JAVA TASK

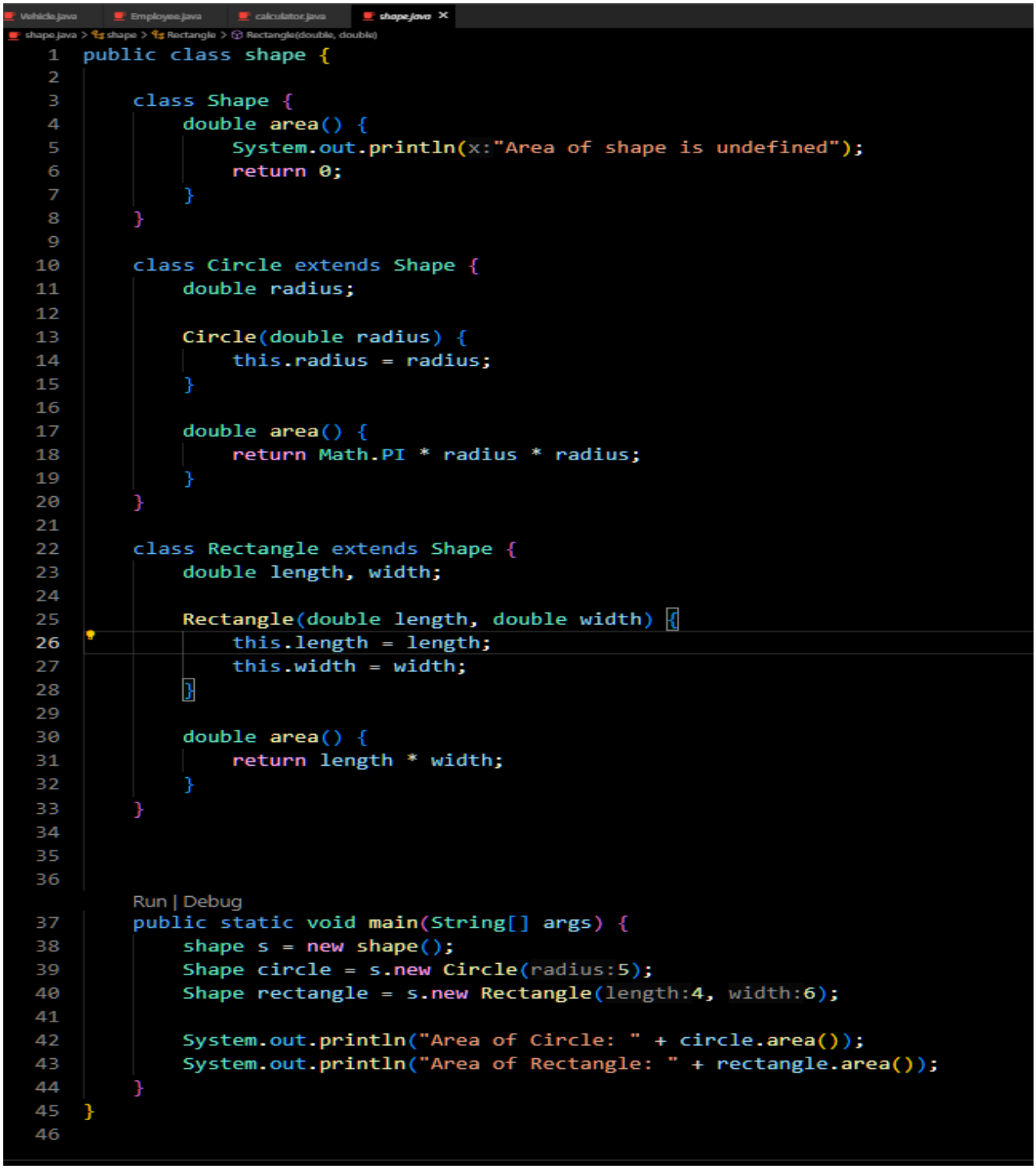
4 QUESTIONS

NAME : Vinay Sandip Dhake

Student ID/AF Code : AF04955282

Batch Code : ANP-D1544

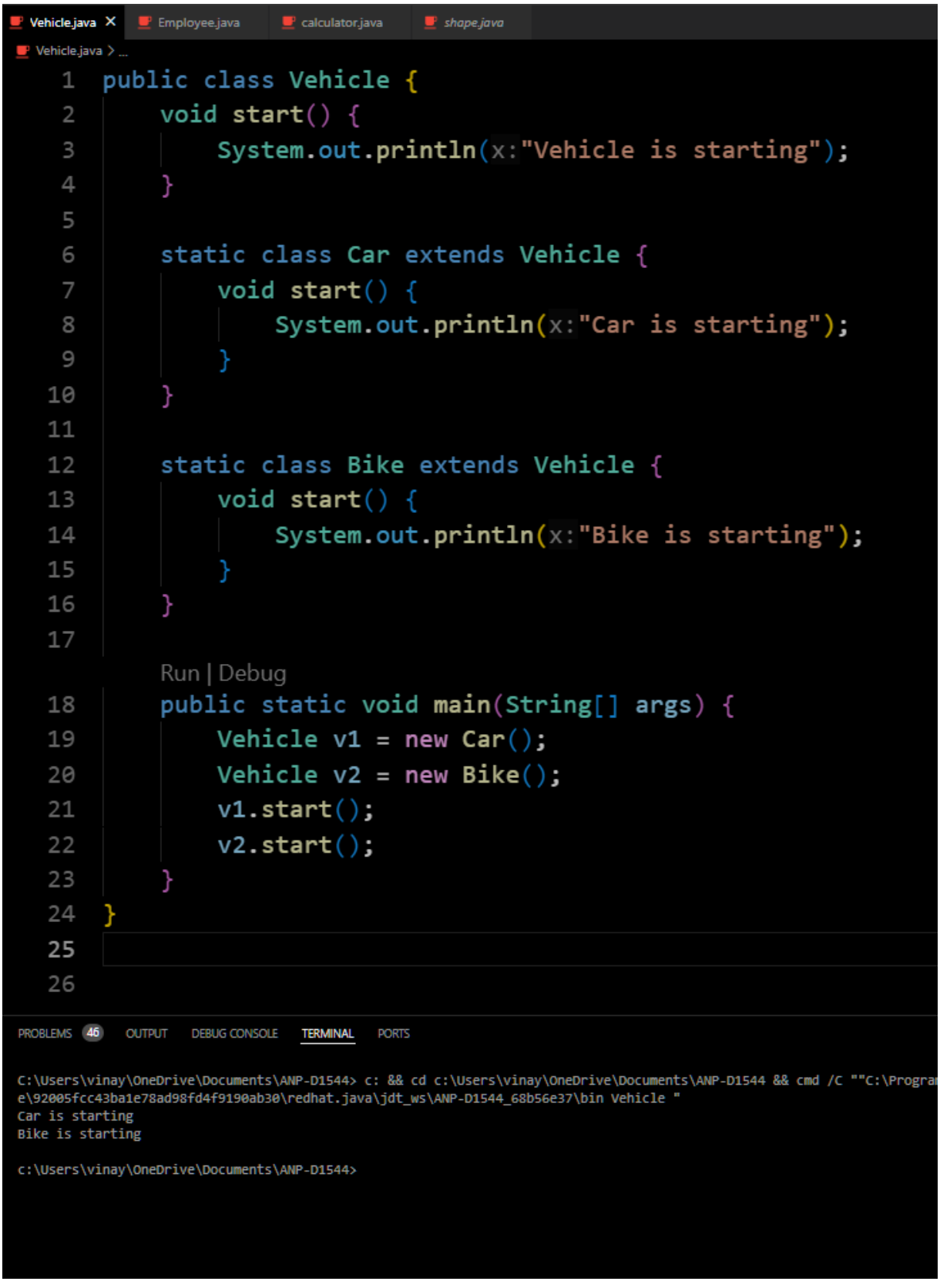
1. **Implement a Shape class with method area(), and override it in Circle, Rectangle .**



```java
public class shape {

    class Shape {
        double area() {
            System.out.println(x:"Area of shape is undefined");
            return 0;
        }
    }

    class Circle extends Shape {
        double radius;

        Circle(double radius) {
            this.radius = radius;
        }

        double area() {
            return Math.PI * radius * radius;
        }
    }

    class Rectangle extends Shape {
        double length, width;

        Rectangle(double length, double width) {
            this.length = length;
            this.width = width;
        }

        double area() {
            return length * width;
        }
    }



    Run | Debug
    public static void main(String[] args) {
        shape s = new shape();
        Shape circle = s.new Circle(radius:5);
        Shape rectangle = s.new Rectangle(length:4, width:6);

        System.out.println("Area of Circle: " + circle.area());
        System.out.println("Area of Rectangle: " + rectangle.area());
    }
}
```

```
Microsoft Windows [Version 10.0.26100.4351]
(c) Microsoft Corporation. All rights reserved.

C:\Users\vinay\OneDrive\Documents\ANP-D1544> cmd /C ""C:\Program Files\Java\jdk-24\bin\java.exe" --enable-preview -XX:+ShowCodeDetailsInExceptionMessages -cp C:\Users\vinay\AppData\Roaming\Code\User\workspaceStorage\92005fcc43ba1e78ad98fd4f9190ab30\redhat.java\jdt_ws\ANP-D1544_68b56e37\bin shape "
Area of Circle: 78.53981633974483
Area of Rectangle: 24.0

C:\Users\vinay\OneDrive\Documents\ANP-D1544>
```

