

CLASS TEST – 8

SET-2:(Challa Ravi Teja)

PROGRAM 1:

// File: src/test/Main.java

package test;

```
interface Shape {  
    double getArea();  
}
```

```
class Rectangle implements Shape {  
    private double width;  
    private double height;  
  
    public Rectangle(double width, double height) {  
        this.width = width;  
        this.height = height;  
    }
```

```
    @Override  
    public double getArea() {  
        return width * height;  
    }  
}
```

```
class Circle implements Shape {  
    private double radius;
```

```

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

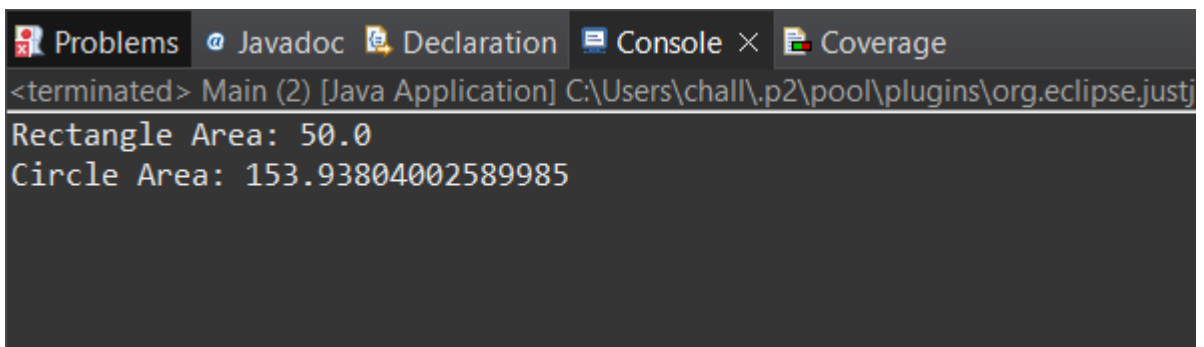
@Override
public double getArea() {
    return Math.PI * radius * radius; // Corrected PI value
}
}

public class Main {
    public static void main(String[] args) {
        Shape rectangle = new Rectangle(5, 10);
        Shape circle = new Circle(7);

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

```

OUTPUT:



```

Problems Javadoc Declaration Console × Coverage
<terminated> Main (2) [Java Application] C:\Users\chall\.p2\pool\plugins\org.eclipse.justj
Rectangle Area: 50.0
Circle Area: 153.93804002589985

```

Question:

❑ **What is wrong with the Circle class implementation?**

A: THE PI VALUE IN THE CIRCLE CLASS IS GIVEN 3.14 IT IS THE ERROR WHEN COMPILING.

❑ **How can you fix it to ensure accurate area calculation?**

A: THE PI VALUE IS FIX BY CHANGING THE PI VALUE FROM 3.14 TO Math.PI

PROGRAM 2:

```
package test;
```

```
abstract class Employee {  
    protected String name;
```

```
    // Constructor
```

```
    public Employee(String name) {  
        this.name = name;  
    }
```

```
    abstract void performDuties();  
}
```

```
class Manager extends Employee {
```

```
public Manager(String name) {  
    super(name);  
}
```

```
@Override  
void performDuties() {  
    System.out.println(name + " is managing the team.");  
}  
}
```

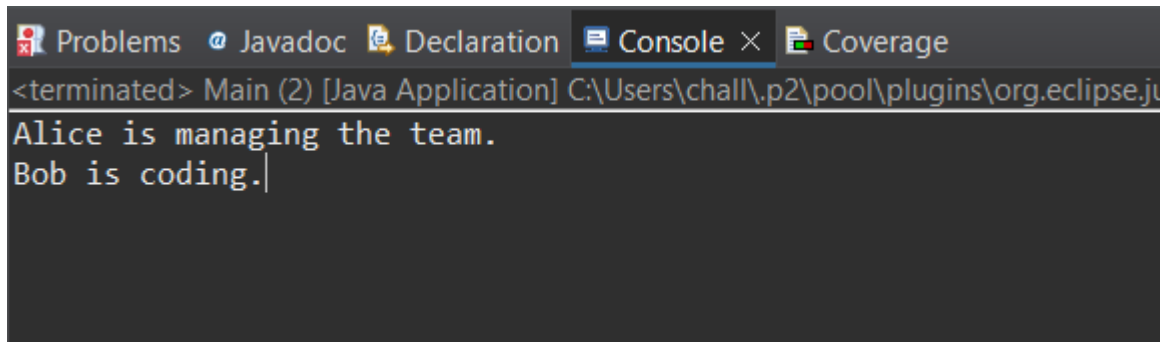
```
class Developer extends Employee {  
    public Developer(String name) {  
        super(name);  
    }  
}
```

```
@Override  
void performDuties() {  
    System.out.println(name + " is coding.");  
}  
}
```

```
public class Main {  
    public static void main(String[] args) {  
        Employee manager = new Manager("Alice");  
        Employee developer = new Developer("Bob");  
  
        manager.performDuties();  
    }  
}
```

```
        developer.performDuties();  
    }  
}
```

OUTPUT:

A screenshot of the Eclipse IDE's Console window. The window has a dark background and a light-colored title bar. The title bar contains several tabs: 'Problems', 'Javadoc', 'Declaration', 'Console' (which is active and highlighted), and 'Coverage'. Below the title bar, the console shows the output of a Java application. The first line is '<terminated> Main (2) [Java Application] C:\Users\chall\p2\pool\plugins\org.eclipse.ju'. The second line is 'Alice is managing the team.' and the third line is 'Bob is coding.' followed by a cursor. The text is in a monospaced font.

```
<terminated> Main (2) [Java Application] C:\Users\chall\p2\pool\plugins\org.eclipse.ju  
Alice is managing the team.  
Bob is coding.|
```

Question:

☐ **What could be the issue with the Employee class or its subclasses?**

A: THE ISSUE IS USING "E SO IT IS GETTING ERROR

☐ **How can you ensure that the name field is properly initialized and used?**

A: INSTEAD OF "E USE THE “ “ QUOTES TO PRINT.