Program 4

Date 12/1/24
Page

Develop a Java Program to create an abstract class named Shape that contains two integers & an empty method named printArea(). Provide 3 classes named Rectangle, Triangle and Circle such that each one of class extends the class Shape. Each one of the classes contain only the method printArea() that prints the area of given shape.

Algorithm

Step1: Start
Step2: Create Abstract class Shape
Step3: Create subclass Rectangle which extends to Shape class.
Step4: ~~Create~~ Set Read inputs for x & y
Step5: Create a method Area to display area of rect.
Step6: Create subclass Triangle which extends to Shape
Step7: Read inputs for height & base
Step8: Create a method to find Area.
Step 9: Create subclass Circle ~~extending~~ to Shape
Step10: Read input for radius
step10: Create a method to find Area.
Step11. Create class CalcArea
Step12: New objects rect, tgan & cir are declared.
Step13: Call method area for each obj.
Step14: Stop.

250);

```
import java.util.Scanner

abstract class Shape()
{   abstract void Area(){ int x; int y;}
}

class Rectangle extends Shape
{   Scanner in = new Scanner();
    System.out.println(" Enter Length & breadth ");
      x = in.nextInt();
      y = in.nextInt();

    void Area()
    { System.out.println(" Area is "+(x * y));}
}

class Triangle extends Shape
{ Scanner in = new Scanner();
    System.out.println(" Enter height & base ");
      x = in.nextInt();
      y = in.nextInt();
}

    void Area()
    { System.out.println(" Area is "+(0.5*x*y));
}

class Circle extends Shape
{   Scanner in = new Scanner();
    System.out.println(" Enter radius ");
      x = in.nextInt();
    void Area()
      { System.out.println("Area is"+(3.14*x*x));
}
```

```
class CalcArea
{   abstract public static void main () {
    Rectangle rect = new Rectangle();
    Triangle trian = new Triangle();
    Circle cir = new Circle();

    rect.Area();
    trian.Area();
    cir.Area(); }
}
```

o/p

```
Enter length & breadth of rectangle
4
7
Area is 28
Enter base and height of triangle
9
6
Area is 27.0
Enter radius of circle
8
Area is 200.96
```

Aakanksha.V.R 1BM22CS001

```
C:\Users\skc\Desktop\ooj p>java Shape
Aakanksha V R,1BM22CS001
enter the radius of the circle
5
area of the circle is78.5
enter the length and breadth of Rectangle
6
7
area of the rectangle is42
enter the base and height of Triangle
9
8
area of the triangle is36.0
```