

## CS211 - Project

### Problem: Employee Management System

Consider the employee management system in a company. The employee information such as emp\_no, name, salary, department, and DOB are required to maintain the employee's data in a text file. In such management systems, the user wants to be able to insert a new employee, delete an existing employee, search for an employee using emp\_no, sort the list of employees based on their emp\_no, etc. The user also wants to save any changes to the employee list in the data (text) file.

#### INPUTS

**Initial employee information:** Data about each employee will be read from separate lines of a text file. The entries for all the employees will be read in sequence until all entries are read.

**Additional entries:** Each entry is typed by the user at the keyboard when requested.

#### OUTPUTS

**Employees' information:** All information about an employee is displayed on separate output lines.

**Updated employee information:** Data about each employee will be written in separate lines in the text file. The entries will be written in sequence until all entries are written.

### Part 1. Array Implementation

- Create a class called "employee" which can be used to store the emp\_no, name, salary, department, and DOB of ONE employee. (2 Marks)
- Create a class called "EmployeeArray" which stores a list of "employee" objects. Use an array of sizes (MAXSIZE = 1000) to hold the list. (3 Marks)

#### Notes:

Add appropriate data fields to the class "EmployeeArray",  
Add the operations (methods) to the class "EmployeeArray". For example, insert, delete, linear search, binary search, insertion sort, heap sort, ....

- Create an appropriate GUI that uses the class "EmployeeArray" to solve the employee management system problem defined above. This means the GUI allows the user to print all employee lists, insert a new employee, delete an employee, search for an employee using its emp\_no, sort the employee list, etc. (3 Marks)

### Part 2. Linked List Implementation

- Create a class called "EmployeeLinkedList" which stores a list of "employee" objects. Use a linked list (SLL or DLL) to hold the list. (3 Marks)

**Notes:**

Use the class "Employee" which you have created in Part1.

Add appropriate data fields to the class "EmployeeLinkedList",

Add all of the required operations to the class "EmployeeLinkedList". For example, insert, linear search, binary search, insertion sort, heap sort, ....

- Create an appropriate GUI that uses the class "EmployeeLinkedList" to solve the employee management system problem defined above. You can also use the same interface that has been used in Part 1, but this time with the class "EmployeeLinkedList". (3 Marks)

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## Instructions

**Software Platform:** NetBeans

**Submission:** This project is to be performed by a group of students (2-3 students each), and any identical submissions will be regarded as plagiarism attempts and all will be given zero marks.

It is required to submit for each part of the project (before the due date) the following:

- A copy of the project on a CD or you can upload the softcopy of the project on the blackboard.
- A Hard copy document that includes both the used GUI (as a picture) and the code for the Java classes in the project.

Best Wishes

Dr. Mohammed Kayed