        int rand1= rand.nextInt(fullString.length());

        int rand2= rand.nextInt(fullString.length());

        while(rand2<rand1)

        {

            rand2= rand.nextInt(fullString.length());

        }

        String firstHalf= fullString.substring(0,rand1).toLowerCase();

        String secondHalf= fullString.substring(rand2,fullString.length()).toUpperCase();

        return firstHalf+secondHalf;

    }

    // 3rd method to get encrypted version of the string

     public String getreplacedString(int firstIndex, int secondIndex)

    {

          String fullString= streetNumber+streetName+city+purchasePrice;

        if(firstIndex> secondIndex|| firstIndex> fullString.length()|| secondIndex> fullString.length())

        {

            return "1";

        }

        else

        {

         int index= secondIndex;

          StringBuilder sb = new StringBuilder();

         char firstValue= fullString.charAt(firstIndex);

         sb.append(firstValue);

          int count=0;

          for(int i=secondIndex; i<fullString.length(); i++)

          {

            char ch= fullString.charAt(i);

            if(count%3==0)

            {

              sb.append(firstValue);

            }

            else

            {

                sb.append(ch);

            }

            count++;

          }

          String singleString = sb.toString();

          return singleString;

    }

}

}

**CHALLENGE 2:**

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@author: Chanpreet

@application: printing the data using instance variables and string builder

@date: 21 March,2023

@time:7.00 pm

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import java.util.Random;

import java.util.Scanner;

public class RealEstateTransactionTestHarness

{

  // main method

    public static void main(String [] args)

    {

      // Instantiating na object

      RealEstateTransaction  r1= new RealEstateTransaction("M1P3G4", "Brimley", "Scarborough", "Thirty");

     // printing all the data

      System.out.println("STREET NUMBER: " +r1.getstreetNumber());

      System.out.println("STREET NAME: " + r1.getstreetName());

      System.out.println("NAME OF THE CITY: " +r1.getcity());

      System.out.println("PURCHASE PRICE: " +r1.getpurchasePrice());

      System.out.println("First portion is in LOWERCASE and second portion  is in UPPERCASE: " +r1.getstringMethod());

      System.out.println("RANDOM PORTION OF THE STRING: " +r1.getrandomString());

       // Asking the user to get two ints

       Scanner obj= new Scanner(System.in);

        System.out.println("Enter the first Index: ");

       int firstIndex = obj.nextInt();

       System.out.println("First Index is: " +firstIndex);

       System.out.println("Enter the Second Index: ");

       int secondIndex = obj.nextInt();

       System.out.println("Second Index is: " +secondIndex);

     System.out.println("REPLACED STRING IS: " +r1.getreplacedString(firstIndex,secondIndex));

    }

}

**OUTPUT:**

**A screenshot of a computer

Description automatically generated**