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:	**10**
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Title:

1. Write a java program to implement Multiple Inheritance using Interfaces. Create an interface called Management with selectCandidate() method. Another interface called Department with allotSubject() method. Class called HOD will implements these two interfaces and define the methods and access them with valid objects.

Learning Objective:

Students will be able to implement multiple inheritance using Interface concepts

Learning Outcome:

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

Course Outcome:

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

Theory:

What is complete abstraction and how is it achieved in JAVA?

As abstraction is one of the core principles of Object-oriented programming practices and Java following all OOPs principles, abstraction is one of the major building blocks of java language.
In java, abstraction is achieved by `interfaces` and `abstract classes`. Interfaces allows you to abstract the implemetation completely while abstract classes allow partial abstraction as well.
Data abstraction spans from creating simple data objects to complex collection implementations such as HashMap or `HashSet`.
Similarly, control abstraction can be seen from defining simple function calls to complete open source frameworks. control abstraction is main force behind structured programming.

Explain multiple abstraction and how is it performed in Java?

Multiple inheritance in Java programming is achieved or implemented using interfaces. Java does not support multiple inheritance using classes.

In simple term, a class can inherit only one class and multiple interfaces in a java programs. Hence, Java does not support multiple inheritance using classes. But, we can achieve it using interfaces.
"A class can extend only one class but it can implement multiple interfaces."

Algorithm :	1.Start 2.Create interface - Management and declare select candidate() in it 3.Create interface - Department and declare allotsubject() in it 4.Create a class HOD to inherit interface management and department and to take input of details 5.Create the object of the HOD class in main function and call the methods. 6.Print the result 7.End

Program:	import java.util.*;
	interface Management
	{
	void selectCandidate();
	}
	interface Department
	{
	void allotSubject();
	}
	class HOD implements Department, Management
	{
	String Candidate;
	String Subject;
	void getdata()
	{
	Scanner in=new Scanner(System.in);
	System.out.println("Enter Candidate name:");
	Candidate=in.nextLine();
	System.out.println("Enter Subject:");
	Subject=in.nextLine();
	}
	public void selectCandidate()
	{
	System.out.println("Candidate Name : "+Candidate);
	}
	public void allotSubject()
	{
	System.out.println("Subject Alloted :

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"+Subject);
   }
}
class Main
{
   public static void main (String[] args)
   {
      HOD ob = new HOD();
      ob.getdata();
      ob.selectCandidate();
      ob.allotSubject();
   }
}
```

Output Screenshot: