New Queue...

rear:-1, front:0, nItems:0

0's indicate "empty slot"

{0,0,0,0,0}

====== I N S E R T (rear increases) ======

Inserting 10 into the queue.

rear:0, front:0, nItems:1

{10,0,0,0,0}

Inserting 20 into the queue.

rear:1, front:0, nItems:2

{10,20,0,0,0}

Inserting 30 into the queue.

rear:2, front:0, nItems:3

{10,20,30,0,0}

Inserting 40 into the queue.

rear:3, front:0, nItems:4

{10,20,30,40,0}

Inserting 50 into the queue.

rear:4, front:0, nItems:5

{10,20,30,40,50}

====== R E M O V E (front increases) ======

Removing 10 from the queue.

rear:4, front:1, nItems:4

{0,20,30,40,50}

Removing 20 from the queue.

rear:4, front:2, nItems:3

{0,0,30,40,50}

Removing 30 from the queue.

rear:4, front:3, nItems:2

{0,0,0,40,50}

**Wrap-Around Issue for INSERT**

When:

1)rear = 4 (at last index of array)

2)and the queue is not full (nItems < maxSize)

3)if you want to insert

4)you have to move rear to index 0

====== I N S E R T ======

Inserting 60 into the queue.

rear:0, front:3, nItems:3

{60,0,0,40,50}

Inserting 70 into the queue.

rear:1, front:3, nItems:4

{60,70,0,40,50}

Inserting 80 into the queue.

rear:2, front:3, nItems:5

{60,70,80,40,50}

**Wrap-Around Issue for REMOVE**

When:

1)front = 4 (at last index of array)

2)and the queue is not empty (nItems > 0)

3)if you want to remove

4)you have to move front to index 0

====== R E M O V E ======

Removing 40 from the queue.

rear:2, front:4, nItems:4

{60,70,80,0,50}

Removing 50 from the queue.

rear:2, front:0, nItems:3

{60,70,80,0,0}

Removing 60 from the queue.

rear:2, front:1, nItems:2

{0,70,80,0,0}

Removing 70 from the queue.

rear:2, front:2, nItems:1

{0,0,80,0,0}

Removing 80 from the queue.

rear:2, front:3, nItems:0

{0,0,0,0,0}