



LABORATORY WORK BOOK

Name of the Student : MD. Mateen

Class : CSE - C Semester : I

Course Code : ACSD03 Course Name : OOPs Java Lab

Name of the Course Faculty : Dr. Y.D. Dwivedi

Roll Number

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Exercise Number : 14

Week Number : 14

Date : 19/9/2024

S. No.	Exercise Number	EXERCISE NAME	MARKS AWARDED						
			Aim/ Preparation	Algorithm / Procedure		Source Code	Program Execution	Viva - Voce	Total
				Performance in the Lab		Calculations and Graphs	Results and Error Analysis		
			4	4		4	4	4	20
1	14.1	Abstract super class	4	2	2	4	4	4	20
2	14.2	Geometric object							
3	14.3	movable Interface							
4									
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12									

Signature of the Student

Signature of the Faculty

14.1 Abstract class

```
class shape {
```

```
    protected String Name;
```

```
    public shape(String Name){
```

```
        this.name = name;
```

```
    }
```

```
    protected abstract double get Area();
```

```
    protected abstract double get perimeter();
```

```
    public String get Name() {
```

```
        return name;
```

```
    }
```

```
public class circle extends shape {
```

```
    protected double radius;
```

```
    public circle(String name, double radius){
```

```
        super(name);
```

```
        this.radius = radius;
```

```
    }
```

```
    super(name);
```

```
This.length = length;
```

```
this.width = width; }
```

```
protected double getPerimeter() {
```

```
    return 2 * (length + width);
```

```
}
```

```
public class Square extends Rectangle {
```

```
    public Square(String name, double side) {
```

```
        Super(name, side)
```

```
}
```

Result:-

Compilation Error -

14.2 Geometric Object

```
public interface GeometricObject {
```

```
    double getArea();
```

```
    double getPerimeter();
```

```
}
```

```
public class Circle implements GeometricObject {
```

```
    private double radius;
```

```
    public Circle(double radius) {
```

```
        this.radius = radius;
```

```
}
```

```

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

public double getPerimeter() {
    return 2 * Math.PI * radius;
}

```

Result : Runtime Error

14.3 : Movable Interface

```

public interface Movable {
    void moveUp();
    void moveDown();
    void moveLeft();
    void moveRight();
}

public class movablePoint implements Movable {
    public int x;
    public int y;
}

```


public movable point (int x, int y) {

 this.x = x;

 this.y = y;

}

public void movable up() {

 y++;

}

public void movable down() {

 y--;

}

public void movable left() {

 x--;

}

public void main right() {

 x++;

}

}