

Name: Kulvir Singh

Reg. No. : 19BCE2074

LAB FAT

Question

4. A java application maintains 5 objects of class Employee in a HashSet. The class has following members:
- (a) Empno: String
 - (b) Department: String
 - (c) Basic: int
 - (d) HRA_Percent: int
 - (e) DA_Percent: int
 - (f) PF_Percent: int

Sort and segregate the objects on the basis of Department field. Print the sorted result department wise in the following format:

Department: -----

EMPNO	BASIC	HRA	DA	PF	NET_SALARY
-------	-------	-----	----	----	------------

Aim:

To create a class the displays the empno,basic,hra,da,pf and computes and displays the net salary in the given format.

Algorithm:

Step 1 :START

Step 2:Create a class named Employee

Step 3: Declare the required data members as per the question with correct data types.

Step 4: Create a parameterized constructor of Employee class which initializes the data members

Step 5: Create the main method for the execution.

Step 6: Create 5 objects of the Employee class and send the data to the constructor through these objects.

Step 7: Store the objects in a hash set.

Step 8: Store the department name of each object in a list and using sort function sort it in ascending order.

Step 9: Loop through the set of objects and compare the department name to that present in the list so as to get the objects sorted according to the department name.

Step 10: Calculate the net salary using the formula $\text{basic} + (\text{hra} + \text{da} + \text{pf}) * \text{basic} / 100$ and display the details in the given format

Step 11: STOP

Code Screenshot:

```
Employee.java X
Employee.java
1  import java.util.*;
2
3  class Employee{
4      String Empno;
5      String Department;
6      int Basic;
7      int HRA_Percent;
8      int DA_Percent;
9      int PF_Percent;
10
11     Employee(String a,String b,int c,int d,int e,int f){
12         Empno=a;
13         Department=b;
14         Basic=c;
15         HRA_Percent=d;
16         DA_Percent=e;
17         PF_Percent=f;
18     }
19
20     public static void main(String[] args) {
21         String s=""; double net=0.0;
22         Employee e1 = new Employee("E1001","IT",200000,3,4,5);
23         Employee e2 = new Employee("E1002","CSE",190000,5,7,5);
24         Employee e3 = new Employee("E1003","EEE",45000,6,4,8);
25         Employee e4 = new Employee("E1004","MECH",11000,8,4,9);
26         Employee e5 = new Employee("E1005","CIVIL",30000,3,6,5);
27
28         List<String> dept = new ArrayList<String>();
29         dept.add(e1.Department);
30         dept.add(e2.Department);
```

```
Employee.java X
Employee.java
31         dept.add(e3.Department);
32         dept.add(e4.Department);
33         dept.add(e5.Department);
34         Collections.sort(dept);
35
36         HashSet<Employee> emp = new HashSet<Employee>();
37         emp.add(e1);
38         emp.add(e2);
39         emp.add(e3);
40         emp.add(e4);
41         emp.add(e5);
42
43         System.out.println("Sorted According to Department Name in Ascending Order:\n");
44
45         for(int i=0;i<dept.size();i++){
46             s=dept.get(i);
47             for(Employee obj: emp){
48                 if(s.equalsIgnoreCase(obj.Department)){
49                     double hra_val = obj.Basic*obj.HRA_Percent/100.0;
50                     double da_val = obj.Basic*obj.DA_Percent/100.0;
51                     double pf_val = obj.Basic*obj.PF_Percent/100.0;
52                     net = obj.Basic+hra_val+da_val-pf_val;
53                     System.out.println("Department: "+obj.Department);
54                     System.out.println("EMPNO\tBASIC\tHRA\tDA\tPF\tNET_SALARY");
55                     System.out.println(obj.Empno+"\t"+obj.Basic+"\t"+obj.HRA_Percent+"\t"+obj.DA_Percent+"\t"+obj.PF_
56                 }
57             }
58         }
59     }
60 }
```

Output :

```
C:\Users\kulvir\Desktop\java fat prac>javac Employee.java

C:\Users\kulvir\Desktop\java fat prac>java Employee
Sorted According to Department Name in Ascending Order:

Department: CIVIL
EMPNO    BASIC    HRA      DA      PF      NET_SALARY
E1005    300000    3        6       5       312000.0

Department: CSE
EMPNO    BASIC    HRA      DA      PF      NET_SALARY
E1002    1900000    5        7       5       2033000.0

Department: EEE
EMPNO    BASIC    HRA      DA      PF      NET_SALARY
E1003    450000    6        4       8       459000.0

Department: IT
EMPNO    BASIC    HRA      DA      PF      NET_SALARY
E1001    200000    3        4       5       204000.0

Department: MECH
EMPNO    BASIC    HRA      DA      PF      NET_SALARY
E1004    110000    8        4       9       113300.0

C:\Users\kulvir\Desktop\java fat prac>
```

Result :

Hence, the program had sorted the 5 objects in ascending order and printed the data in the correct order.