

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:	8
Student Name:	Simran Santosh Koparkar
Roll No :	41

Title:

1. To perform Multilevel Inheritance in JAVA. Create a Person class representing name, age and address. Inherit person class to employee class with emp ID and salary factor. Inherit the Employee class to programmer class with technical skills and hike attributes. Implement valid methods to input the details from the user in the main method and display for 3 programmers.
2. To perform Hierarchical Inheritance in JAVA. Create an Employee class with attributes EmpID and EmpSalary. Also create necessary methods/constructors to accept these values from the user. Create classes permanentEmployee and TemporaryEmployee which will be derived classes of Employee. Mention hike attribute in these derived classes and calculate the total salary using generate_salary() method for respective types of employees. Objects of the derived classes should be created and salaries for the permanent and temporary employees should be calculated and displayed on the screen.

Learning Objective:

- Students will be able to perform multilevel inheritance using JAVA.
- Students will be able to perform hierarchical inheritance using JAVA

Learning Outcome:

- To understand how to use the private members using friend function and friend class.

Course Outcome:

ECL304.2	Comprehend building blocks of OOPs language, inheritance, package and interfaces.
-----------------	---

Theory:

- Explain in details about various inheritance types supported in JAVA
On the basis of class, there can be three types of inheritance in java: single, multilevel and hierarchical. In java programming, multiple and hybrid inheritance is supported through interface only. We will learn about interfaces later.

Faculty: Ms. Deepali Kayande

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

Algorithm :	
Program:	<pre>Using System; Using System.Collection.Generic; Using System.Linq; Using System.Text; Using System.Threading.Tasks; class Employee { int empid; string name; Employee() { empid=1; name="abcd"; } Employee(int eid,string nm) { empid=eid; name=nm; } public void put_emp_info() { console.writeline("Employee id is :-" + empid); console.writeline("Employee name is :-" + name); } }</pre>

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

	<pre>} public class Department:Employee { int deptid; string dept_name department() { deptid=1; dept_name="abcd"; } department(int did,string nm) { deptid=did; dept_name=nm; } public void put_dept_info() { console.writeline("department id is :-" + deptid); console.writeline("department name is :-" + ept_name); } } class salary:department { int sal; public salary() {</pre>
--	--

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

	<pre> sal=1; } public salary(int s); { sal=s; } public void put_sal() { console.writeline("salary id is :-" + sal); } } } </pre>
Output Screenshot:	

Program:	<pre> package inheritance; class Employee{ float salary = 56000; void dispSalary() { System.out.println("The Employee salary is :" + salary); } } class PermanentEmp extends Employee{ double hike = 0.8; void dispSalary(){ </pre>
-----------------	---

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

```
        System.out.println("Permanent Emp class");
    }

    void incrementSalary()
    {
        dispSalary();
        super.dispSalary();

        System.out.println("The Permanent Employee incremented salary is
        :"+(salary)+(salary));
    }
}

class TemporaryEmp extends Employee{
    double hike = 0.65;
    void incrementSalary()
    {
        super.dispSalary();

        System.out.println("The Temporary Employee increment salary is
        :"+(salary)+(salary));
    }
}

public class hierarchicalinheritance {
    public static void main(String args[]){
        PermanentEmp p = new PermanentEmp();
        TemporaryEmp t = new TemporaryEmp();

        p.incrementSalary();
        t.incrementSalary();
    }
}
```

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

Input given:	-
Output Screenshot:	<pre>Permanent Emp class The Employee salary is :56000.0 The Permanent Employee incremented salary is :56000 The Employee salary is :56000.0 The Temporary Employee increment salary is :56000.0 [Program finished]</pre>