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:	07
Student Name:	SHIVAM SHARMA
Roll No :	E-19

Title:
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:

- Ability to execute a simple Multiple Inheritance using Interfaces. Java program with and without any inputs to the program.

Learning Outcome:

- Understanding Multiple Inheritance using Interfaces java programming

Theory:

Multiple Inheritance using Interfaces.

An interface in Java is a blueprint of a class. It has static constants and abstract methods.

The interface in Java is *a mechanism to achieve abstraction*. There can be only abstract methods in the Java interface, not method body. It is used to achieve abstraction and multiple inheritance in Java.

In other words, you can say that interfaces can have abstract methods and variables. It cannot have a method body.

Java Interface also represents the IS-A relationship

It cannot be instantiated just like the abstract class.

Since Java 8, we can have default and static methods in an interface.

Since Java 9, we can have private methods in an interface.

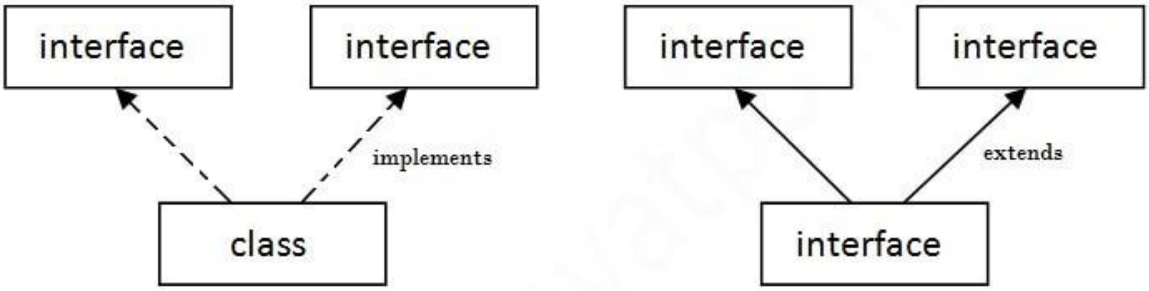
Why use Java interface?

There are mainly three reasons to use interface. They are given below.

- It is used to achieve abstraction.
- By interface, we can support the functionality of multiple inheritance.
- It can be used to achieve loose coupling.

- **How to declare an interface?**
- An interface is declared by using the interface keyword. It provides total abstraction; means all the methods in an interface are declared with the empty body, and all the fields are public, static and final by default. A class that implements an interface must implement all the methods declared in the interface.

- **Multiple inheritance in Java by interface**
- If a class implements multiple interfaces, or an interface extends multiple interfaces, it is known as multiple inheritance.



Multiple Inheritance in Java

ALGORITHM 1

Step 1 : start
Step 2 : import java. Util. * package
Step 3 : create 1 st interface management
Step 4 : declare select candidate () method in interface management
Step 5 : create 2 nd interface department
Step 6 : declare Allotsubject ()method in interface department
Step 7 : create class HOD and implement both the interface department i.e management and department using keyword implement
Step 8 : implement both the methods select candidate () and Allotsubject method in HOD class which was declared in interface
Step 9 : create main class
Step 10 : create object of HOD class
Step 11: using this object call both the method of interface which is implemented in HOD class
Step 12 : End

INPUT :

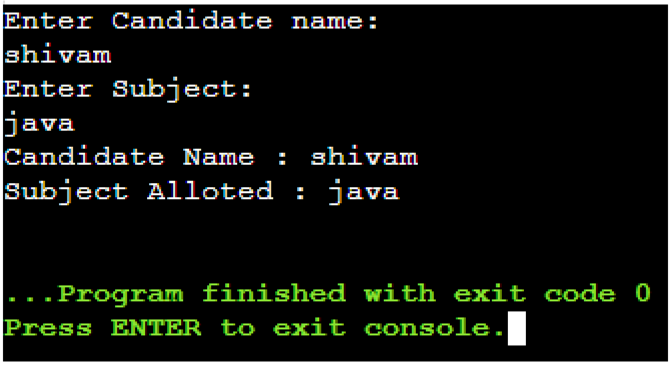
```
import java.util.*;
interface Management
{
 void selectCandidate();
}
interface Department
{
 void allotSubject();
}
class HOD implements Department, Management
{
 String Candidate;
 String Subject;
 void getdata()
 {
 Scanner in=new Scanner(System.in);




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

OUTPUT:



```
Enter Candidate name:
shivam
Enter Subject:
java
Candidate Name : shivam
Subject Alloted : java


...Program finished with exit code 0
Press ENTER to exit console.
```