

1.Prepare a Class diagram for all the questions given in Assignment 1.

2. WAP in JAVA to find the area of a circle using constructor.

```
package com.OOP;
import java.util.Scanner;
public class Exercise2 {
    static Scanner in = new Scanner(System.in);
    public static void main(String[] args)
    {
        System.out.println("Enter the radius : ");
        double rad= in.nextDouble();
        Area area=new Area(rad);
        System.out.println("Area of Circle is : " +
area.areaOfCirc);
    }
    static class Area {
        double areaOfCirc;
        Area(double r)
        {
            areaOfCirc = r*r*22/7;
        }
    }
}
```

```
"C:\Program Files\Java\jdk-18\bin\java.exe" "
Enter the radius :
1
Area of Circle is : 3.142857142857143

Process finished with exit code 0
|
```

3. WAP in JAVA to input details of student name, enrolment number, and marks in Science , Math and English. And print all the details along with their percentage as output.

```
package com.OOP;
import java.util.Scanner;
public class Exercise3 {
    static Scanner in = new Scanner(System.in);
    public static void main(String[] args) {
        System.out.println("Enter name = " );
        String name = in.nextLine();
        System.out.println("Enter enrolment no = " );
        int enrollNo = in.nextInt();
        System.out.println("Enter marks Of science = ");
        int markOfSc = in.nextInt();
        System.out.println("Enter marks Of maths = " );
        int markOfMts = in.nextInt();
        System.out.println("Enter marks Of english = " );
        int markOfEng = in.nextInt();
        System.out.println("name = " + name );
        System.out.println("enrolment no = " + enrollNo );
        System.out.println("marks Of science = " + markOfSc );
        System.out.println("marks Of maths = " + markOfMts );
        System.out.println("marks Of english = " + markOfEng );
        int percentage = (markOfEng+markOfMts+markOfSc)/3;
        System.out.println("percentage = " + percentage);
    }
}
```

```

"C:\Program Files\Java\jdk-18\bin\java.exe"
Enter name =
Hardik
Enter enrolment no =
2312010
Enter marks Of science =
90
Enter marks Of maths =
95
Enter marks Of english =
100
name = Hardik
enrolment no = 2312010
marks Of science = 90
marks Of maths = 95
marks Of english = 100
percentage = 95

Process finished with exit code 0
|

```

```

"C:\Program Files\Java\jdk-18\bin\java.exe" "-javaa
Enter name =
Devansh
Enter enrolment no =
20200102
Enter marks Of science =
80
Enter marks Of maths =
90
Enter marks Of english =
100
name = Devansh
enrolment no = 20200102
marks Of science = 80
marks Of maths = 90
marks Of english = 100
percentage = 90

Process finished with exit code 0

```

4. WAP in JAVA to check whether a string is palindrome or not.

```

package com.OOP;
public class Exercise4 {
    public static void main(String[] args) {
        String str= "hello";
        System.out.println("String : " + str);
        char[] arr = str.toCharArray();
        int start = 0;
        int end = arr.length - 1;
        for (int i = 0; i < end; i++) {
            swap(arr, start, end);
            start++;
            end--;
        }
        String output = new String(arr);
        if(str.equals(output)) System.out.println("String is
palindrome");
        else System.out.println("String is not palindrome");
    }
    static void swap(char[] arr ,int start , int end){
        char temp = arr[start];
        arr[start] =arr[end];
        arr[end] = temp;
    }
}

```

```
}  
}
```

5. State whether the given below are valid or invalid cases of method overloading. Give a short explanations.

Case1:

```
int demo(int a, int b, float c)  
int demo(int var1, int var2, float var3)
```

Ans : invalid

Data types, Number of arguments and sequence are same in both the functions.

Case 2:

```
int demo(int a, int b)  
int demo(float var1, float var2)
```

Ans : valid

Data types are different in both the functions

Case 3:

```
int demo(int a, int b)  
int demo(int num)
```

Ans: valid

number of arguments are different in both function

Case 4:

```
float demo(int a, float b)  
float demo(float var1, int var2)
```

Ans: valid

sequence of datatype is different

Case 5:

```
int demo(int a, int b)  
float demo(int var1, int var2)
```

Ans: invalid

in both function number of arguments, datatype and sequence are same

5.Part-b

```
class Demo1
{
    public double myMethod(float num1, int num2)
    {
        System.out.println("First myMethod of class Demo");
        return num1+num2;
    }
    public int myMethod(int var1, int var2)
    {
        System.out.println("Second myMethod of class Demo");
        return var1-var2;
    }
}
class Demo2
{
    public static void main(String args[])
    {
        Demo2 obj2= new Demo2();
        obj2.myMethod(10,10);
        obj2.myMethod(20,12);
    }
}
```