National University of Computer and Emerging Sciences

Laboratory Exercise

Data Structures
Lab

(CL 2001)

Department of Computer Science

DS Lab Mini Project

Objectives

- Understanding Doubly linked list
- Understanding Circular linked list
- Understanding Singly linked list

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Note: Carefully read the following instructions.

1. You have to do all tasks on Microsoft Visual Studio.
2. Screenshot the solution to each problem and paste it in a word file with the naming convention F20xxxx_Section_lab number.

Project

Write a program to create **a Note Pad using 4D linkedlist.** The program should contain following attributes. Each node includes four links left, right, top and bottom.

- Add text **(Insert text at any particular position)**
  - User will input x and y position. Then input a string. You may use nodes of characters or nodes for string for insertion.
- Delete text
  - User will input a string. If the input string matches, delete all nodes which contains the input string.
- Search Words
  - User will input a string. If the input string matches, a message will be displayed that string found with all positions if string exists multiple times.
- Copy text
  - User will give the starting position x and y of string and end position of string and then save the string into a string variable or character array with all special characters.
- Past text
  - After copy string, user will give the initial x and y position and then paste the copied string at that position. If text already exists at the position where user want to paste the copied text, then display a message “Text already found” with a confirmation message that “Do you still want to paste the text”. If yes, then paste the text from that particular position.
- Find a word and replace it
  - Input a word. If word is found, then replace it. Choice will be given for first word replacement or replace the word on whole file.

- Undo text
    - After performing any operation, it will be saved into a stack using a specific key.
- Count the total words

You are done. Submit ☺