

Q. 1) Write a Java program to create a class called Shape with methods called getPerimeter() and getArea(). Create a subclass called Circle that overrides the getPerimeter() and getArea() methods to calculate the area and perimeter of a circle.

```
package Packgetype;

public class Shape {

    //1) Write a Java program to create a class called Shape with methods
    called getPerimeter() and getArea(). Create a subclass called Circle that
    overrides the getPerimeter() and getArea() methods to calculate the area and
    perimeter of a circle.

    double radius; //declare variable for radius of circle

    void getPerimeter() //created a method for the perimeter of circle
    {
        double perimeter; //declare variable for perimeter of circle

        perimeter = 2 * 3.14 * (this.radius); //formula for perimeter of circle

        System.out.println("Perimeter of circle is : " + perimeter); //print
        the perimeter of circle
    }

    void getArea() //created a method for the area of circle
    {
        double area; //declare variable for area of circle

        area = 3.14 * (this.radius * this.radius); //formula for area of circle

        System.out.println("Area of circle is : " + area); //print the area of
        circle
    }
}
```

```
package Packgetype;

public class Circle extends Shape{ // Circle class extends Shape class

    public static void main(String[] args) {

        // Object of circle class is created
        Circle c = new Circle();

        // Assigning the value in the radius variable of
        //circle Class
        c.radius = 25;

        System.out.println("radius of circle is = " + c.radius);

        // Calling of Perimeter method of circle Class
        c.getPerimeter(); //override getPerimeter() method from Shape class

        // Calling of Area method of circle Class
        c.getArea(); //override getArea() method from Shape class
    }
}
```

OUTPUT:

```
Console X
<terminated> Circle [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (28-Aug-2023, 7:05:26 pm - 7:05:26 pm) [pid: 3764]
radius of circle is = 25.0
Perimeter of circle is : 157.0
Area of circle is : 1962.5
```

Q. 2)Write a program to search an element in an given array by using Binary Search method without using predefined method.

```
package Packgetype;
import java.util.Arrays;
public class Quiz5Q2 {

    public static void main(String[] args) {

        //2)Write a program to search an element in an given array by using Binary Search method
        without using predefined method.

        char myName[] = {'D', 'I', 'K', 'S', 'H', 'A'}; //Assign character of name

        char find = 'K'; // assign variable which we want to search

        int findLetter = Arrays.binarySearch(myName, find); //method to find letter of name

        System.out.println(" Find 'K' letter in my name 'DIKSHA' : " + findLetter);

    }
}
```

OUTPUT:

```
Console X
<terminated> Quiz5Q2 [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (28-Aug-2023, 7:36:28 pm - 7:36:28 pm) [pid: 6788]
Find 'K' letter in my name 'DIKSHA' : 2
```