

INPUT_pt1

```
public interface Shape {
    float calculateArea();
    float calculatePerimeter();
}

public class Circle implements Shape{
    float area,perimeter,rad;

    public Circle(float i){
        rad=i;
    }
    @Override
    public float calculateArea() {
        area = (float) (Math.PI*Math.pow(rad,2));
        return area;
    }
    @Override
    public float calculatePerimeter() {
        perimeter = (float) (2*Math.PI*rad);
        return perimeter;
    }
}

public class Rectangle implements Shape{
    float area,perimeter,b,l;    public
    Rectangle(float i,float j){    b=i;
        l=j;
    }
    @Override
    public float calculateArea() {
        area = b*l;        return area;
    }

    @Override
    public float calculatePerimeter() {
        perimeter =2*(b+l);        return
        perimeter;
    }
}

public class Triangle implements
Shape{    float area,perimeter,b,l,h;
    public Triangle(float i,float j, float k){
        b=i;        l=j;        h=k;    }
    @Override
```

```

public float calculateArea() {
    area = (float) (h*b*0.5);
    return area;
}

@Override
public float calculatePerimeter()
{
    perimeter = b+l+h;
    return perimeter;
}

}

public class Main {
    public static void main(String[] args) {
        Circle circle = new Circle(5);
        System.out.println("Circle area: " + circle.calculateArea());
        System.out.println("Circle perimeter: " +
        circle.calculatePerimeter());

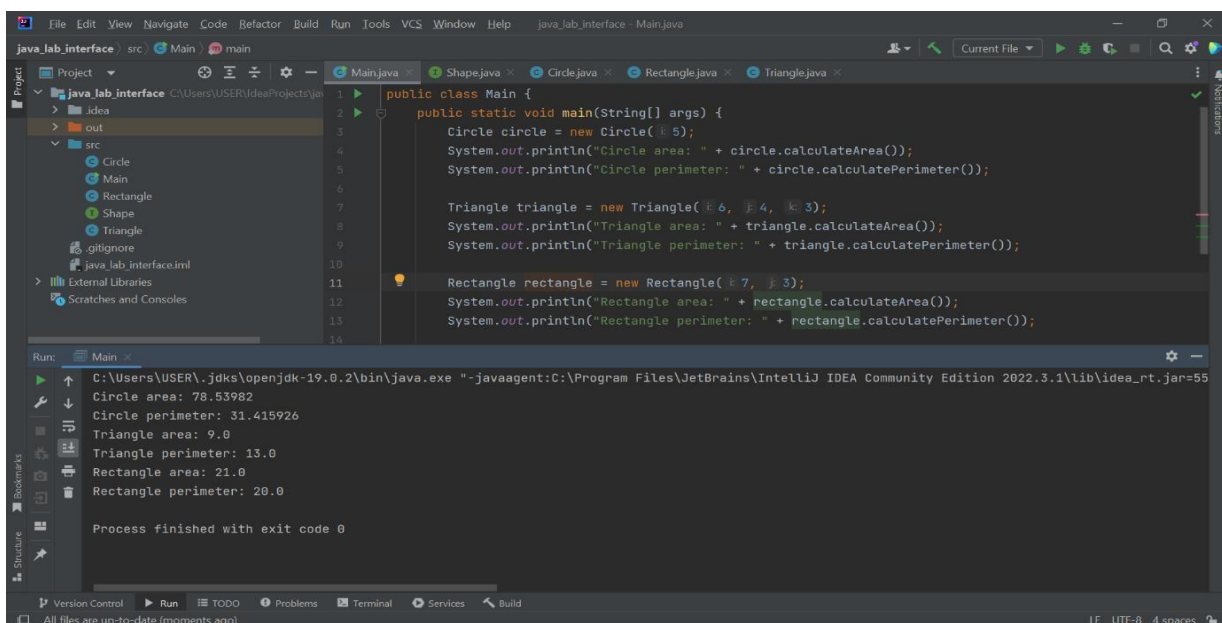
        Triangle triangle = new Triangle(6, 4, 3);
        System.out.println("Triangle area: " + triangle.calculateArea());
        System.out.println("Triangle perimeter: " +
        triangle.calculatePerimeter());

        Rectangle rectangle = new Rectangle(7, 3);
        System.out.println("Rectangle area: " + rectangle.calculateArea());
        System.out.println("Rectangle perimeter: " +
        rectangle.calculatePerimeter());

    }
}

```

Output



The screenshot shows the IntelliJ IDEA interface with the 'Run' tab active. The output window displays the following results:

```

C:\Users\USER\.jdk\openjdk-19.0.2\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.3.1\lib\idea_rt.jar=55
Circle area: 78.53982
Circle perimeter: 31.415926
Triangle area: 9.0
Triangle perimeter: 13.0
Rectangle area: 21.0
Rectangle perimeter: 20.0

Process finished with exit code 0

