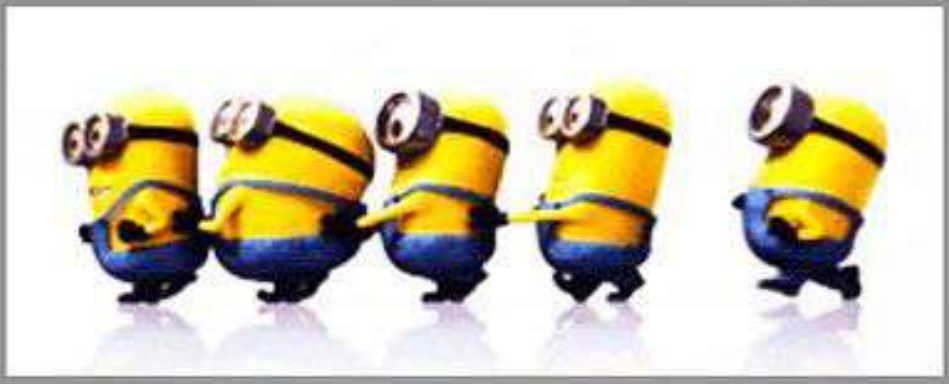
QUEUE

A queue is another special kind of list, where items are inserted at one end called the rear and deleted at the other end called the front.

Another name for a queue is a "FIFO" or "First-In-First-Out list".



Basic Operations

- enqueue() - add (store) an item to the queue.
- dequeue() - remove (access) an item from the queue.

In queue, we always dequeue (or access) data, pointed by front pointer and enqueue (or storing) by rear pointer.

Few more functions are required to make the above-mentioned queue operation efficient. These are -

peek() - Gets the element at the front of the queue without removing it.

isfull() - Checks if the queue is full.

isempty() - Checks if the queue is empty.

APPLICATIONS

- Queues are widely used as waiting lists for a single shared resource like printer, disk, CPU.
- Queues are used in asynchronous transfer of data (where data is not being transferred at the same rate between two processes) for eg. pipes, file IO, sockets.
- Queue are used to maintain the play list in media players in order to add and remove the songs from the play-list.
- Queues are used in operating systems for handling interrupts.