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personih.java   solid.java   abstractclass.java

```java
/*Develop a Java program to implement the hierarchy given below. Include atleast one
appropriate member in each of these classes. Set and display details in each of the class
and create objects of the leaf members in the hierarchy.
person---->employee---->non-teaching
    |             |
    |             |
    v             v
  student      teaching
    |   |
    |   |
    v   v
   ug   pg*/
import java.util.Scanner;
class Person{
    String name;
    int age;
    Scanner ss=new Scanner(System.in);
    void getdata(){
        System.out.println("Enter your name:");
        name=ss.nextLine();
        System.out.println("Enter your age:");
        age=ss.nextInt();
    }
}
class Employee extends Person{
    String id;
    double salary;
    Scanner ss=new Scanner(System.in);
    void getidsalary(){
        System.out.println("Enter your ID:");
        id=ss.next();
        System.out.println("Enter your salary:");
        salary=ss.nextDouble();
    }
}
class Nonteaching extends Employee{
    String field;
    Scanner ss=new Scanner(System.in);
    void getfield(){
        System.out.println("Enter the field you work in:");
        field=ss.nextLine();
    }
    void display(){
        System.out.println("Name:"+name);
        System.out.println("Age:"+age);
```

Line 10, Column 9   Tab Size: 4   Java

personih.java   solid.java   abstractclass.java

```java
43      void display(){
44          System.out.println("Name:"+name);
45          System.out.println("Age:"+age);
46          System.out.println("ID:"+id);
47          System.out.println("Salary:"+salary);
48          System.out.println("Field working in:"+field);
49      }
50  }
51  class Teaching extends Employee{
52      String subject;
53      Scanner ss=new Scanner(System.in);
54      void getsub(){
55          System.out.println("Enter the subject you teach:");
56          subject=ss.nextLine();
57      }
58      void display(){
59          System.out.println("Name:"+name);
60          System.out.println("Age:"+age);
61          System.out.println("ID:"+id);
62          System.out.println("Salary:"+salary);
63          System.out.println("Subject teaching:"+subject);
64      }
65  }
66  class Student extends Person{
67      String usn;
68      int sem;
69      Scanner ss=new Scanner(System.in);
70      void getusnsem(){
71          System.out.println("Enter your USN:");
72          usn=ss.nextLine();
73          System.out.println("Enter your sem:");
74          sem=ss.nextInt();
75      }
76  }
77  class UG extends Student {
78      String dep;
79      Scanner ss=new Scanner(System.in);
80      void getdep(){
81          System.out.println("Enter your department:");
82          dep=ss.nextLine();
83      }
84      void display(){
85          System.out.println("Name:"+name);
86          System.out.println("Age:"+age);
87          System.out.println("USN:"+usn);
```

```java
}
class UG extends Student {
    String dep;
    Scanner ss=new Scanner(System.in);
    void getdep(){
        System.out.println("Enter your department:");
        dep=ss.nextLine();
    }
    void display(){
        System.out.println("Name:"+name);
        System.out.println("Age:"+age);
        System.out.println("USN:"+usn);
        System.out.println("Semester:"+sem);
        System.out.println("Department:"+dep);
    }
}
class PG extends Student {
    String special;
    Scanner ss=new Scanner(System.in);
    void getspecial(){
        System.out.println("Enter your specialisation:");
        special=ss.nextLine();
    }
    void display(){
        System.out.println("Name:"+name);
        System.out.println("Age:"+age);
        System.out.println("USN:"+usn);
        System.out.println("Semester:"+sem);
        System.out.println("Specialization:"+special);
    }
}
class Personmain{
    public static void main(String args[]){
        char choice;
        int emp,stu;
        Scanner ss=new Scanner(System.in);
        System.out.println("Enter e if your're an employee and s if your're a student:");
        choice=ss.next().charAt(0);
        if(choice=='e'){
            System.out.println("Enter 1 if your're a teaching staff and 2 if your're a non teaching staff:");
            emp=ss.nextInt();
            if(emp==1){
                Teaching t=new Teaching();
                t.getdata();
```

```java
        char choice;
        int emp,stu;
        Scanner ss=new Scanner(System.in);
        System.out.println("Enter e if your're an employee and s if your're a student:");
        choice=ss.next().charAt(0);
        if(choice=='e'){
            System.out.println("Enter 1 if your're a teaching staff and 2 if your're a non teaching staff:");
            emp=ss.nextInt();
            if(emp==1){
                Teaching t=new Teaching();
                t.getdata();
                t.getidsalary();
                t.getsub();
                t.display();
            }
            else{
                Nonteaching n=new Nonteaching();
                n.getdata();
                n.getidsalary();
                n.getfield();
                n.display();
            }
        }
        else{
            System.out.println("Enter 1 if your're an UG student and 2 if your're a PG student:");
            stu=ss.nextInt();
            if(stu==1){
                UG u=new UG();
                u.getdata();
                u.getusnsem();
                u.getdep();
                u.display();
            }
            else{
                PG p=new PG();
                p.getdata();
                p.getusnsem();
                p.getspecial();
                p.display();
            }
        }
    }
}
```

```
C:\Program Files\Java\bin\basic>javac personih.java

C:\Program Files\Java\bin\basic>java Personmain
Enter e if your're an employee and s if your're a student:
e
Enter 1 if your're a teaching staff and 2 if your're a non teaching staff:
1
Enter your name:
harshitha
Enter your age:
40
Enter your ID:
bms12
Enter your salary:
50000
Enter the subject you teach:
computer science
Name:harshitha
Age:40
ID:bms12
Salary:50000.0
Subject teaching:computer science

C:\Program Files\Java\bin\basic>java Personmain
Enter e if your're an employee and s if your're a student:
e
Enter 1 if your're a teaching staff and 2 if your're a non teaching staff:
2
Enter your name:
kushi
Enter your age:
30
Enter your ID:
bms34
Enter your salary:
40000
Enter the field you work in:
sports
Name:kushi
Age:30
```

```
Enter e if your're an employee and s if your're a student:
e
Enter 1 if your're a teaching staff and 2 if your're a non teaching staff:
2
Enter your name:
kushi
Enter your age:
30
Enter your ID:
bms34
Enter your salary:
40000
Enter the field you work in:
sports
Name:kushi
Age:30
ID:bms34
Salary:40000.0
Field working in:sports

C:\Program Files\Java\bin\basic>java Personmain
Enter e if your're an employee and s if your're a student:
s
Enter 1 if your're an UG student and 2 if your're a PG student:
1
Enter your name:
harsh
Enter your age:
20
Enter your USN:
1bm19cs059
Enter your sem:
3
Enter your department:
cse
Name:harsh
Age:20
USN:1bm19cs059
Semester:3
Department:cse
```

```
Command Prompt

Enter your USN:
1bm19cs059
Enter your sem:
3
Enter your department:
cse
Name:harsh
Age:20
USN:1bm19cs059
Semester:3
Department:cse

C:\Program Files\Java\bin\basic>java Personmain
Enter e if your're an employee and s if your're a student:
s
Enter 1 if your're an UG student and 2 if your're a PG student:
2
Enter your name:
yatharv
Enter your age:
26
Enter your USN:
1bm15cs058
Enter your sem:
2
Enter your specialisation:
computer science
Name:yatharv
Age:26
USN:1bm15cs058
Semester:2
Specialization:computer science

C:\Program Files\Java\bin\basic>
```