

OBJECT ORIENTED JAVA

WEEK 4

QUESTION

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

ANSWER:

```
import java.util.*;

abstract class Shape {
    public int x,y;
    public abstract void printArea();
}

class Rectangle1 extends Shape {
    public void printArea() {
        float area;
        area= x * y;
        System.out.println("Area of Rectangle is " +area);
    }
}

class Triangle extends Shape {
    public void printArea() {
        float area;
        area= (x * y) / 2.0f;
        System.out.println("Area of Triangle is " + area);
    }
}
```

```

    }
}

class Circle extends Shape {
    public void printArea() {
        float area;
        area=(22 * x * x) / 7.0f;
        System.out.println("Area of Circle is " + area);
    }
}

class AreaOfShapes {
    public static void main(String[] args) {
        int choice;

        Scanner sc=new Scanner(System.in);

        System.out.println("Menu \n 1.Area of Rectangle \n 2.Area of Traingle \n 3.Area of Circle ");

        System.out.print("Enter your choice : ");

        choice=sc.nextInt();

        switch(choice) {

            case 1: System.out.println("Enter length and breadth for area of rectangle : ");
                    Rectangle1 r = new Rectangle1();
                    r.x=sc.nextInt();
                    r.y=sc.nextInt();
                    r.printArea();
                    break;

            case 2: System.out.println("Enter bredth and height for area  of traingle : ");
                    Triangle t = new Triangle();
                    t.x=sc.nextInt();
                    t.y=sc.nextInt();
                    t.printArea();
                    break;

```

```
case 3: System.out.println("Enter radius for area of circle : ");  
    Circle c = new Circle();  
    c.x = sc.nextInt();  
    c.printArea();  
    break;  
default: System.out.println("Enter correct choice");  
}  
}  
}
```

cmd Command Prompt

```
Microsoft Windows [Version 10.0.22000.1281]
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C:\Users\Admin>cd 1BM21CS233
The system cannot find the path specified.

C:\Users\Admin>cd 1bm21cs233
The system cannot find the path specified.

C:\Users\Admin>cd C:\Users\Admin\Desktop\1BM21CS233

C:\Users\Admin\Desktop\1BM21CS233>dir
Volume in drive C has no label.
Volume Serial Number is DAF5-DB3E

Directory of C:\Users\Admin\Desktop\1BM21CS233

08-12-2022  14:32    <DIR>          .
08-12-2022  14:25    <DIR>          ..
08-12-2022  14:30                1,895 AreaOfShapes.java
23-11-2022  13:01            86,236 Bank database.01.docx
23-11-2022  11:53            35,068 Bank database.docx
01-12-2022  14:49                1,510 Book.class
01-12-2022  14:49                868 Bookvck.class
01-12-2022  14:49                1,097 Bookvck.java
01-12-2022  14:55            68,843 java week3.docx
02-12-2022  15:10                1,299 q.c
01-12-2022  15:24                366 SGPA.class
01-12-2022  15:10                1,553 SGPA.java
01-12-2022  15:29            54,568 SGPA.WEEK2.docx
01-12-2022  15:24                2,316 Student.class
07-12-2022  12:08            110,745 WEEK 5.docx
               13 File(s)              366,364 bytes
               2 Dir(s)  173,581,770,752 bytes free

C:\Users\Admin\Desktop\1BM21CS233>javac AreaOfShapes.java

C:\Users\Admin\Desktop\1BM21CS233>java AreaOfShapes
Menu
 1.Area of Rectangle
 2.Area of Traingle
 3.Area of Circle
Enter your choice : 1
Enter length and breadth for area of rectangle :
2
3
Area of Rectangle is 6.0

C:\Users\Admin\Desktop\1BM21CS233>2
'2' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\Admin\Desktop\1BM21CS233>java AreaOfShapes
Menu
 1.Area of Rectangle
 2.Area of Traingle
 3.Area of Circle
Enter your choice : 2
Enter bredth and height for area  of traingle :
2
3
Area of Triangle is 3.0
```

Area of Triangle is 3.0

C:\Users\Admin\Desktop\1BM21CS233>java AreaOfShapes
Menu

- 1.Area of Rectangle
- 2.Area of Traingle
- 3.Area of Circle

Enter your choice : 3

Enter radius for area of circle :

2

Area of Circle is 12.571428

C:\Users\Admin\Desktop\1BM21CS233>