

Don Bosco Institute of Technology, Kurla(W)
Department of Electronics and Tele-Communication Engineering
ECL304 - Skill Lab: C++ and Java Programming
Sem III
2021-22

Lab Number:	9
Student Name:	Sarika Laxmikant Galphade
Roll No :	36

Title:

1. Write a java program to create an abstract class named Shape that contains two integers and an abstract method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea() that prints the area of the given shape.

Learning Objective:

Students will be able to implement abstract class and abstract method programs.

Learning Outcome:

- Understanding the abstraction concept and hiding of the unnecessary code.

Course Outcome:

ECL304.4	1. Implement different programming applications using packaging.
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Theory:

- Explain in details about necessity of data hiding in any application / project.
- Explain abstract class and abstract methods.

Algorithm :	<ol style="list-style-type: none">1. START2. Create abstract class Shape.3. Create class Rectangle extended by Shape.4. Create class Triangle extended by Shape.5. Create class Circle extended by Shape.6. Create public abstract class7. Create all object and display.8. END
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Program:	<pre> package inheritance1; import java.util.*; abstract class Shape{ int length,breadth,radius; Scanner input = new Scanner(System.in); abstract void printArea(); } class Rectangle extends Shape{ void printArea() { System.out.println("For finding the Area of Rectangle"); System.out.print("Enter length and breadth"); length = input.nextInt(); breadth = input.nextInt(); System.out.println("The area of Rectangle is: " + length * breadth); } } class Triangle extends Shape{ void printArea() { System.out.println("For finding the Area of Triangle"); System.out.println("Enter Base and Height:"); length = input.nextInt(); breadth = input.nextInt(); System.out.println("The area of Triangle is: " + (length * breadth) / 2); } } class Cricle extends Shape { void printArea() { System.out.println("For finding the Area of Cricle"); System.out.print("Enter Radius: "); radius = input.nextInt(); System.out.println("The area of Cricle is: " + 3.14f * radius * radius); } } public class abstractshape { public static void main(String[] args) { Shape rec = new Rectangle(); rec.printArea(); Shape tri = new Triangle(); tri.printArea(); Shape cri = new Cricle(); cri.printArea(); </pre>
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	<pre> } }</pre>
Input given:	-
Output Screenshot:	<pre>For finding the Area of Rectangle Enter length and breadth 12 2 The area of Rectangle is: 24 For finding the Area of Triangle Enter Base and Height: 6 7 The area of Triangle is: 21 For finding the Area of Circle Enter Radius: 3 The area of Circle is: 28.26 </pre>