Department of
Computer Science & Engineering
University of Liberal Arts Bangladesh

Open-ended experiment-2

Course Title: Data Structure Lab **Course Code: CSE 1302**	**Section: 04**
Course Teacher: Wahida Ferdose Urmi	**Semester: Spring 2025**
Total Marks: 20	**Submission Deadline: 08.04.2025**

General Instructions:

- This is an open-ended experiment. Students are expected to develop their own experiment;
- Show each step of your experimental procedure, data, and calculations;
- Discuss your results with relevant theories;
- Originality of the work is a must;
- Please refer to the assessment rubrics while preparing the report;
- Symbols, notations and abbreviations carry their usual meanings.

CO	Description	Domain/ level of learning taxonomy
CO1	Demonstrate various basic data structures and their operations.	Psychomotor/ L2, Affective / L2
CO2	Apply appropriate data structure for solving real-world problem	Psychomotor/ L2, Affective / L2
CO3	Develop applications using various data structures	Psychomotor/ L2, Affective / L2

Problem:

Employee Payroll Management System (Using Linked List)

You are developing an Employee Payroll Management System using a singly linked list to store and manage employee salary details. The system should allow the following operations:

1. Add a new employee's salary details (insert at the end).
2. Remove an employee by their Employee ID (deletion).
3. Search for an employee by their Employee ID (traversing and comparing).
4. Display all employees sorted by Employee ID.

Each employee should have the following attributes:

- Employee ID (integer)
- Name (string)
- Salary (integer)

Open-ended features:

- **Use any programming language.**
- **Use any modern tools to solve the problem.**
- **Use necessary data structures to solve the problem.**

(* Do not copy from others ***)**

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Task No.	**Corresponding COs**	**Marks**
1. Provide a detailed explanation of linked lists and their use in payroll management.	CO1	3
2. Implement the Employee Payroll Management System using a singly linked list, allowing users to add a new employee's salary details.	CO1, CO2	5
3. Develop a function to remove an employee by ID using linked list deletion.	CO1, CO3	4
4. Implement a search function to find an employee by their ID.	CO2	3
5. Prepare and submit a well-structured lab report, documenting the use of linked list and its operation in the implementation of the system.		3
6. Submit your program file. **Save the file in the following format: Library_Management_YourID.c (Replace "YourID" with your actual student ID: Example: Library_Management_2420000001.c)**		2