2. **Create one parent class Vehicle, and two child classes Car and Bike.**



Vehicle.java | Employee.java | calculator.java | shape.java

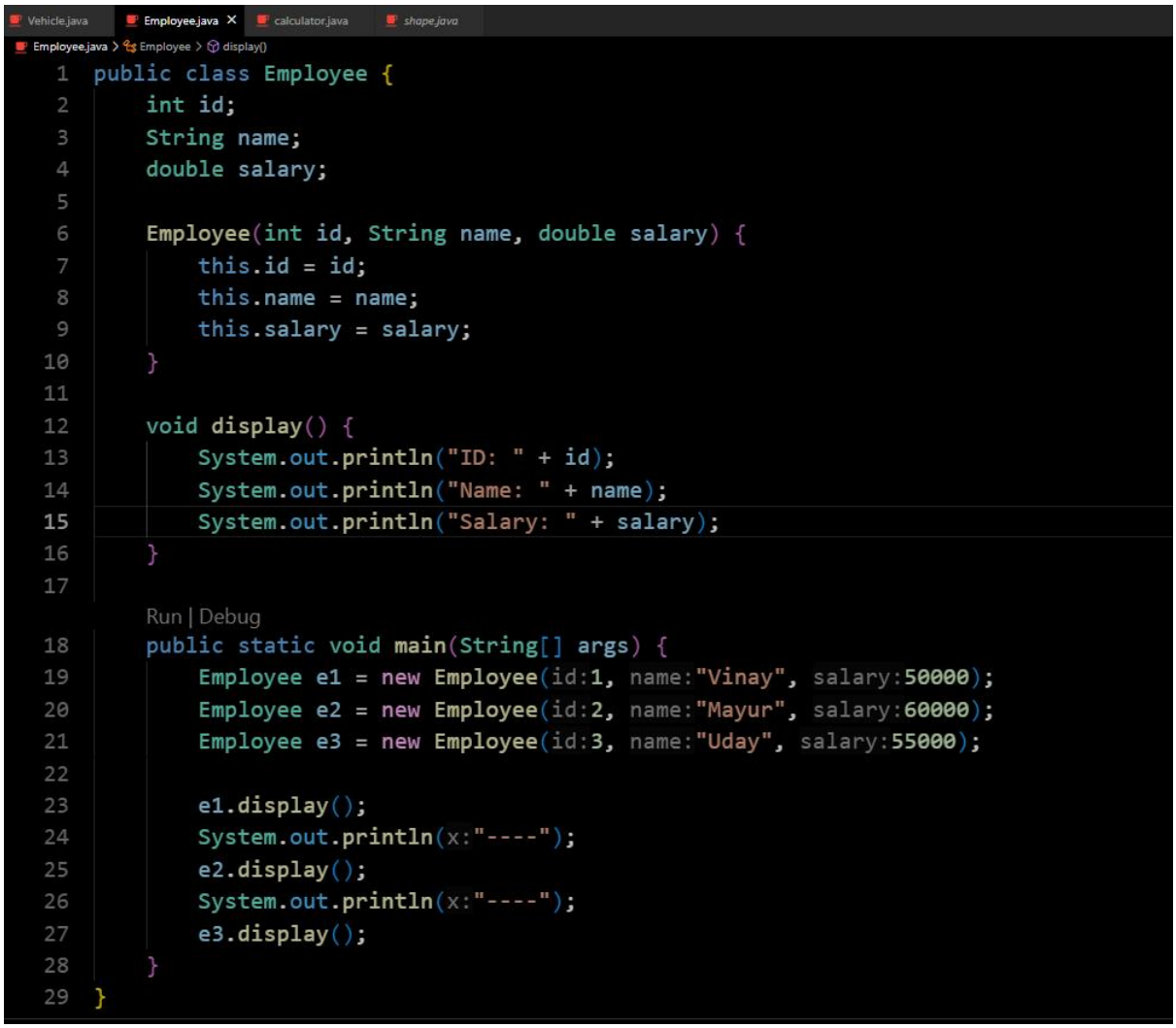
Vehicle.java > ...

```java
public class Vehicle {
    void start() {
        System.out.println(x:"Vehicle is starting");
    }

    static class Car extends Vehicle {
        void start() {
            System.out.println(x:"Car is starting");
        }
    }

    static class Bike extends Vehicle {
        void start() {
            System.out.println(x:"Bike is starting");
        }
    }

    Run | Debug
    public static void main(String[] args) {
        Vehicle v1 = new Car();
        Vehicle v2 = new Bike();
        v1.start();
        v2.start();
    }
}
```

