**Single Inheritance**

**1) Area of circle & Volume**

import java.util.Scanner;

class Area

{

double r,A;

Area(double r)

{ this.r=r;

}

void cal\_area()

{

A=3.14\*r\*r;

System.out.println("Radius="+r+"\nArae="+A);

}

}

class Volume extends Area

{

double h,v;

Volume(double r,double h)

{ super(r); this.h=h;

}

void cal\_vol()

{

v=A\*h;

System.out.println("H="+h+"\nVolume="+v);

}

}

public class Main

{

public static void main(String[] args)

{

double r,h;

Scanner sc=new Scanner(System.in); System.out.println("Enter r & h"); r=sc.nextDouble(); h=sc.nextDouble();

Volume v1= new Volume(r, h); v1.cal\_area(); v1.cal\_vol();

}

}

**O/P:**

Enter r & h

2

3

Radius=2.0

Arae=12.56

H=3.0

Volume=37.68

**2) Student**

import java.util.\*; class Student{ int rollno;

String name;

Student(int rollno, String name){ this.rollno=rollno; this.name=name;

}

void show(){

System.out.println("RollNo="+rollno);

System.out.println("Name="+name);

}

}

class X\_Student extends Student{ String cname; double salary;

X\_Student(int rollno, String name, String cname, double salary){ super(rollno,name); this.cname=cname; this.salary=salary;

}

void display(){

System.out.println("Company Name="+cname);

System.out.println("Salary="+salary);

}

}

public class Main

{

public static void main(String[] args) { int rollno; String name,cname; double salary;

Scanner sc=new Scanner(System.in);

System.out.println("Enter rollno, name, company name,salary"); rollno=sc.nextInt(); name=sc.next(); cname=sc.next(); salary=sc.nextDouble();

X\_Student s=new X\_Student(rollno,name,cname,salary); s.show();

s.display();

}

}

**O/P:**

Enter rollno, name, company name,salary

12

vj

OIT

1231

RollNo=12

Name=vj

Company Name=OIT

Salary=1231.0

**3) Define a class “Employee” which has members id, name, date of birth. Define another class “Manager” which has members department name and joining date and extends Employee. Create n objects of the manager class.** import java.util.Scanner;

class Employee {

int id;

String name,dob;

Employee(int id, String name, String dob){ this.id=id;

this.name=name; this.dob=dob;

}

void show(){

System.out.println("Id="+id);

System.out.println("Name="+name);

System.out.println("DOB="+dob);

}

}

class Manager extends Employee{

String dept\_name,jdate;

Manager(int id, String name, String dob, String dept\_name, String jdate){ super(id,name,dob); this.dept\_name=dept\_name; this.jdate=jdate;

}

void display(){

System.out.println("Department Name="+dept\_name);

System.out.println("Joining Date="+jdate);

}

}

public class Main

{

public static void main(String[] args)

{ int size,i,id;

String name,dob,dept\_name,jdate;

Scanner sc=new Scanner(System.in);

System.out.println("Enter number of records"); size=sc.nextInt();

Manager[] m=new Manager[size];

for(i=0;i<size;i++){

System.out.println("Enter employee id,name,DOB,department name,Joining date"); id=sc.nextInt(); name=sc.next(); dob=sc.next(); dept\_name=sc.next(); jdate=sc.next(); m[i]=new Manager(id,name,dob,dept\_name,jdate); m[i].show(); m[i].display();

}

}

}

**O/P:**

Enter number of records

2

Enter employee id,name,DOB,department name,Joining date

101

Nilesh

200 21/07/2000

Developer

02/04/2023

Id=101

Name=Nilesh

DOB=21/07/2000

Department Name=Developer

Joining Date=02/04/2023

Enter employee id,name,DOB,department name,Joining date

1012

Rohit

05/10/2001 2

CEO

20/1/2012 21

Id=1012

Name=Rohit

DOB=05/10/2002

Department Name=CEO Joining Date=20/1/2021

**4) Define an Employee class with suitable attributes having getsalary() method, which returns salary withdrawn by a particular employee. Write a class Manager which extends a class Employee, the calsal() method, which will return the salary of the manager by adding traveling allowance, house rent allowance etc.**

**Employee(eid,ename,bs) Manager(hra,ta,da,gs)** import java.util.Scanner; class Employee{ int eid;

String ename; double basic\_salary;

Employee(int eid, String ename, double basic\_salary){ this.eid=eid; this.ename=ename;

this.basic\_salary=basic\_salary;

}

double getSalary(){ return basic\_salary;

}

void display(){

System.out.println("ID="+eid);

System.out.println("Name="+ename);

System.out.println("Basic Salary="+basic\_salary);

}

}

class Manager extends Employee{

double hra, ta, da, gs;

Manager(int eid, String ename, double basic\_salary){ super(eid, ename, basic\_salary);

}

void cal\_sal(){

hra=getSalary()\*0.50; ta=getSalary()\*0.35; da=getSalary()\*0.50; gs=getSalary()+hra+ta+da;

System.out.println("Gross salary="+gs);

}

}

public class Main

{

public static void main(String[] args)

{ int eid;

String ename; double basic\_salary;

Scanner sc=new Scanner(System.in);

System.out.println("Enter Employee id,name,Salary"); eid=sc.nextInt(); ename=sc.next(); basic\_salary=sc.nextDouble();

Manager m=new Manager(eid, ename, basic\_salary); m.display();

m.cal\_sal();

}

}

**O/P:**

Enter Employee id,name,Salary

101

Suraj

10000

ID=101

Name=Suraj

Basic Salary=10000.0

Gross salary=23500.0