NORTH WESTERN UNIVERSITY

Report

Course Code: CSE-2104
Course Title: Data Structures Laboratory

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1.Introduction

The Project is a Basic "CRUD" project where we tried to use basic data structure method Array and Linked list. The project showcases the way to create an array list of data with the options for inserting, searching, deleting and updating new or existing data.
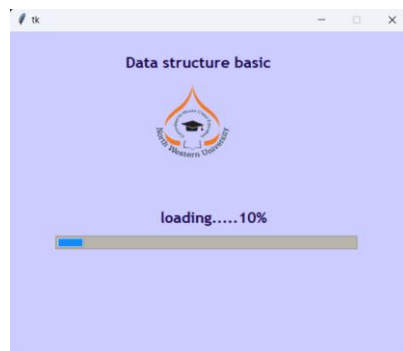
A linked list is a linear data structure, in which the elements are not stored at contiguous memory locations. The elements in a linked list are linked using pointers. In this project we tried to visually represent a linked list and its "CRUD" functions using python tkinter Gui.
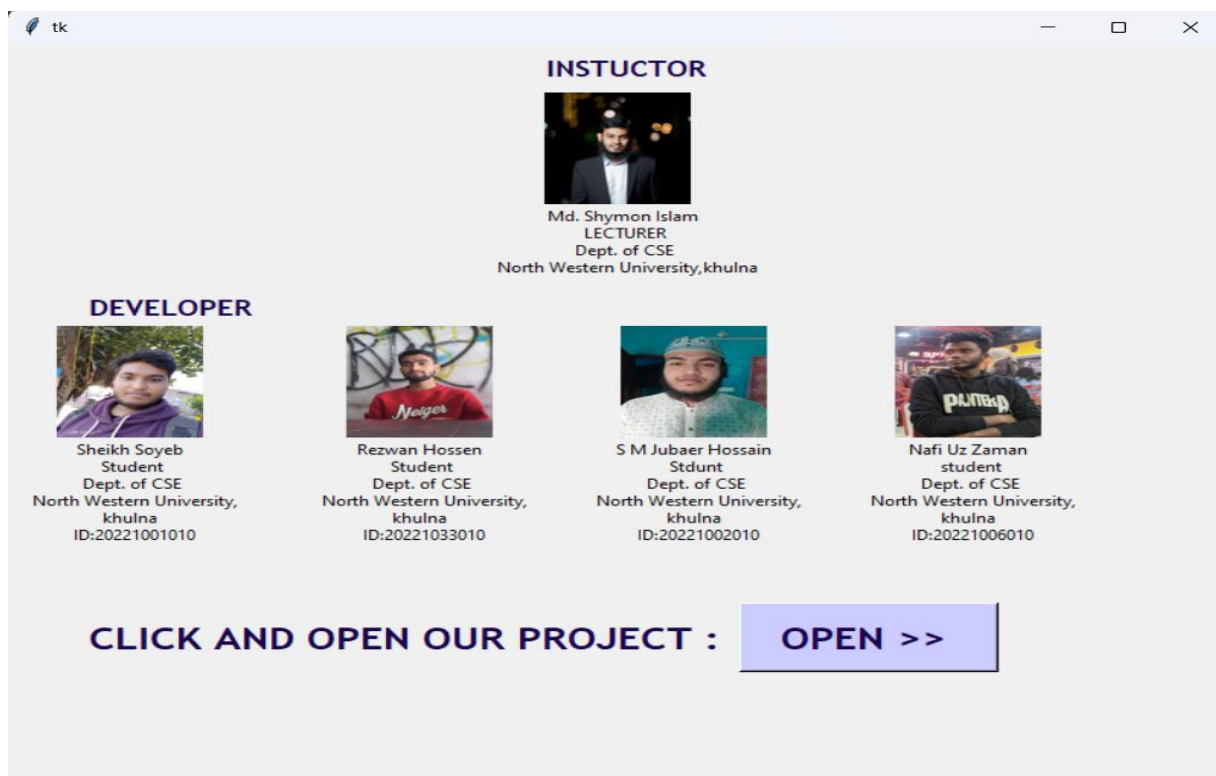
2.Objectives

The purpose of this lab project was to design and implement a basic array and linked list program with "CRUD" functionalities. The word "CRUD" stands for Create, Read, Update and Delete. With the help of Python Tkinter, a graphical interface based program was created to represent array and linked list with "CRUD" functionalities.

