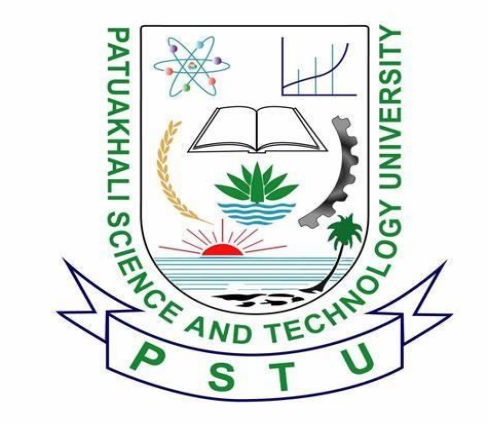
PATUAKHALI SCIENCE AND TECHNOLOGY UNIVERSITY



Course Code: CCE-121

Assignment – 10

SUBMITTED TO:

Prof. Dr. Md Samsuzzaman

Department of Computer and Communication Engineering

Faculty of Computer Science and Engineering

SUBMITTED BY

Name: **Mohammed Sakib Hasan**

ID: **2102052**, Registration No: **10179**

Faculty of Computer Science and Engineering

Date of submission: 20-12-2023

Exercise:

14.1 a) False. String objects are compared using operator == to determine whether they're the

same object in memory.

b) False. String objects are immutable and cannot be modified after they're created.

StringBuilder objects can be modified after they're created.

14.2: a) s1.equals(s2)

b) s1 += s2;

c) s1.length()

14.3:) A palindrome is a word that reads the same both forward and backward, such as 'radar'and 'madam'. Write an application to check if a string entered by the user is a palindrome or not.

Ans:

```
import java.util.Scanner;
public class palindrome {
   public static void main(String[] args) {
      Scanner input=new Scanner(System.in);
      String str=input.next();
      String org_str=str;
      String rev="";
      int len=str.length();
      for(int i=len-1;i>=0;i--)
      {
     rev=rev+str.charAt(i);
      }
```

```
      if(org_str.equals(rev))
      {
         System.out.println(org_str+" this is palindrome");
      }
      else
      {
         System.out.println(org_str+" Is not palindrome");
      }
   }
}
```

14.4 (Comparing Portions of Strings) Write an application that uses String method region

```
import java.util.Scanner;
public class compareRegion {
   public static void main(String[] args) {
      Scanner input=new Scanner(System.in);
      String first=input.nextLine();
      String second=input.nextLine();
      int numChar=input.nextInt();
      int startIndex=input.nextInt();
if(startIndex>=0&&startIndex<first.length()&&startIndex<second.length()&&first.r
egionMatches(true,startIndex, second, numChar, startIndex))
      {
       System.out.println("The specified portion of the string are equal");
      }
    else{
         System.out.println("IS not equal");
```

```
    }
  }
}
```

14.5:(Random Sentences)

Ans:

```
import java.util.Random;

public class exfiveChapterfourteen{
   public static void main(String[] args) {
      String []articles={"the","a","one","some","any"};
      String [] nouns={"boy","girl","dog","town","car"};
      String [] verbs={"dropped","ran","jumped","skipped","walked"};
      String [] prepositions={"to","from","over","under","on"};
      Random random=new Random();
      for(int i=0;i<20;i++)
      {
         String article=articles[random.nextInt(articles.length)];
         String noun1=nouns[random.nextInt(nouns.length)];
         String verb=verbs[random.nextInt(verbs.length)];
         String preposition=prepositions[random.nextInt(prepositions.length)];
         String article2=articles[random.nextInt(articles.length)];
         String noun2=nouns[random.nextInt(nouns.length)];
         String sentence=capitalize(article)+" "+noun1+" "+verb+" "+preposition+"
"+article2+" " +noun2+".";
         System.out.println(sentence);
      }
```

```
    }
    public static String capitalize(String s)
    {
      return s.substring(0,1).toUpperCase()+s.substring(1 );
    }

}
```

14.6: (Project: Limericks)

Ans:

```
import java.util.Random;
public class LimerickGenerator {
   public static void main(String[] args) {
      for (int i = 0; i < 5; i++) {
         String line1 = generateLine();
         String line2 = generateLine();
         String line3 = generateLine();
         String line4 = generateLine();
         String line5 = generateLine();
        System.out.println(line1);
         System.out.println(line2);
         System.out.println(line3);
         System.out.println(line4);
         System.out.println(line5);
         System.out.println();
      }
```

```
 }
 private static String generateLine() {
      String[] subjects = {"a cat", "a dog", "a man", "a woman", "a frog"};
      String[] verbs = {"sat", "stood", "jumped", "ran", "sang"};
      String[] adverbs = {"merrily", "quickly", "happily", "slowly", "loudly"};
      String[] rhymes = {"fun", "sun", "bun", "run", "done"};
     Random random = new Random();
    String line = "There once was " + subjects[random.nextInt(subjects.length)] +
"\n" + "Who " + verbs[random.nextInt(verbs.length)] + " " +
adverbs[random.nextInt(adverbs.length)] + "\n"+   "It was really quite " +
rhymes[random.nextInt(rhymes.length)] + "\n";
return line;
   }
}
```

14.7 (Pig Latin)

```
import java.util.Scanner;
 public class PigLatin {
 public static void main(String[] args) {
 Scanner input = new Scanner(System.in);
 System.out.println("Enter a sentence: ");
}
 String sentence = input.nextLine();
 input.close();
 String[] words = sentence.split(" ");
 for (String word : words) {
```

```
System.out.print(word.substring(1) + word.charAt(0) + "ay ");
}
}
```

14.8 (Tokenizing Telephone Numbers)

```
import java.util.Scanner;
public class TokeinizingTelephone {
public static void main(String[] args) {
Scanner input = new Scanner(System.in);
System.out.println("Enter a telephone number: ");
String telephoneNumber = input.nextLine();
input.close();
String[] tokens = telephoneNumber.split("[()\\- ]");
String areaCode = tokens[1];
String firstThreeDigits = tokens[3];
String lastFourDigits = tokens[4];
String phoneNumber = firstThreeDigits + lastFourDigits;
System.out.println("Area code: " + areaCode);
System.out.println("Phone number: " + phoneNumber);
}
19 }
```

14.9 (Displaying a Sentence with Its Words Reversed)

```
import java.util.Scanner;
public class ReverseSentence {
public static void main(String[] args) {
```

```
 Scanner input = new Scanner(System.in);
 System.out.println("Enter a sentence: ");
 String sentence = input.nextLine();
 input.close();
}
 String[] words = sentence.split(" ");
 for (int i = words.length - 1; i >= 0; i--) {
 System.out.print(words[i] + " ");
 }
 }
```

14.10 (Longest Word in a Sentence)

```
import java.util.Scanner;

public class LongestWord {
 public static void main(String[] args) {
 Scanner input = new Scanner(System.in);
 System.out.println("Enter a sentence: ");
 String sentence = input.nextLine();
 input.close();
 String[] words = sentence.split(" ");
 int maxLength = 0;
 String longest_word = "";
 for (String word : words) {
```

```
if (word.length() > maxLength) {
longest_word = word;
maxLength = word.length();
}
}
System.out.println("The longest word is: " + longest_word);
}
}
```