CL2001 – Data Structure Lab

Lab Task # 05

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., (24P-1234-Ali.pdf).
- Variables and functions names should be meaningful.

Problem: 1

Create a doubly linked list. After creating it, write a function to count how many combinations of adding the values of two nodes result in an even number.

Example:

Given the linked list:

$2 \rightarrow 3 \rightarrow 4 \rightarrow 5 \rightarrow 4 \rightarrow 1 \rightarrow 4 \rightarrow 2 \rightarrow 4$

Output: 5

Problem: 2

Create two doubly circular linked lists. After creating them, write a function to create a new doubly circular linked list, where the third list will be the union of list 1 and list 2.

Example:

Suppose **List 1** contains:

1, 2, 3

List 2 contains:

3, 4, 5

Then the Union List (List 3) will contain:

1, 2, 3, 4

Problem: 3

Create a doubly circular linked list that takes characters as input. After creating it, check whether the given word in the linked list is a palindrome or not.

Example:

M, A, D, A, M

Output: The given word is palindrome.

C, A, T

Output: The given word is not palindrome.