

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:	Prathamesh Yerekar
Roll No :	25

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.
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Theory:

- Explain in details about various inheritance types supported in JAVA

Inheritance in Java is a concept that acquires the properties from one class to other classes : for example , the relationship between father and son .

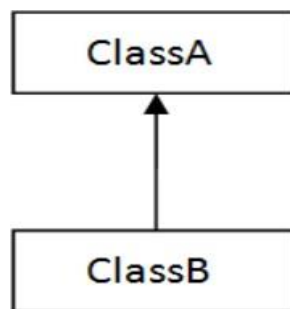
Faculty: Ms. Deepali Kayande

In Java , a class can inherit attributes and methods from another class . The class that inherits the properties is known as the sub-class or child class . The class from which the properties are inherited is known as the superclass or the parent class.

On the basis of class, there can be three types of inheritance in java: single, multilevel and hierarchical.

Single Inheritance

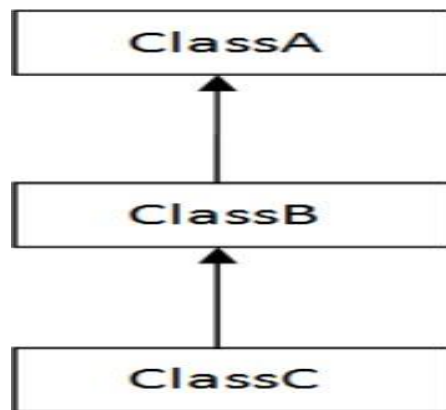
When a class inherits another class, it is known as a single inheritance.



1) Single

Multilevel Inheritance

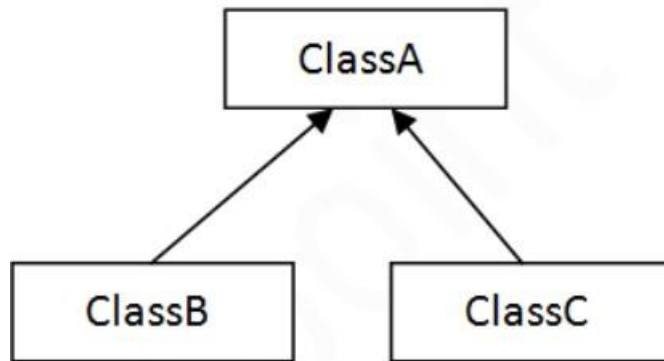
When there is a chain of inheritance, it is known as multilevel inheritance.



2) Multilevel

Hierarchical Inheritance

When two or more classes inherits a single class, it is known as hierarchical inheritance.



3) Hierarchical

Why multiple inheritance is not supported in java?

To reduce the complexity and simplify the language, multiple inheritance is not supported in java.

Program:	https://github.com/PrathameshYerekar/Skill-Labs-With-OOPM-2/blob/main/25_Lab8.java
Input given:	Salary = 56000 Hike for perm employee = 0.6 Hike for temp employee = 0.45
Output Screenshot:	<pre>The Employee salary is :56000.0 The Permanent Employee incremented salary is :89600.0 The Employee salary is :56000.0 The Temporary Employee incremented salary is :81200.0</pre>