

National University of Sciences & Technology  
School of Electrical Engineering and Computer Science  
Department of Computing

CS 250: Data Structures & Algorithms (3+1): BSCS5 Fall 2016

Assignment 1: Linked Lists	
<b>CLO1: Understand the fundamentals of data structures and algorithms</b>	
Maximum Marks: 20	Instructor: Shamy Bin Mansoor
Announcement Date: 7th Oct 2016	Due Date : 14th Oct 2016 11:00 pm on LMS

**Instructions:**

- Please submit only your Cpp files on LMS. Only two files are required. One for task 1 and other for Task 2.
- There will be no deadline extension (so please submit code on time)
- No email or late submissions will be accepted

**Tasks:**

You are given a basic code of a Singly Linked List.

1. Modify the code to change the linked list to a doubly linked list. The following operations need to be implemented: (10 points)
  - a. Insertion of a new node
  - b. Insertion of a new node at a particular location
  - c. Deletion of a node at a particular location
  - d. Traversing the linked list both ways visually (While traversing using keyboard keys move in both directions and change the color of the circle that you are currently standing on during traversal)
2. Modify the code to change the linked list to a circular linked list. The following operations need to be implemented: (10 points)
  - a. Insertion of a new node
  - b. Insertion of a new node at a particular location
  - c. Deletion of a node at a particular location
  - d. Deletion of complete linked list