

LAB PROGRAM 4

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 the class Shape. Each one of the classes contain only the method printArea() that prints the area of the given shape.

```
import java.util.Scanner;
```

```
abstract class Shape{
```

```
    int b,h;
```

```
    Shape(int b, int h){
```

```
        this.b = b;
```

```
        this.h = h;
```

```
    }
```

```
    void printArea(){};
```

```
}
```

```
class Rectangle extends Shape{
```

```
    Rectangle(int b, int h){
```

```
        super(b,h);
```

```
    }
```

```
    void printArea() {
```

```
        System.out.println("Area of the rectangle is " + (b*h));
```

```
    };
```

```
}
```

```

class Triangle extends Shape{
    Triangle(int b, int h){
        super(b,h);
    }

    void printArea() {
        System.out.println("Area of the triangle is " + ((b*h)/2));
    };
}

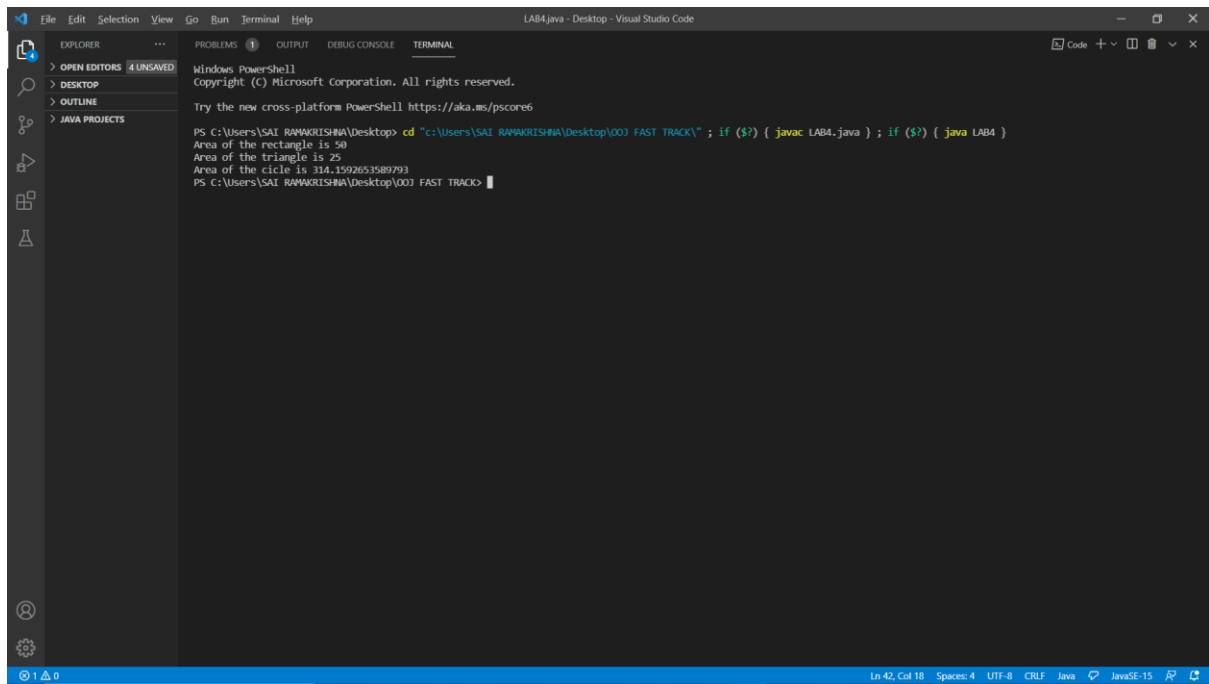
class Circle extends Shape{
    Circle(int r){
        super(r,r);
    }

    void printArea() {
        System.out.println("Area of the cicle is " + (Math.PI*h*h));
    };
}

public class Lab9{
    public static void main(String[] args) {
        Rectangle rect = new Rectangle(10, 5);
        Triangle tri = new Triangle(10, 5);
        Circle c = new Circle(10);
        rect.printArea();
    }
}

```

```
        tri.printArea();  
        c.printArea();  
    }  
}
```



The screenshot shows the Visual Studio Code interface with the 'TERMINAL' tab active. The terminal window displays the output of a Java program. The first line is the Windows PowerShell header. The second line is the copyright notice for Microsoft Corporation. The third line is a prompt to try the new cross-platform PowerShell. The fourth line is the command to run the Java program. The fifth line is the output of the program, which includes the area of a rectangle (50), the area of a triangle (25), and the area of a circle (314.1592653589793). The sixth line is the prompt to run the Java program again.

```
LAB4.java - Desktop - Visual Studio Code

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Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\SAI RAMAKRISHNA\Desktop> cd "c:\Users\SAI RAMAKRISHNA\Desktop\001 FAST TRACK\" ; if ($?) { javac LAB4.java } ; if ($?) { java LAB4 }
Area of the rectangle is 50
Area of the triangle is 25
Area of the circle is 314.1592653589793
PS C:\Users\SAI RAMAKRISHNA\Desktop\001 FAST TRACK> |
```

Ln 42, Col 18 Spaces: 4 UTF-8 CRLF Java JavaSE-15