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COIMBATORE-641 035, TAMIL NADU

COURSE NAME : 23CAT602 – Data Structures and Algorithms

I YEAR / I SEMESTER

UNIT – I

Topic: Queue Representation

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Queue Representation

A Queue can be represented in two ways :

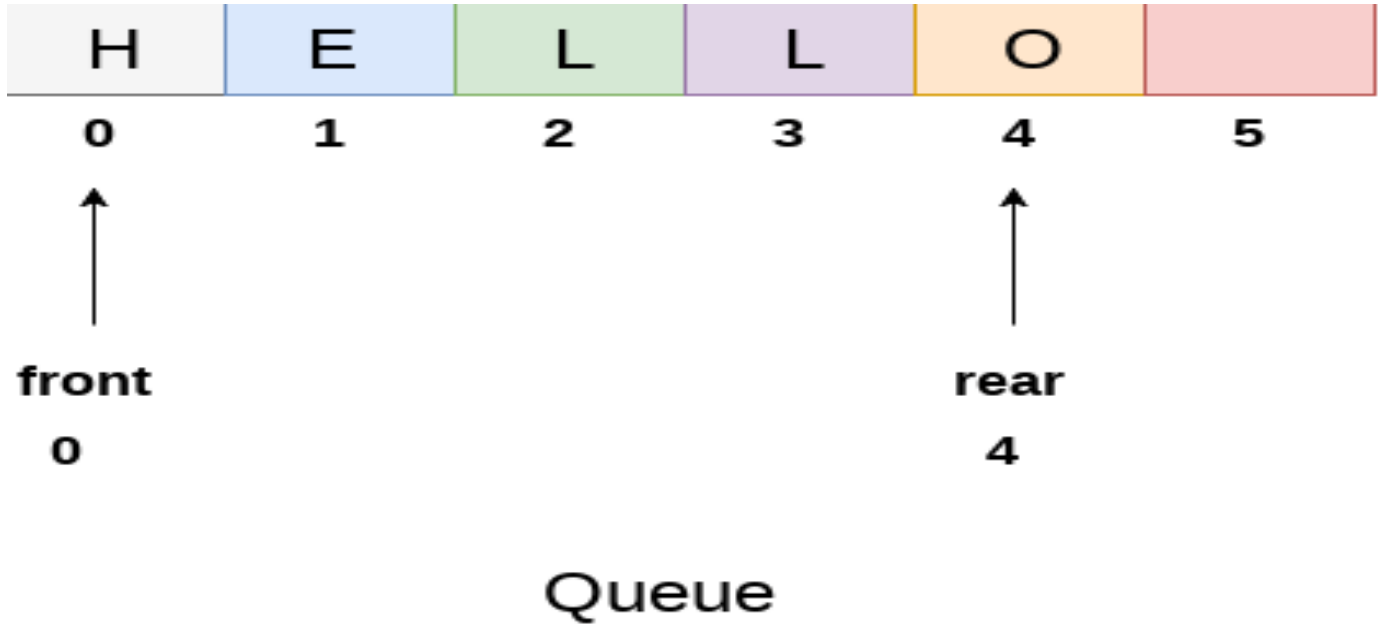
1. Array
2. Linked List

Array Representation

We can easily represent queue by using linear arrays. There are two variables i.e. front and rear, that are implemented in the case of every queue. Front and rear variables point to the position from where insertions and deletions are performed in a queue. Initially, the value of front and queue is -1 which represents an empty queue.

Adding an element in Queue

Array representation of a queue containing 5 elements along with the respective values of front and rear, is shown in the following figure.

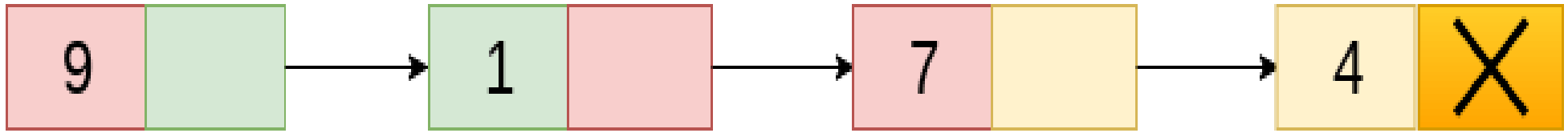


Queue

Linked List Representation

- The array implementation can not be used for the large scale applications where the queues are implemented. One of the alternative of array implementation is linked list implementation of queue.
- In a linked queue, each node of the queue consists of two parts i.e. data part and the link part. Each element of the queue points to its immediate next element in the memory.
- In the linked queue, there are two pointers maintained in the memory i.e. front pointer and rear pointer. The front pointer contains the address of the starting element of the queue while the rear pointer contains the address of the last element of the queue.

Linked List Representation



Linked Queue


Thank
You