MODULE – 2- INHERITANCE AND INTERFACES

PROGRAM – 1:

Aim:

To develop a simple Java application that implements an Employee class and inherits Programmer, Assistant Professor, Associate Professor, and Professor from it. The program calculates salary components such as DA, HRA, PF, and Staff Club Fund and generates a pay slip displaying gross and net salary.

Algorithm:

1)Define an Employee class with attributes:

Emp\_name, Emp\_id, Address, Mail\_id, Mobile\_no.

2. Create inherited classes (Programmer, Assistant Professor, Associate Professor, and Professor) with an additional attribute:

Basic Pay (BP).

3. Implement a method in each subclass to:

Calculate DA = 97% of BP.

Calculate HRA = 10% of BP.

Calculate PF = 12% of BP.

Calculate Staff Club Fund = 0.1% of BP.

Compute Gross Salary = BP + DA + HRA.

Compute Net Salary = Gross Salary - (PF + Staff Club Fund).

4. Display the Pay Slip showing salary details.

5. In the main method, accept user input, create an object of the chosen employee type, and generate the pay slip.

PROGRAM:

import java.util.Scanner;

class Employee {

String empName, empId, address, mailId;

long mobileNo;

Employee(String name, String id, String addr, String mail, long mobile) {

this.empName = name;

this.empId = id;

this.address = addr;

this.mailId = mail;

this.mobileNo = mobile;

}

void displayDetails() {

System.out.println("\nEmployee Details:");

System.out.println("Name: " + empName);

System.out.println("ID: " + empId);

System.out.println("Address: " + address);

System.out.println("Mail ID: " + mailId);

System.out.println("Mobile No: " + mobileNo);

}

}

class Salary extends Employee {

double basicPay;

Salary(String name, String id, String addr, String mail, long mobile, double bp) {

super(name, id, addr, mail, mobile);

this.basicPay = bp;

}

void generatePaySlip() {

double da = 0.97 \* basicPay;

double hra = 0.10 \* basicPay;

double pf = 0.12 \* basicPay;

double staffClubFund = 0.001 \* basicPay;

double grossSalary = basicPay + da + hra;

double netSalary = grossSalary - (pf + staffClubFund);

displayDetails();

System.out.println("Basic Pay: " + basicPay);

System.out.println("DA (97%): " + da);

System.out.println("HRA (10%): " + hra);

System.out.println("PF (12%): " + pf);

System.out.println("Staff Club Fund (0.1%): " + staffClubFund);

System.out.println("Gross Salary: " + grossSalary);

System.out.println("Net Salary: " + netSalary);

}

}

public class EmployeeSalary {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

System.out.println("Enter Employee Name:");

String name = sc.nextLine();

System.out.println("Enter Employee ID:");

String id = sc.nextLine();

System.out.println("Enter Address:");

String address = sc.nextLine();

System.out.println("Enter Mail ID:");

String mail = sc.nextLine();

System.out.println("Enter Mobile Number:");

long mobile = sc.nextLong();

System.out.println("Enter Basic Pay:");

double basicPay = sc.nextDouble();

Salary emp = new Salary(name, id, address, mail, mobile, basicPay);

emp.generatePaySlip();

sc.close();

}

}

OUTPUT:

Enter Employee Name:

Alice Brown

Enter Employee ID:

EMP1002

Enter Address:

456 Street, City

Enter Mail ID:

alice@email.com

Enter Mobile Number:

9876543210

Enter Basic Pay:

50000

Employee Details:

Name: Alice Brown

ID: EMP1002

Address: 456 Street, City

Mail ID: alice@email.com

Mobile No: 9876543210

Basic Pay: 50000.0

DA (97%): 48500.0

HRA (10%): 5000.0

PF (12%): 6000.0

Staff Club Fund (0.1%): 50.0

Gross Salary: 103500.0

Net Salary: 97450.0

RESULT:

Thus,the java program to develop a simple Java application that implements an Employee class and inherits Programmer, Assistant Professor, Associate Professor, and Professor from it and the program calculates salary components such as DA, HRA, PF, and Staff Club Fund and generates a pay slip displaying gross and net salary is executed and verified successfully.