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Lab06

1 .

```
final class Student {  
    class Undergraduate extends Student{}  
  
    final int marks = 100;  
  
    final void display() {  
        System.out.println("The value of marks is: " + marks);  
    }  
}
```

2.

```
abstract class Shape {  
  
    protected double length;  
    protected double breadth;  
  
    public Shape(double length, double breadth) {  
        this.length = length;  
        this.breadth = breadth;  
    }  
}
```

```
abstract double calculateArea();

public void display() {
    System.out.println("The length of the shape is: " + length);
    System.out.println("The breadth of the shape is: " + breadth);
    System.out.println("The area of the shape is: " + calculateArea());
}
}
```

```
class Rectangle extends Shape {

    public Rectangle(double length, double breadth) {
        super(length, breadth);
    }

    @Override
    double calculateArea() {
        return length * breadth;
    }
}
```

```
class Circle extends Shape {

    public Circle(double radius) {
        super(radius, radius);
    }
}
```

```
@Override  
double calculateArea() {  
    return Math.PI * Math.pow(radius, 2);  
}  
}  
  
public class Main {  
  
    public static void main(String[] args) {  
        Rectangle rectangle = new Rectangle(10, 5);  
        rectangle.display();  
  
        Circle circle = new Circle(5);  
        circle.display();  
    }  
}
```