

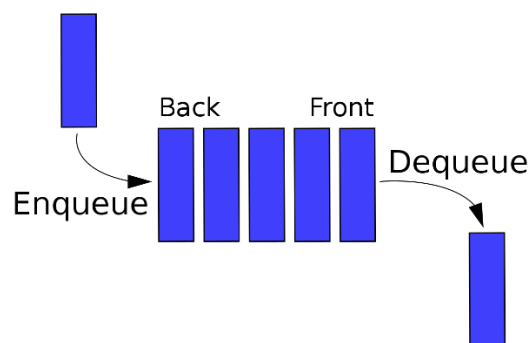
**Aim:** C++: Practice with common data structures.

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Please open the **Week4.pdf** from BlackBoard, you may get help from the class for this lab.

In Week 4, you have learned different data structures like linked lists, stacks and queues. Also, you have seen implementations of them, either parts of it or as a whole.

Your task for Lab 3 is to implement Queue data structure in C++. However, instead of implementing by arrays, you will be implementing it by linked lists. Your Queue will only hold an integer as its data. Below, you can see how a Queue operates.



You may check the linked list implementation in Week4.pdf to get inspired for your Queue. Also, the queue implementation by array in Week4.pdf may help to understand how you will write the necessary functions.

The functions to implement:

- **enqueue(int)** : Adds an item in the queue.
- **dequeue()** : Removes an item from the queue.
- **top()** : Returns the top element of the queue.
- **isEmpty()** : Returns true if the queue is empty, else false.
- **size()** : Returns number of elements in the structure. This function is not shown in the slides. It is your extra task to discover its implementation :)