**Queue Data Structure**

A **Queue Data Structure**is a fundamental concept in computer science used for storing and managing data in a specific order.

* It follows the principle of "**First in, First out**" **(FIFO)**, where the first element added to the queue is the first one to be removed.
* It is used as a buffer in computer systems where we have speed mismatch between two devices that communicate with each other. For example, CPU and keyboard and two devices in a network
* Queue is also used in Operating System algorithms like CPU Scheduling and Memory Management, and many standard algorithms like Breadth First Search of Graph, Level Order Traversal of a Tree.

**FIFO Principle in Queue:**

FIFO Principle states that the first element added to the Queue will be the first one to be removed or processed. So, Queue is like a line of people waiting to purchase tickets, where the first person in line is the first person served. (i.e. First Come First Serve).

A screenshot of a computer

AI-generated content may be incorrect.

**Basic Terminologies of Queue**

* **Front:**Position of the entry in a queue ready to be served, that is, the first entry that will be removed from the queue, is called the front of the queue. It is also referred as the head of the queue.
* **Rear:** Position of the last entry in the queue, that is, the one most recently added, is called the rear of the queue. It is also referred as the tail of the queue.
* **Size:** Size refers to the current number of elements in the queue.
* **Capacity:** Capacity refers to the maximum number of elements the queue can hold.