

Task 3:

Circular Queue

A Circular Queue is a regular queue that extend itself until it connects to the first element. In other words, circular queue is an extended version of regular queue where its last element will connect to its first element, forming a circle-like structure

Deque or double ended queue is a form of queue in which removal and insertion of element can either be performed from the front(left side) or rear(right side) thus it doesnot follow FIFO (First In First Out).

There are two type of Deque namely, Input Restricted Deque and Output Restricted Deque

As it name suggest, Input Restricted Deque is a deque in which an input can only happen from one end (front or rear) while deletions can happen on both end (front and rear).

Output Restricted Deque is a deque in which an output can only happen from one end (front or rear) while deletions can happen on both end (front and rear).

Priority Queue

A queueing system that prioritize a certain aspect of elements which serves the element with highest priority first before element with lower priority. Essentially, priority queue is a sorted queue since its element that was served, were sorted and served according to its priority level.

There are two types of Priority Queue namely Ascending Order Priority Queue and Descending Order Priority Queue.

Ascending Order Priority Queue gives lower element, higher priority while Descending Order Priority Queue gives higher element, higher priority

Task 4:

Depth First Search is a searching algorithm that goes deep into its children node before going broad/wider (to its neighbour).

Depth First Search has its own disadvantage which is that if the other node (its neighbour) have a faster way to reach the end, Depth First Search might goes to the other node that have relatively slower way to reach the end.

Depth First Search is performed Recursively

Breadth First Search is a searching algorithm that goes broad/wider (to its neighbour) before going deep to its children node.

It is a searching algorithm that counters Depth First Search major disadvantages. It checks its neighbour one by one before going deep.

Depth First Search is performed Iteratively and it mainly implements a queue