CAP:680 JAVA PROGRAMMING LANGUAGE LABORATORY

ASSIGNMENT-6

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Q.1. As a company there are some protocols like,

a. Only the chairman can decide the final salary of new recruiter but if chairman is not available for some days a minimum standard salary must be given to the employee until the salary is finalized.

b. Company has also a policy to fix the lowest and the highest salary as per the designation.

"Now as a boss I would like to see what is the average salary against each designation and how many people are there who are above the average salary and how many are there below the average salary in each designation."

Ans: - import java.text.DecimalFormat;

import java.util.*;

```
class Employee {

String name;

String designation;

double salary;

public Employee(String name, String designation, double salary) {

    this.name = name;

    this.designation = designation;

    this.salary = salary;

}
```

```java
public double getSalary() {

    return salary;

}


public String getDesignation() {

    return designation;

}

}


public class Company {

public static void main(String[] args) {

Random rand = new Random();

List<Employee> employees = new ArrayList<>();

// generate random salaries for all employees in all departments

employees.add(new Employee("Max", "Manager", rand.nextDouble() * 10000));

employees.add(new Employee("Erica", "Supervisor", rand.nextDouble() *
5000));

employees.add(new Employee("Sara", "Supervisor", rand.nextDouble() *
5000));

employees.add(new Employee("Oscar", "Store Keeper", rand.nextDouble() *
3000));

employees.add(new Employee("Eva", "Store Keeper", rand.nextDouble() *
3000));

employees.add(new Employee("Lily", "Store Keeper", rand.nextDouble() *
3000));

employees.add(new Employee("Josh", "Peon", rand.nextDouble() * 2000));
```

```java
employees.add(new Employee("Tony", "Peon", rand.nextDouble() * 2000));

employees.add(new Employee("Lucas", "Peon", rand.nextDouble() * 2000));

employees.add(new Employee("Sophie", "Intern", rand.nextDouble() * 1000));

    // create a map of departments and employees

    Map<String, List<Employee>> departments = new HashMap<>();

    departments.put("Department 1", employees.subList(0, 4));

    departments.put("Department 2", employees.subList(4, 7));

    departments.put("Department 3", employees.subList(7, 9));

    departments.put("Department 4", employees.subList(9, 10));


    // calculate average salary and number of employees above and below
average for each designation

    Map<String, Double> averageSalaries = new HashMap<>();

    Map<String, Integer> numEmployeesAboveAverage = new HashMap<>();

    Map<String, Integer> numEmployeesBelowAverage = new HashMap<>();

    for (Employee e : employees) {

      String designation = e.getDesignation();

      if (!averageSalaries.containsKey(designation)) {

        averageSalaries.put(designation, 0.0);

        numEmployeesAboveAverage.put(designation, 0);

        numEmployeesBelowAverage.put(designation, 0);

      }

      double salary = e.getSalary();

      double totalSalary = averageSalaries.get(designation) + salary;

      int numEmployees = numEmployeesAboveAverage.get(designation) +
numEmployeesBelowAverage.get(designation) + 1;
```

```java
        double averageSalary = totalSalary / numEmployees;

        averageSalaries.put(designation, averageSalary);

        if (salary > averageSalary) {

            numEmployeesAboveAverage.put(designation,
numEmployeesAboveAverage.get(designation) + 1);

        } else {

            numEmployeesBelowAverage.put(designation,
numEmployeesBelowAverage.get(designation) + 1);

        }

    }


    // print results

    DecimalFormat df = new DecimalFormat("#.##");

    for (String designation : averageSalaries.keySet()) {

        System.out.println("Average salary for " + designation + ": " +
df.format(averageSalaries.get(designation)));

        System.out.println();

        System.out.println("Number of employees above average salary for " +
designation + ": " + numEmployeesAboveAverage.get(designation));

    System.out.println("Number of employees below average salary for " +
designation + ": " + numEmployeesBelowAverage.get(designation));

    System.out.println();

}

}

}
```

```
Average salary for Supervisor: 3492.04

Number of employees above average salary for Supervisor: 0
Number of employees below average salary for Supervisor: 2

Average salary for Peon: 826.46

Number of employees above average salary for Peon: 1
Number of employees below average salary for Peon: 2

Average salary for Store Keeper: 1286.12

Number of employees above average salary for Store Keeper: 2
Number of employees below average salary for Store Keeper: 1

Average salary for Intern: 90.76

Number of employees above average salary for Intern: 0
Number of employees below average salary for Intern: 1

Average salary for Manager: 4639.84

Number of employees above average salary for Manager: 0
Number of employees below average salary for Manager: 1

PS D:\VS CODE\JAVA PROGRAM\ASSIGNMENT>
```