

**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**

<b>Lab Number:</b>	<b>10</b>
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<b>Roll No :</b>	<b>33</b>

**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:**

<b>ECL304.4</b>	1. Implement different programming applications using packaging.
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**Theory:**

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

Through Data Abstraction we can reduce a real-world entity into its essential defining features and show only what is necessary to the users. The concept of data abstraction is totally based on abstract classes in Java.

There are two ways in which you can hide the data or can implement the concept of data abstraction they are:-

- 1) Abstraction:- (0 to 100%) abstraction of the data.
- 2) Interface:- By using interfaces, you can achieve 100% data abstraction or complete abstraction.

- Explain multiple abstraction and how is it performed in Java?

When we create interface in java we can extend other classes or implement interfaces from the base interface class. In java multiple inheritance is supported by interface. Multiple interfaces can be implemented by the sub interface and thus the sub interface can inherit properties or behaviour from the parent interfaces. We can implement a class from the base interface by using the keyword implements. To inherit a interface from another interface we use the keyword extends.

**Faculty: Ms. Deepali Kayande**

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**Algorithm:**

- 1) Create interface Management and Department and declare methods selectCandidate() and allotSubject().
- 2) Implement class HOD from Management and Department interface (Multiple inheritance). Declare variables name and qualification and take input from user in selectCandidate() method declared in the class HOD.
- 3) Declare variable subject and take input from user in allotSubject method declared in class HOD and then display the output.
- 4) Create object of the class and call the functions selectCandidate() and allotSubject().

**Program:**

/\* /\*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. \*/

```
package interface_program;
```

```
import java.util.Scanner;
```

```
interface Management{  
    public void selectCandidate();  
}
```

```
interface Department{  
    public void allotSubject();  
}
```

```
public class HOD implements Management,Department {
```

```
    Scanner sc=new Scanner(System.in);  
    String name;  
    String qualification;
```

```
    public void selectCandidate(){  
        System.out.println("Enter the name of the candidate ");  
        name=sc.next();  
        /*System.out.println("Enter the qualification of the candidate");  
        qualification=sc.next(); */  
    }
```

```
    @Override  
    public void allotSubject() {  
        String subject;
```

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```
        System.out.println("Enter the subject ");
        subject=sc.next();
        System.out.println("Candidate "+name+" is allotted for the subject "+subject);
    }

    public static void main(String[] args) {
        HOD obj=new HOD();
        obj.selectCandidate();
        obj.allotSubject();
        // TODO Auto-generated method stub

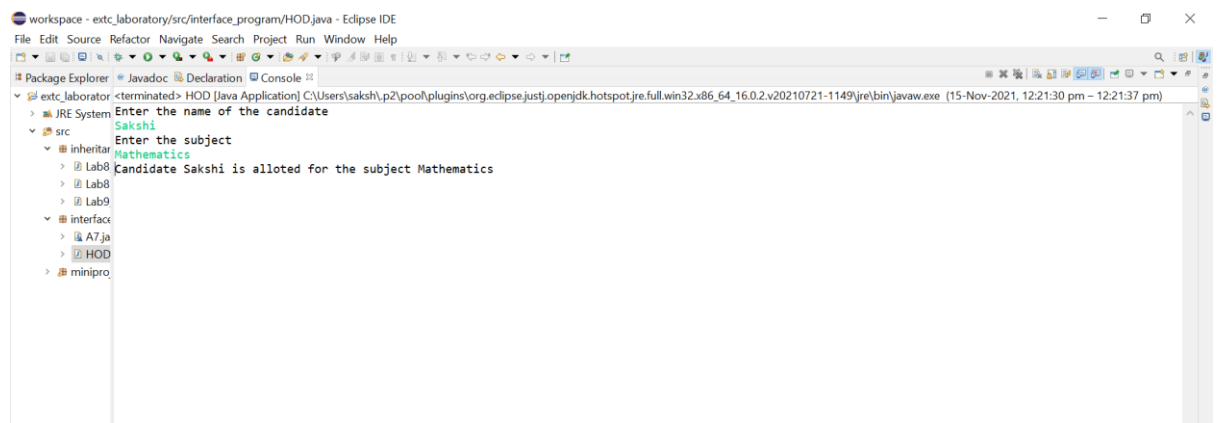
    }

}
```

**INPUT GIVEN:**

Name of the candidate- Sakshi  
Subject- Mathematics

**OUTPUT SCREENSHOT:**



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