CSCI 201 Computer Science 1

Due Date 12/5/2022

Final Project:

Human Resource Management

Write C++ program for HRM department with the following main menu.

Main Menu
1. Add New Employee
2. Delete an Employee
3. Update Employee Information
4. Search for an Employee
5. Quit

Please enter your choice 1..5 :

You should use class definition Employee and class definition HRM. Note that in class Employee, setting the values for all fields is not possible. You have to calculate the value for the field “annualSalary” after initializing the fields “workingHours” , “costPerHour” and “deduction” by user. For those which the set function works, the validity of the entered data should be checked. For example, negative values for fields “annualSalary”, ”workingHours”,”costPerHour” and “deduction” are not accepted. As another example the field “workingHours” should be between 1 and 60.

Class Employee should include following private fields:
- employeeID (Integer)
- firstName (String)
- lastName (String)
- workingHours (Float)
- costPerHour (Float)
- deduction (Float)
- annualSalary (Double)

Class Employee should have member functions for setting and getting the private fields. Member functions should have the following naming style:
- set_fieldName()
- get_fieldName()

Note: FieldName is FirstName or LastName ……etc.

The field “employeeID” of class Employee should be unique and auto-increment with the initial value of 1001 for the first employee. It means that user should not enter the value for “employeeID”.

Class HRM should include following public fields:

- Array of employees with the type Employee
- The **actual number of employees** which is stored in Array of Employees

Class HRM should include following public member functions:

- addEmployee(…)
- deleteEmployee (…)
- updateEmployee (…)
- searchEmployee (…)

Your program should read the first 10 employees from text file named "employee.txt". Please note that you need to check the actual amount of employees and in case of reaching to the number 100 for the total number of employees you should give proper message. For the actual amount of employees you should not enter the value yourself and your program should calculate automatically the amount while entering or deleting the information of an employee.
Based on the description of the program, you need to define some arguments for functions deleteEmployee(…), updateEmployee(…),searchEmployee(…)

1. AddEmployee()
This function allows users to enter the related information of employees in class HRM. During the initialization step your program should get the working hours per week (e.g. 35) for the employee and the payment for his/her work per hour, and the amount of deduction. Then, you should calculate the annual salary. You should consider 52 working weeks for one year in your calculations.
Following is the sample output of this function.

Please enter the first name of an employee? Alex
Please enter the last name of an employee? Peterson
How many hours a week is his/her work? 35
How much per hour is his/her wage? 20
How much total deduction? 115
The employee with the following information has been added to the system:

Employee ID	First Name	Last Name	Salary per year ($)
1001	Alex	Peterson	30,420.00

Do you want to add another employee (y/n)? n

2. deleteEmployee(…)
This function allows user to delete the employee information. Since the only unique value in the list of employees is "Employee ID", therefore delete function should be based on this field. Note that in order to enter the correct Employee ID of employee you need to find his/her Employee ID using the function searchEmployee(…).

Please enter the employee ID? 2425374
Sorry, there is not any employee with this ID.

Do you want to repeat delete by entering new employee ID (y/n)? y
Please enter the employee ID? 1079
Do you really want to delete employee Michael Jackson (y/n)? y
The employee Michael Jackson has been deleted.

Do you want to repeat delete by entering new employee ID (y/n)? n

3. updateEmployee(…)
This function allows user to make changes on information of all fields the except the field "Employee ID" is not allowed to be changed. For example, if user wants to change the number of working hours for specific employee, he should use this function. Since the only unique value in the list of employees is "Employee ID", therefore update function should be based on this field. Note that during the update process, if user changes fields "working hours" or "deduction", you need to re-calculate yearly salary based on new values and update related fields.

Please enter the employee ID? 2425374
Sorry, there is no employee with this ID?
Do you want to repeat update by entering new employee ID (y/n)? y
Please enter employee ID? 1001
Please enter the related number of field which you would like to update?
(1. First name, 2. Family name, 3. Working hours per week, 4. Payment for one hour, 5. deduction)? 4
Please enter new payment for one hour in $ for Mr. Peterson? 25
Do you want to update any other field (y/n)? n
The information for Mr. Peterson has been updated.
Do you want to repeat update by entering new employee ID (y/n)? n

4. searchEmployee(…)
In this function, user can find specific employee using employee ID field.
Please enter the employee ID? 1003

Employee ID	First Name	Family Name	Annual salary
1003	Martin	Klein	81,900.00

Do you want to do new search (y/n)? y
Please enter the employee ID? 1001

Employee ID	First Name	Family Name	Annual salary
1001	Alex	Peterson	45,500.00

Do you want to do new search (y/n)? n