CL2001 – Data Structure Lab
Assignment # 01
Linked List

Note: Carefully read the following instructions.

- Plagiarism will not be **tolerated!!**
- Variable name should be meaning ful.
- Use comments wherever applicable.
- There must be a block of comments at start of every question's code by students; the block should contain brief description about functionality of code.
- Note that these tasks could be graded through a viva in lab.
- Submit a pdf file containing all of your C++ code with all possible screenshots of every task outputs. Submit all .cpp files as well on Google Classroom.

Problem: 1 | Inserting middle

Write a program that creates an even number of links in a linked list and then finds the middle of the link list and insert a data item in the list.

Example:

Given: 1->2->3->4->NULL

Inserting 7 at the middle of linked list

Updated: 1->2->**7**->3->4->NULL

Problem: 2 | Linked List the Palindrome

Write a function to check whether the given Singly Linked List is Palindrome or not.

Problem: 3 | Remove Duplicates

Write a removeDuplicates() function which takes a list sorted in increasing order and deletes any duplicate nodes from the list. Ideally, the list should only be traversed once.

Problem: 4 | Swap Adjacent Nodes

Write a function to swap the adjacent nodes of the linked list by swapping

the links not there values

For Example:

Input Linked List: 1->2->3->4->5->NULL

Output Linked List: 2->1->4->3->5->NULL