Assignment 2 – Linked-Lists
100 points

Note 1: If you re-upload the files, you must re-upload **ALL** files as the system keeps the most recent uploaded submission only. No zip files!

Note 2: Never hard-code test data in the test program, unless explicitly stated in the assignment. Always allow the user to enter the test data using menu option.

The goal of this assignment is to reinforce the concept of linked lists in Java.

Problem Name: Linked List Assignment: Employee Management System

Problem Description:

You are tasked with implementing an Employee Management System using linked lists in Java. The system should be able to perform basic operations such as adding, deleting, and displaying employee records. Each employee record should store information such as employee ID, name, position, and salary.

Requirements:

1. Employee Class:

- Create a class named `Employee` with the following attributes:

- `int employeeID`

- `String name`

- `String position`

- `double salary`

2. LinkedList Class:

- Implement a linked list to store Employee objects.

- Create a class named `EmployeeLinkedList` with the following methods:

- `void addEmployee(Employee emp)` - Add a new employee to the list.

- `void deleteEmployee(int employeeID)` - Delete an employee by their ID.

- `void displayEmployees()` - Display details of all employees in the list.

3. Menu-Driven Program:

- Implement a menu-driven program in the main class that allows users to interact with the Employee Management System.

- The menu should include options for:

- Adding a new employee

- Deleting an employee

- Displaying all employees

- Exiting the program

4. Data Validation:

- Validate user input to ensure that the employee ID is unique, and that salary is a positive number.

- Handle edge cases gracefully (e.g., deleting an employee not in the list).

Example:

```java public class
Employee {
    // Employee class implementation
}

public class EmployeeLinkedList {
    // LinkedList class implementation
}

public class EmployeeManagementSystem {
    public static void main(String[] args) {
        // Menu-driven program implementation
    }
}
```

Submission Guidelines:

- Submit the Java source code files.

- Include comments to explain your code.

- Provide a brief report on the design choices you made, challenges faced, and any improvements you would make if you had more time.

Submission:

Please submit to the assignment submission folder in D2L by the due date posted in D2L. **No zip file submission. No late submissions are accepted**. Once again, please include **author header** block in each file - **no headers, no points.**

```
// Name:          <your name>
// Class:         CS 5040/Section#
// Term:
// Instructor:    Umama Tasnim
// Assignment:    2
```