# Objectives: Lab 04

The purpose of the first lab of BTP500 is to familiarize yourself with the Visual Studio User Interface and write a simple C++ program with functions. By the end of this lab, you should be able to:

* Successfully ran 2 algorithms using linked list for stacks and queues.

# 

Explore the linked list options for stacks and queues in C++.

1. Write a C++ program for **stacks using linked list** for string data to add fruit names like (“Apples”,”Bananas”, “Grapes”,”Berries”). Paste the screenshot of each of the 5 functions of stacks implemented using linked list here below.
   * + push() - add all 5 fruit names (“Apples”,”Bananas”, “Grapes”,”Berries”,”Oranges”)
     + pop() –remove 2 fruits with the last in first out of one fruit example
     + isEmpty() –show if the stack is empty
     + isFull() show if the stack is full
     + top() -display the top pointer data

A screenshot of a computer

Description automatically generated

1. Write a C++ program for **queues using linked list** for string data to add fruit names like (“Apples”,”Bananas”, “Grapes”,”Berries”). Paste the screenshot of each of the 5 functions of stacks implemented using linked list here below.
   * + enqueue() -- add all 5 fruit names (“Apples”,”Bananas”, “Grapes”,”Berries”,”Oranges”)
     + dequeue() --–remove 2 fruits with the first in first out of one fruit example
     + isEmpty() –show if the queue is empty
     + isFull() –show if the queue is full
     + front() -display the front pointer data

A screenshot of a computer

Description automatically generated

# LAB 04 – SUBMISSION

# **3 files.**

# **1.   Word document BTP500-LAB4-NAME.DOCX filled with screenshots for each functions asked for stacks and queues**

# **2.   BTP500-LAB4-STUDENTNAME-stack-linkedlist.cpp**

# **3.   BTP500-LAB4-STUDENTNAME-queues-linkedlist.cpp**

Do not submit a .zip or RAR file.