Week 5

Vinayak Prasad

3D Section

Batch D4

Develop a Java Program to create an abstract class named Shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends class Shape. Each one of the classes contain only the method printArea() that prints the area of the given shape.

```java
import java.util.*;

abstract class Shape {

    int a,b;

    Shape(int x,int y)

    {

        a=x;

        b=y;

    }

    abstract void printArea();

}


class Rectangle extends Shape{

    Rectangle(int x,int y)

    {

        super(x,y);

    }

    void printArea()

    {
```

```java
            System.out.println("Area of Rectangle:"+(a*b));
        }
    }


class Triangle extends Shape{
        Triangle(int x,int y)
        {
                super(x,y);
        }
        void printArea()
        {
                System.out.println("Area of Triangle:"+(0.5*a*b));
        }
    }


class Circle extends Shape{
        Circle(int x)
        {
                super(x,x);
        }
        void printArea()
        {
                System.out.println("Area of Circle:"+(Math.PI*a*b));
        }
    }
```

```java
class program4 {

    public static void main(String args[])

    {

        Shape s;

        Rectangle r1=new Rectangle(30,40);

        Triangle t1=new Triangle(30,20);

        Circle c1=new Circle(50);

        r1.printArea();

        t1.printArea();

        c1.printArea();

    }

}
```

Output:

```
C:\Users\Admin\Desktop\1BM21CS242>javac program4.java

C:\Users\Admin\Desktop\1BM21CS242>java program4
Area of Rectangle:1200
Area of Triangle:300.0
Area of Circle:7853.981633974483
```