CSC111 Lab Week13	Arrays

Exercise 1:

Having company class (see UML class diagram), we would like to manage employees of a company.

Attributes:

Company
-id[]:int   -name[]:String   -salary[]:float   -current:int
+Company(int size)   +addEmployee(int i,String n,float s):boolean   +search(int id):int   +findMaxSalary():float   +findMinSalary():float   +calculateTotalSalaries():float   +calculateAverageSalaries():float   +printEmployeeData(int i):void

- `id[]`: an array that contains IDs of employees
- `name[]`: an array that contains names of employees
- `salary[]`: an array that contains salaries of employees
- `current`: the first empty index (represent the number of inserted employees).

The methods:

- `+Company(int size)`: a constructor that initialize all three arrays with the specified size and set current index to zero.
- `+addEmployee(int i,String n,float s)`: add an employee data to the current index & increment current index by one (*hint: you have to check if array size is not exceeded*)
- `+search(int i)`: return the index of employee with the specified id, if ID does not exists, return -1
- `+findMaxSalary()`: return the max salary among all employees
- `+findMinSalary()`: return the max salary among all employees
- `+calculateTotalSalaries()`: calculate the total sum of all salaries
- `+calculateAverageSalaries()`: calculate the average of all salaries.
- `+printEmployeeData(int i)`: prints employee data that has the specified id (*hint: use **search()** method to find the index*)

a) Implement the class **Company.**
b) Test your program using the main class (**TestCompany**). Your program should create an instance of class Company with maximum employees size = 10. In addition, it should display a menu driven interface that lists the following options:

```
1)Add a new employee info
2)Quit
Your choice?
```

In the first option, you have to prompt the user to enter employee data from keyboard. In case of the employee can't be added (i.e. array has reached max size), print a statement explaining this case.

When the use chooses Quit, you should display **max salary**, **min salary**, **total salaries**, and **average salaries**. Also, choose an existed employee id and display his/her information, and another employee that does not exist.

Sample run:

```
Welcome to Company System
1)Add a new employee info
2)Quit
Your choice?
1
Enter employee ID, name, and salary,respectively
123
saad
10000
Employee data were added successfully
1)Add a new employee info
2)Quit
Your choice?
1
Enter employee ID, name, and salary,respectively
111
khalid
20000
Employee data were added successfully
1)Add a new employee info
2)Quit
Your choice?
1
Enter employee ID, name, and salary,respectively
666
Ali
5000
Employee data were added successfully
1)Add a new employee info
2)Quit
Your choice?
2
max salary: 20000.0
min salary: 5000.0
total salaries: 35000.0
average salaries: 11666.667

--------------------------
Printing Employee Data
--------------------------
id: 666
name: Ali
salary: 5000.0
--------------------------

Employee ID is not found
```