3.Description:

Loading Page: At the starting of the program, there is a loading page indicating the successful run of the program.

Introduction Page: A Simple Introduction page for the team members and the project supervisor Md. Shymon Islam.
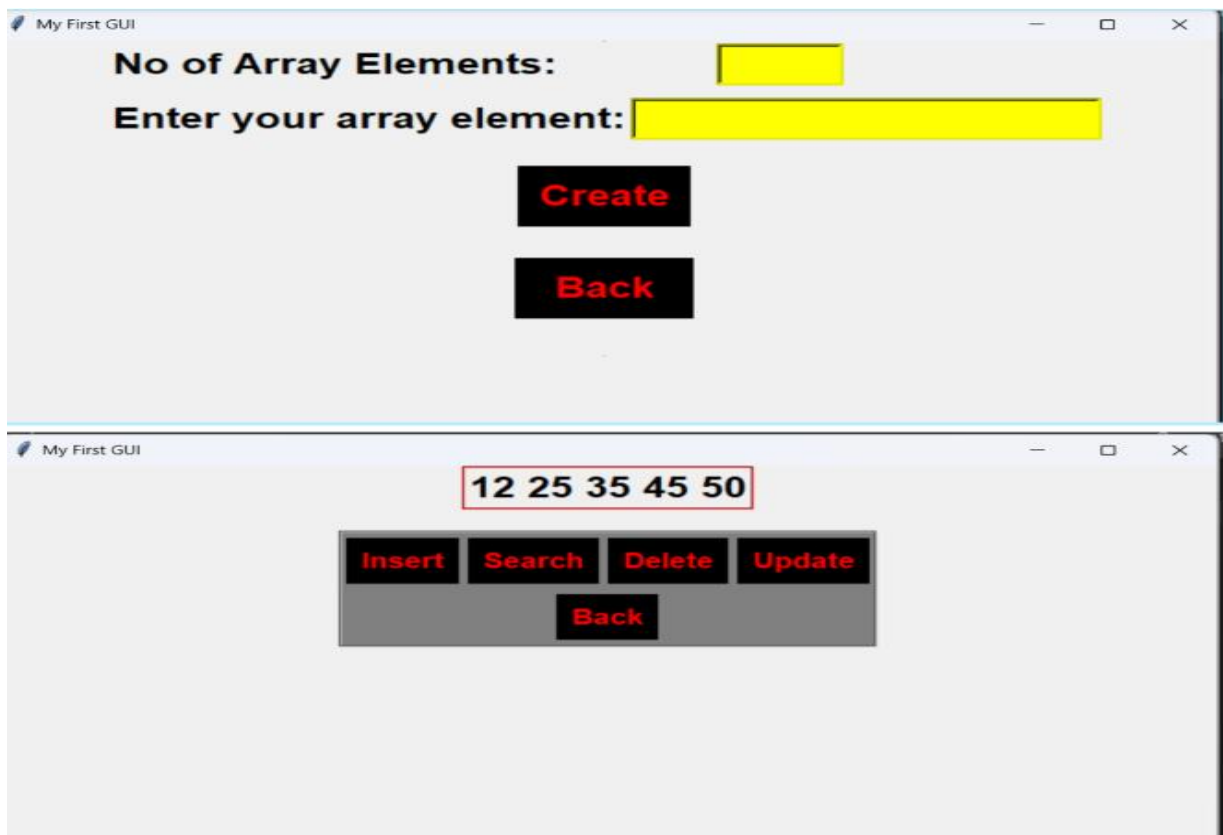
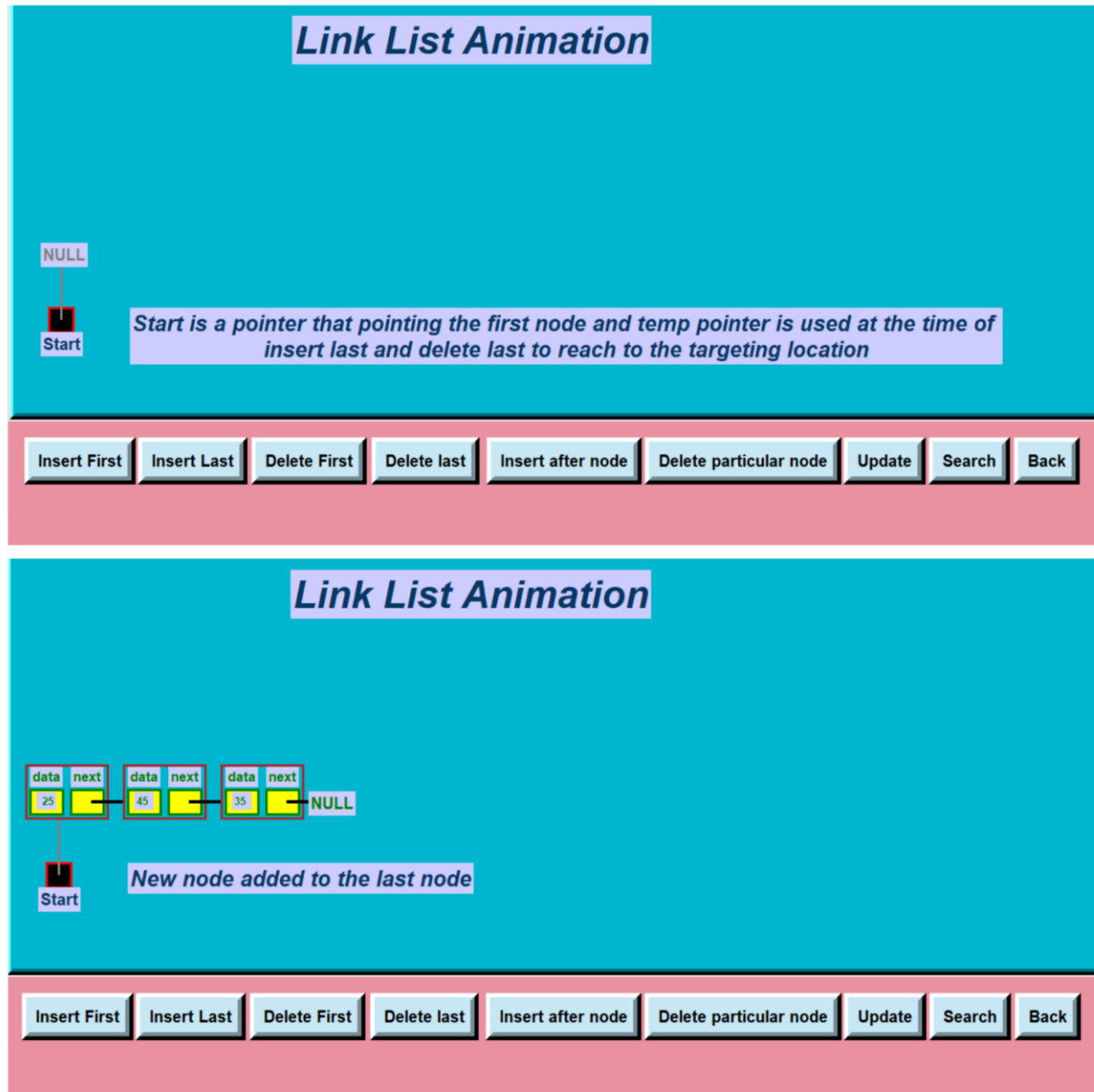**Main Menu:** By Pressing open Button users are able to go to the main menu.

The main menu has options for Array, Linked list and EXIT. Users can choose their desired option.

Array Function: By Pressing Array Button users are able to go to the Array sub function of the program. User can create an array by defining the length of the array and then input the data. After that the users have the options to Insert, search, delete or update new or existing data. Also they can close the Array sub-function and go back to the main menu.

__Linked List Function:__ By pressing Linked list button on the main menu, users can go to the Linked List sub-function of the program. This sub-function has its own animation and gui to let the user see and understand the concept of a linked list function and graphically visualize how does a linked list function creates and stores data with the additional functions to add, search, delete, update new or existing data. The users can use the sub-function to create to a linked list and use its other buttons to modify the created linked list according to their wish.

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4. ## **Dependencies:**

Pycharm IDE: Pycharm IDE lets you quickly and easily develop Python based program. To build this project we used Pycharm IDE where we wrote the code and ran it with the help of python installed on the computer.

Tkinter GUI: For the Graphical Interface, we used pythons own GUI library named Tkinter which lets us build GUI based python program without the need of any other extra software.

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