ASSIGNMENT 2

JAVA CSE1007

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20BCE2893

BASED ON STRING

Write a java Program to check whether given string is palindrome or not.

CODE:

```
import java.util.*;

public class Palindrome {
    public static void main(String[] args) {
        String a, b = "";
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the string");
        a = s.nextLine();
        a = a.toLowerCase();
        int n = a.length();
        for (int i = n - 1; i >= 0; i--) {
            b = b + a.charAt(i);
        }

        if (a.equals(b)) {
            System.out.println("Palindrome");
        } else {
            System.out.println("Not a Palindrome");
        }
    }
```

OUTPUT:

```
ing\Code\User\workspaceStorage\3a75bd45c9267e7119ee97720fc84d5b\redh
Enter the string
malayalam
Palindrome
PS D:\VIT\class room\3rd Sem\JAVA\lab>  d:; cd 'd:\VIT\class room\3r
bat' 'C:\Program Files\Java\jdk-16.0.2\bin\java.exe' '--enable-previ
ing\Code\User\workspaceStorage\3a75bd45c9267e7119ee97720fc84d5b\redh
Enter the string
vellore
Not a Palindrome
PS D:\VIT\class room\3rd Sem\JAVA\lab>
```

Write a Java program to sort a string array in ascending order. Input the string: hello world welcome to vit Expected Output: cdeeehillllmoooorttvww

CODE:

```java
import java.util.*;

class Arrange {

    public static void main(String[] args) {
        String str;
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the string");
        str = s.nextLine();

        // Converting string into an array for computationanish
        char arr[] = str.toCharArray();

        char temp;

        int i = 0;
        while (i <= arr.length) {
            int j = i + 1;
```

```
            while (j <= arr.length - 1) {
                if (arr[j] < arr[i]) {    (LESS THAN ASCEND THE VALUE)
                    temp = arr[i];
                    arr[i] = arr[j];
                    arr[j] = temp;
                }
                j += 1;
            }
            i += 1;
        }

        System.out.println(arr);
    }
}
```

OUTPUT:

```
Enter the string
anish shrestha haha
   aaaaehhhhhinrssst
PS D:\VIT\class room\3rd Sem\JAVA\lab>
```

Write a java program to sort the names in descending order.

CODE:

```
import java.util.*;

class Arrange {

    public static void main(String[] args) {
        String str;
        Scanner s = new Scanner(System.in);
        System.out.println("Enter the string");
        str = s.nextLine();

        // Converting string into an array for computationanish
        char arr[] = str.toCharArray();
```

```
        char temp;

        int i = 0;
        while (i <= arr.length) {
            int j = i + 1;
            while (j <= arr.length - 1) {
                if (arr[j] > arr[i]) {       (GREATER THAN DESCEND THE VALUE)
                    temp = arr[i];
                    arr[i] = arr[j];
                    arr[j] = temp;
                }
                j += 1;
            }
            i += 1;
        }

        System.out.println(arr);
    }
}
```

OUTPUT:

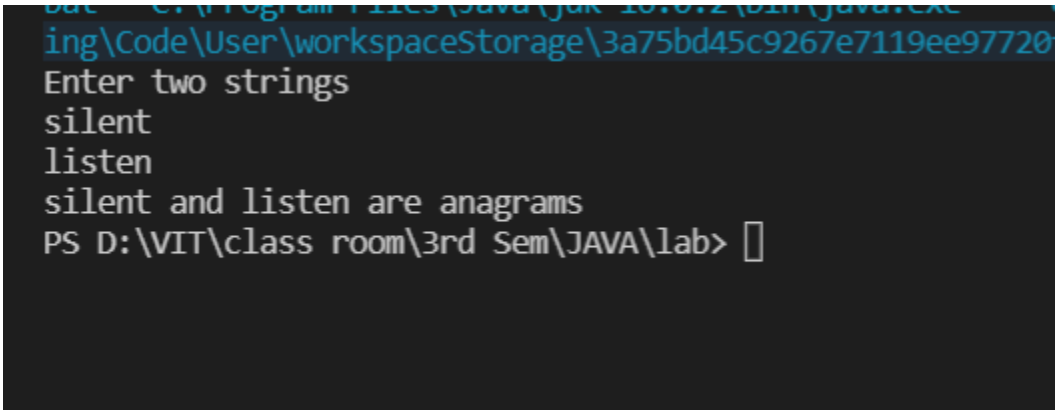
```
Enter the string
ANISH
SNIHA
PS D:\VIT\class room\3rd Sem\JAVA\lab>
bat' 'C:\Program Files\Java\jdk-16.0.2\
ing\Code\User\workspaceStorage\3a75bd45
Enter the string
ANISH SHRESTHA HAHA
TSSSRNIHHHHHEAAAA
PS D:\VIT\class room\3rd Sem\JAVA\lab>
```

4. Write a java Program to check whether the given two strings are anagram or not.

```
import java.util.*;

public class Anagram {
    static void isAnagram(String str1, String str2) {
```

```
        String s1 = str1.replaceAll("\\s", "");
        String s2 = str2.replaceAll("\\s", "");
        boolean status = true;

        if (s1.length() != s2.length()) {
            status = false;
        } else {
            char[] ArrayS1 = s1.toLowerCase().toCharArray();
            char[] ArrayS2 = s2.toLowerCase().toCharArray();
            Arrays.sort(ArrayS1);
            Arrays.sort(ArrayS2);
            status = Arrays.equals(ArrayS1, ArrayS2);
        }

        if (status) {
            System.out.println(s1 + " and " + s2 + " are anagrams");
        } else {
            System.out.println(s1 + " and " + s2 + " are not anagrams");
        }
    }

    public static void main(String[] args) {
        String str1, str2;
        Scanner s = new Scanner(System.in);
        System.out.println("Enter two strings");
        str1 = s.nextLine();
        str2 = s.nextLine();
        isAnagram(str1, str2);
    }

}
```

