Name: Hardik Patel
Std id : 202103032

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.

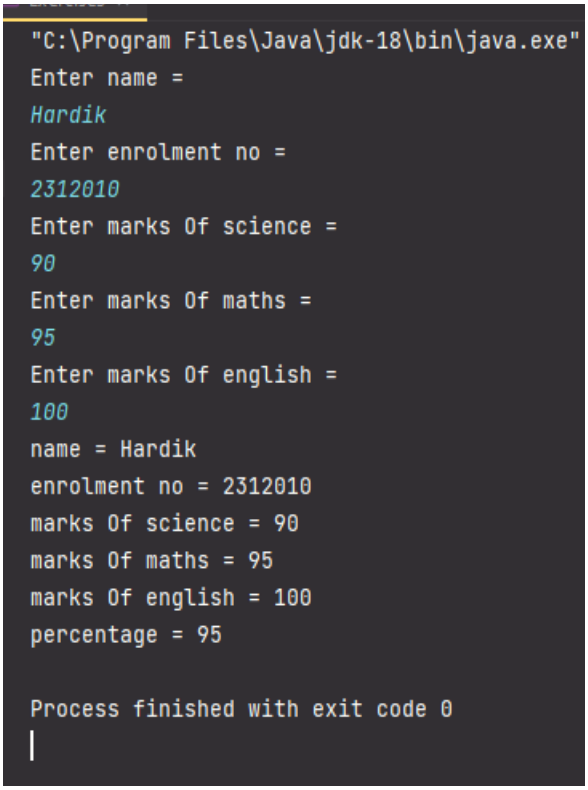
```
package com.OOP;
import java.util.Scanner;
public class Exercise2 {
    static Scanner in = new Scanner(System.in);
    public static void main(String[] args)
    {
        System.out.println("Enter the radius : ");
        double rad= in.nextDouble();
        Area  area=new Area(rad);
        System.out.println("Area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

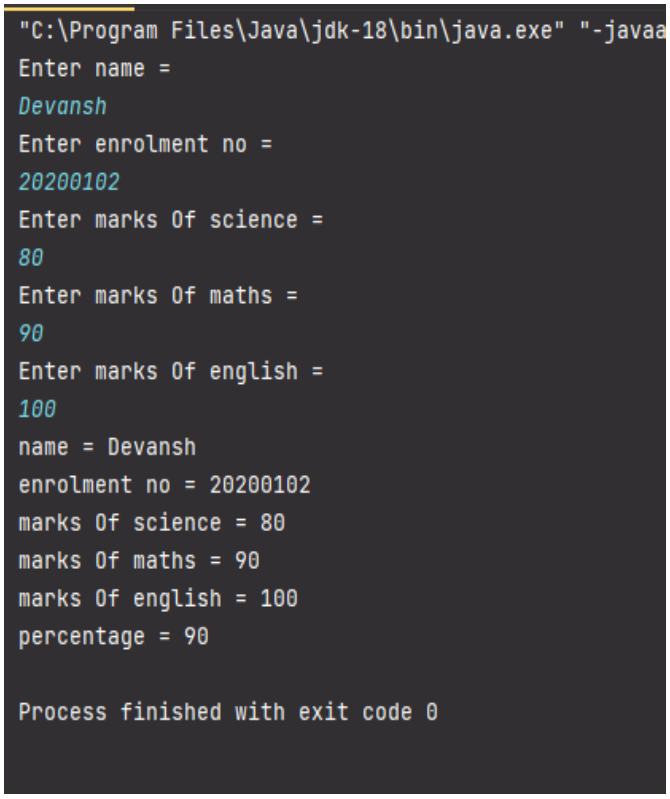
```
"C:\Program Files\Java\jdk-18\bin\java.exe" "
Enter the radius :
1
Area of Circle is : 3.142857142857143

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.

```java
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);
    }
}
```





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(); //convert string to
char array
        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);
//comparing string to reverse of string
        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 arw 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
{
//change datatype of one of the argument
    public double myMethod(float num1, int num2)
    {
        System.out.println(&quot;First myMethod of class
Demo&quot;);
        return num1+num2;
    }
    public int myMethod(int var1, int var2)
    {
        System.out.println(&quot;Second myMethod of class
Demo&quot;);
        return var1-var2;
    }
}
class Demo2
{
    public static void main(String args[])
    {
        Demo2 obj2= new Demo2();
        obj2.myMethod(10,10);
        obj2.myMethod(20,12);
    }
}
```