Priority Queue

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A Priority Queue – a different kind of queue.
Similar to a regular queue:

- insert to rear
- Delete from front

But

Elements in priority queue are **ordered** by **some key**

Element with the lowest/highest key is always at the **front from where they are Deleted.**

Then Elements 'Inserted' in 'Proper' position

Idea behind the Priority Queue:

- Is a queue .
- **But** the items are **ordered** by a **key**.
- **Implies your 'position' in the queue may be changed** by the arrival of a new item.

Applications of Priority Queues

- Scheduling queue**s** for a processor
- Print Queues
- Transmit Queues, etc.….

This means Required item for process will be in the **front** of queue which obtained via a **dequeue**() operation.

Note: a priority queue is no longer FIFO.

Because Deletion is still from front of queue, but insertions Depends on priority.

Priority Queues

Operations performed on priority queues

1) Find an element,
2) Insert a new element
3) Delete an element, etc.

Two kinds of (Min, Max) priority queues exist:

- In a Min priority queue, find/delete operation finds/deletes the element with minimum priority
- In a Max priority queue, find/delete operation finds/deletes the element with maximum priority
- Two or more elements can have the same priority