PROBLEMS 46 OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
C:\Users\vinay\OneDrive\Documents\ANP-D1544> c: && cd c:\Users\vinay\OneDrive\Documents\ANP-D1544 && cmd /C ""C:\Progra
e\92005fcc43ba1e78ad98fd4f9190ab30\redhat.java\jdt_ws\ANP-D1544_68b56e37\bin Vehicle "
Car is starting
Bike is starting

c:\Users\vinay\OneDrive\Documents\ANP-D1544>
```

3. **Create a class Employee with fields id, name, and salary. Write a method to display employee information. Create multiple employee objects and call the method.**



```java
public class Employee {
    int id;
    String name;
    double salary;

    Employee(int id, String name, double salary) {
        this.id = id;
        this.name = name;
        this.salary = salary;
    }

    void display() {
        System.out.println("ID: " + id);
        System.out.println("Name: " + name);
        System.out.println("Salary: " + salary);
    }

    Run | Debug
    public static void main(String[] args) {
        Employee e1 = new Employee(id:1, name:"Vinay", salary:50000);
        Employee e2 = new Employee(id:2, name:"Mayur", salary:60000);
        Employee e3 = new Employee(id:3, name:"Uday", salary:55000);

        e1.display();
        System.out.println(x:"----");
        e2.display();
        System.out.println(x:"----");
        e3.display();
    }
}
```

```
c:\Users\vinay\OneDrive\Documents\ANP-D1544> c: && cd c:\Users\vinay\OneDrive\Documents\ANP-D1544 && cmd /C ""C:\Pro
CodeDetailsInExceptionMessages -cp C:\Users\vinay\AppData\Roaming\Code\User\workspaceStorage\92005fcc43ba1e78ad98fd4
ID: 1
Name: Vinay
Salary: 50000.0
----
ID: 2
Name: Mayur
Salary: 60000.0
----
ID: 3
Name: Uday
Salary: 55000.0

c:\Users\vinay\OneDrive\Documents\ANP-D1544>
```

4. **Write a program to create a class Calculator with methods to perform addition, subtraction, multiplication, and division. Create an object and perform all operations.**

calculator.java > calculator > main(String[])

```java
public class calculator {
    int add(int a, int b) {
        return a + b;
    }
    int subtract(int a, int b) {
        return a - b;
    }
    int multiply(int a, int b) {
        return a * b;
    }
    double divide(int a, int b) {
        if (b == 0) {
            System.out.println(x:"Cannot divide by zero");
            return 0;
        }
        return (double) a / b;
    }

    Run | Debug
    public static void main(String[] args) {
        calculator calc = new calculator();
        int a = 60, b = 40;
        System.out.println("Addition: " + calc.add(a, b));
        System.out.println("Subtraction: " + calc.subtract(a, b));
        System.out.println("Multiplication: " + calc.multiply(a, b));
        System.out.println("Division: " + calc.divide(a, b));
    }
}
```

```
c:\Users\vinay\OneDrive\Documents\ANP-D1544> c: && cd c:\Users\vinay\OneDrive\Documents\ANP-D1544 &&
a.exe" --enable-preview -XX:+ShowCodeDetailsInExceptionMessages -cp C:\Users\vinay\AppData\Roaming\C
fd4f9190ab30\redhat.java\jdt_ws\ANP-D1544_68b56e37\bin calculator "
Addition: 100
Subtraction: 20
Multiplication: 2400
Division: 1.5

c:\Users\vinay\OneDrive\Documents\ANP-D1544>
```