CL2001 – Data Structures Lab

Lab Task # 07

Note:

- Copied task will be awarded **zero** marks.
- Use comments wherever applicable.
- Submit a pdf file containing all your C++ code with all possible screenshots of every task output on Google Classroom. The name of file should be your roll no followed by your name (roll-no-name.pdf) i.e., (23P-1234-Ali.pdf).
- Variables and functions names should be meaningful.

Problem: 1 | Queue for Cafeteria Ordering System

You are tasked with developing an application for a cafeteria ordering using a queue data structure implemented with a linked list in C++. The cafeteria serves a variety of food items and beverages, and the system must efficiently manage incoming orders while ensuring that they are processed in the order they are received.

Requirements:

1. **Menu Display**: The application should display a menu of available food items and beverages, along with their corresponding prices.
2. **Order Placement**: Customers should be able to place orders by selecting items from the menu. Each order should be added to a queue for processing.
3. **Order Processing**: Orders should be processed in the order they are received. As orders are processed, they should be removed from the queue, and the next order should be displayed.
4. **Queue Management**: The application should provide options to add new orders, remove processed orders, and display the current orders in the queue.

Problem: 2 | Duplicate Queue Data using Linked List

Create a function that will duplicate the nodes of the Queue depending on data in the queue.

For example, if the data in the queue is 3 it is to be duplicated 3 more times.

Input Queue: 3->4->5

Output Queue: 3->3->3->4->4->4->4->5->5->5->5->5