```

INPUT_pt2

```
public abstract class Employee {
    private String name;      private
    String address;
        public String getName()
    {
        return name;
    }      public void setName(String
name) {          this.name = name;
    }      public String
getAddress() {          return
address;
    }      public void setAddress(String
address) {          this.address = address;
    }      protected int
basicSalary;
        public Employee(String name, String address, int basicSalary)
    {
        this.name = name;          this.address = address;
        this.basicSalary = basicSalary;
    }      public abstract int
calculateMonthlySalary();

    // Getters and setters for name, address and basicSalary
}

public class BonusEmployee extends Employee {
    private int monthlyBonus;
        public BonusEmployee(String name, String address, int basicSalary, int
monthlyBonus) {
            super(name, address, basicSalary);
            this.monthlyBonus = monthlyBonus;
        }

    @Override
    public int calculateMonthlySalary() {
        return (basicSalary / 12) + monthlyBonus;
    }

    // Getter and setter for monthlyBonus }
```

```

public class NormalEmployee extends Employee {
    public NormalEmployee(String name, String address, int basicSalary) {
        super(name, address, basicSalary);
    }

    @Override
    public int calculateMonthlySalary() {
        return basicSalary / 12;
    }
}

public class TestEmployee {
    public static void main(String[] args) {
        NormalEmployee normalEmployee = new NormalEmployee("Harshit Jain",
" Mumbai", 1300000);
        BonusEmployee bonusEmployee = new BonusEmployee("Tim Cook", "Pune",
10000, 25);

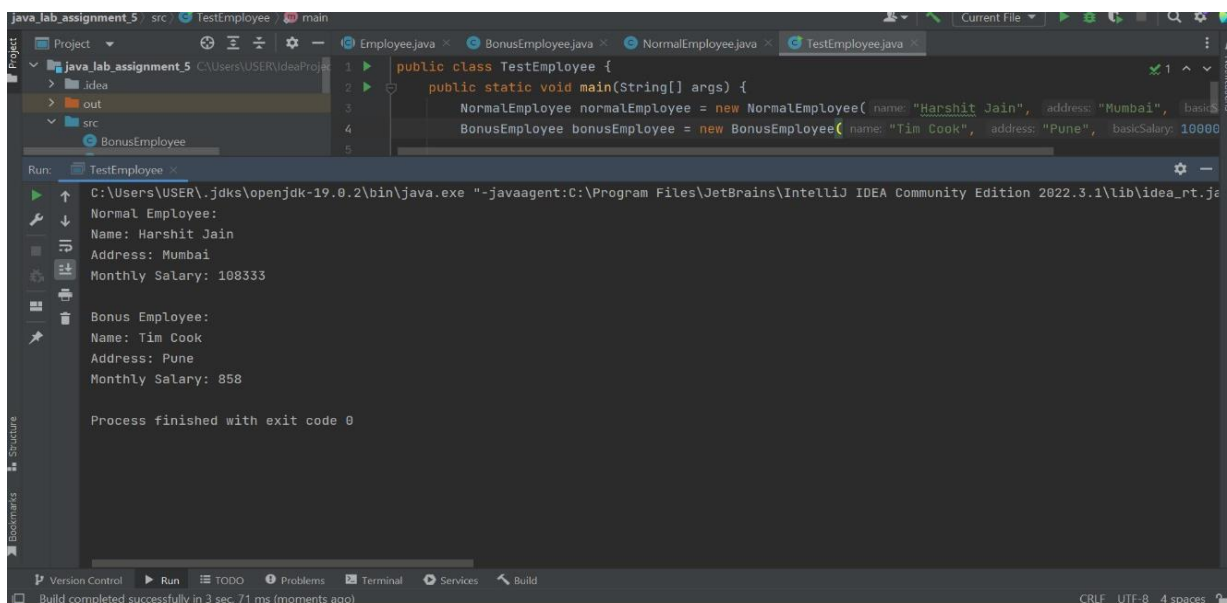
        System.out.println("Normal Employee:");
        System.out.println("Name: " + normalEmployee.getName());
        System.out.println("Address: " + normalEmployee.getAddress());
        System.out.println("Monthly Salary: " +
normalEmployee.calculateMonthlySalary());

        System.out.println();

        System.out.println("Bonus Employee:");
        System.out.println("Name: " + bonusEmployee.getName());
        System.out.println("Address: " + bonusEmployee.getAddress());
        System.out.println("Monthly Salary: " +
bonusEmployee.calculateMonthlySalary());
    }
}

```

Output



The screenshot shows the IntelliJ IDEA interface with the 'Run' console open. The output of the program is as follows:

```

C:\Users\USER\.jdk\openjdk-19.0.2\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.3.1\lib\idea_rt.jar"
Normal Employee:
Name: Harshit Jain
Address: Mumbai
Monthly Salary: 108333

Bonus Employee:
Name: Tim Cook
Address: Pune
Monthly Salary: 858

Process finished with exit code 0

```

Github Link - <https://github.com/Dhrubo2003/JAVA>