OUTPUT:



METHOD OVERLOADING:

1ST QUESTION:

CODE:

```
import java.lang.Math;

class OverloadArea {
    void area(float s) {
        System.out.println("the area of the square is " + Math.pow(s, 2) + " sq u
nits");
    }

    void area(float h, float b) {
        System.out.println("the area of the rectangle is " + h * b + " sq units")
;
    }
```

```
    void area(double a, double b, double c) {
        double s = (a + b + c) / 2;
        double ar = s * (s - a) * (s - b) * (s - c);
        double Z = Math.sqrt(ar);
        System.out.println("the area of the triagle with 3 sides is " + Z + " sq
units");
    }
}

public class AreaOfShapes {

    public static void main(String[] args) {
        OverloadArea ob = new OverloadArea();
        ob.area(5);
        ob.area(11, 12);
        ob.area(3, 6, 7);
    }
}
```

OUTPUT:

```
ing\Code\User\workspaceStorage\3a75bd45c9267e7119ee
the area of the square is 25.0 sq units
the area of the rectangle is 132.0 sq units
the area of the triagle with 3 sides is 8.944271909
PS D:\VIT\class room\3rd Sem\JAVA\lab>
```

2ND QUESTION

CODE:

```
import java.util.*;

class MPL {
    int numberOfStudents;
    Integer[] marks = new Integer[10];
    int standard;
    int firstMark = -1;

    MPL(int standard, int numberOfStudents) {
        this.standard = standard;
        this.numberOfStudents = numberOfStudents;
```

```
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter marks for " + numberOfStudents + "students of c
lass" + standard);
        for (int i = 0; i < numberOfStudents; ++i) {
            marks[i] = sc.nextInt();
            if (marks[i] > firstMark)
                firstMark = marks[i];
        }
    }

    float getAverage() {
        int sum = 0;
        for (int i = 0; i < numberOfStudents; ++i)
            sum += marks[i];
        return sum / numberOfStudents;
    }

}

public class ClassTest {

    public static void main(String args[]) {
        MPL[] m = new MPL[4];
        m[0] = new MPL(5, 6);
        m[1] = new MPL(10, 5);
        m[2] = new MPL(8, 4);
        m[3] = new MPL(7, 6);
        findBestClass(m);
        findBestClass(m, 1);
    }

    static void findBestClass(MPL[] m) {
        int max = 0;
        for (int i = 0; i < 4; ++i) {
            if (m[i].firstMark > m[max].firstMark)
                max = i;
        }
        System.out.println("Best Class = " + m[max].standard + " Mark = " + m[max
].firstMark);
    }

    static void findBestClass(MPL[] m, int avg) {
        int max = 0;
        for (int i = 0; i < 4; ++i) {
            if (m[i].getAverage() > m[max].getAverage())
```

```
                max = i;
        }
        System.out.println("Best Average Class = " + m[max].standard + " Mark = "
 + m[max].getAverage());
    }
}
```

Output:

```
Enter marks for 6students of class5
34 56 23 45 77 88
Enter marks for 5students of class10
90 80 87 76 56 44
Enter marks for 4students of class8
45
7 89 78 60 33
Enter marks for 6students of class7
22
33
44
55
66
77
Best Class = 10 Mark = 90
Best Average Class = 10 Mark = 77.0
PS D:\VIT\class room\3rd Sem\JAVA\lab> 8
```

3rd question:

Code:

```
import java.util.*;

class Details {
    Scanner sc = new Scanner(System.in);
    String regno = new String();
    String name = new String();
    float cgpa;
    String pname = new String();
    String sname = new String();
```

```
    String proctorname = new String();

    void input() {
        System.out.println("Enter Student Details:");
        System.out.println("Enter Registration Number:");
        regno = sc.next();
        sc.nextLine();
        System.out.println("Enter Name:");
        name = sc.nextLine();
        System.out.println("Enter CGPA:");
        cgpa = sc.nextFloat();
        System.out.println("Enter Programme Name:");
        pname = sc.next();
        sc.nextLine();
        System.out.println("Enter School Name:");
        sname = sc.nextLine();
        System.out.println("Enter Proctor Name:");
        proctorname = sc.nextLine();
    }

    void display() {
        System.out.println("Student Details::");
        System.out.println(regno + " " + name + " " + cgpa + " " + pname + " " +
sname + " " + proctorname + " ");
    }

}

public class CGPA {
    public static void main(String[] args) {
        Details s1 = new Details();
        s1.input();
        s1.display();
```

Output:

```
Enter Student Details:
Enter Registration Number:
20BCE2893
Enter Name:
anish
Enter CGPA:
9.1
Enter Programme Name:
CSE
Enter School Name:
VIT
Enter Proctor Name:
santhi v
Student Details::
20BCE2893 anish 9.1 CSE VIT santhi v
PS D:\VIT\class room\3rd Sem\JAVA\lab>
```