

Assignment # 03

CSE225L: Data Structures and Algorithm Lab

Please read each of the following instructions carefully before proceeding to the questions:

- After performing each task take a **whole window** screenshot of the output of each task.
- Put only the **relevant** project files (main.cpp/screenshot/.h/.cpp) in a folder.
- Rename the folder as **ID_Name_AssignmentNumber** (eg. 1620000042_Bob Alice_A2)
- Upload the folder in your own google drive and create a link (sharing option should not be Restricted)
- Copy and Paste the link then press the Turn In button.
- Once you submit the assignment, do not delete the folder from google drive or Unsubmit.
- Failure to meet any of these requirements will incur a **100% penalty**.
- Late Submission will incur a 25% penalty per day.
- If you plagiarize in any way, your submission will be rejected and you will get straight 0.
- This assignment contains 10 points in total.

Tasks:

Reimplement the queue class that we use in the lab using the stack data structure. You can use only two stack objects instead of variables(`int front; int rear; ItemType* items; int maxQue;`) to implement the queue class. You must use the following file to create stack objects.

- a. `stacktype.h`
- b. `stacktype.cpp`

Your class should contain the following methods with proper implementation:

```
QueueType();  
QueueType(int max);  
~QueueType();  
void MakeEmpty();  
bool IsEmpty();  
bool IsFull();  
void Enqueue(ItemType);  
void Dequeue(ItemType&);
```

Generate the driver file (main.cpp) where you perform the following tasks.

1. Enqueue each digit of your NSU ID
2. Print if the queue is empty or not
3. Print if the queue is full or not
4. Print the values in the queue
5. Dequeue three items