**Queue**

FIFO: First In First Out

**Linear Queue:**

Queue Operations:

***size = 5***

**isEmpty( ):** front ==-1 and rear == -1.

**isFull( ):** rear == size-1

**enqueue(x):** insert an element x at rear position.

**dequeue( ):** remove an element from front position.

**getFrontElement( ):** returns the element at front position.

**print( ):** print the queue from front position to rear position.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | F |  |  |  |
|  |  |  | 33 | 44 | 550 |  |
| -1 | 0 | 1 | 2 | 3 | 4 | 5 |
|  |  |  |  |  | R |  |

**Circular Queue**

Front Rear

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 0 | 1 | 2 |  |
|  | 90 | 100 | 30 |  |
| 7 | 80 | -1 |  | 3 |
|  | 70 |  |  |  |
|  | 6 | 5 | 4 |  |

***size = 8***

**isEmpty( ):** front ==-1 and rear == -1.

**isFull( ):** (rear+1)%size == front

**enqueue(x):** insert an element x at rear position.

**dequeue( ):** remove an element from front position.

**getFrontElement( ):** returns the element at front position.

**print( ):** print the queue from front position to rear position. Or, print the queue from front to size-1 and then from 0 to rear.