

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