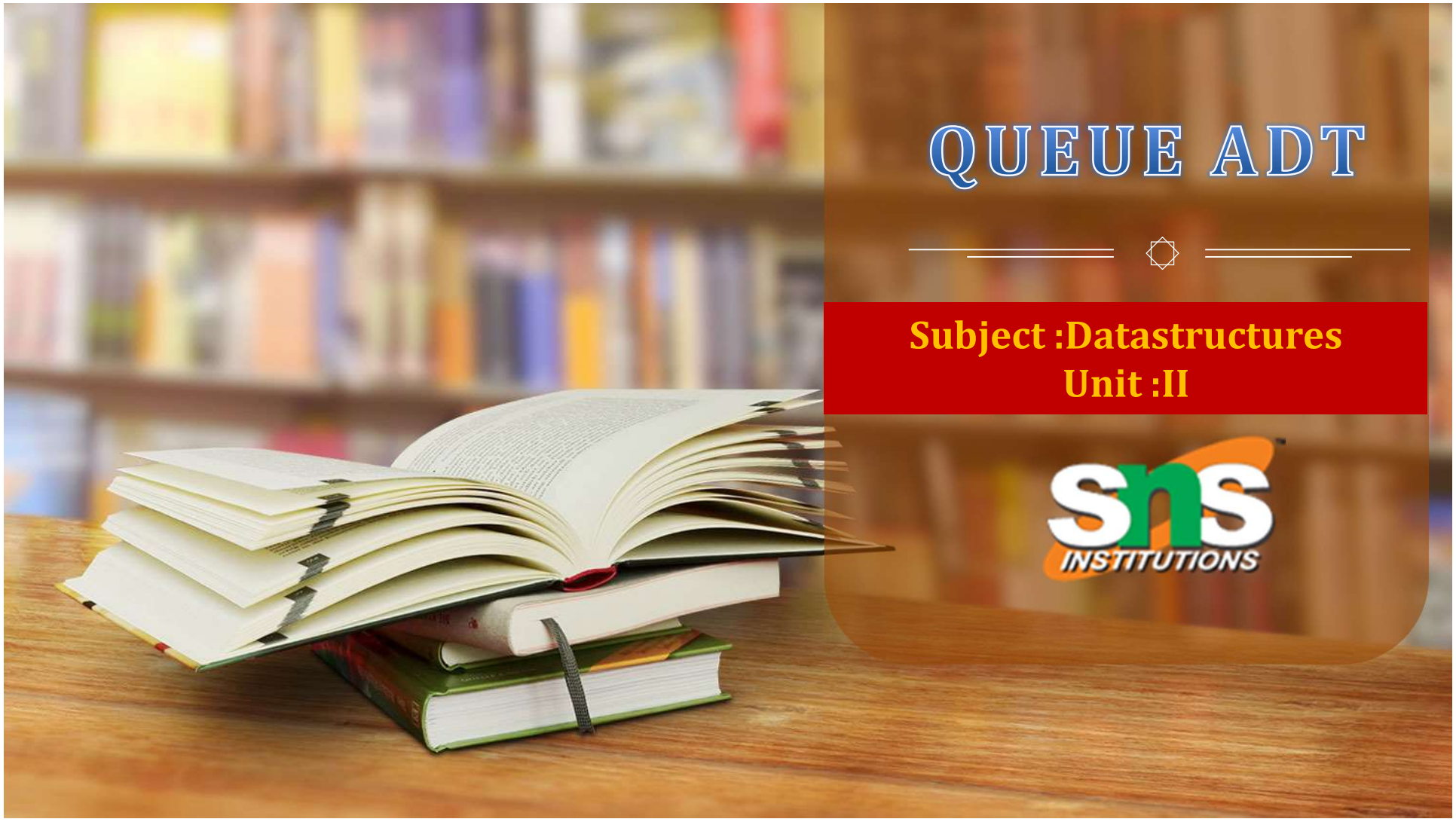
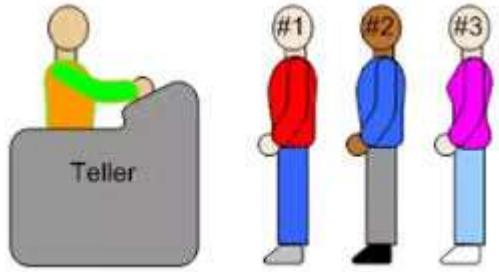

QUEUE ADT
Subject :Datastructures
Unit :II
SNS
INSTITUTIONS

WHY QUEUE?

•Multiple consumers are in need of a single resource makes use of queue as a data structure.

Example: Disk Scheduling, CPU Scheduling.

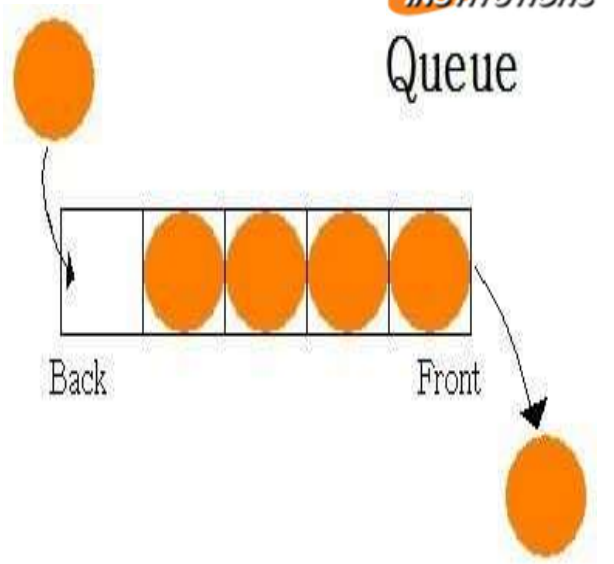
•It overcomes the problems of insertion and deletion of elements.



Picture source: cs.uregina.ca & softprayog.in

QUEUE

- Ordered collection of homogenous elements
- Non primitive linear data structure
- New Element added from rear end
- Existing Element deleted from Front end

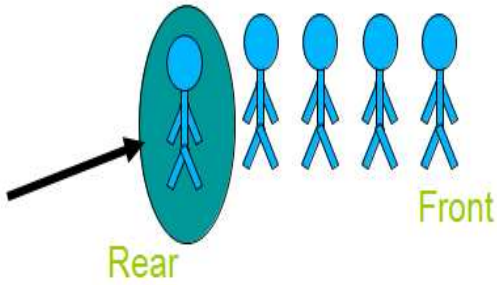


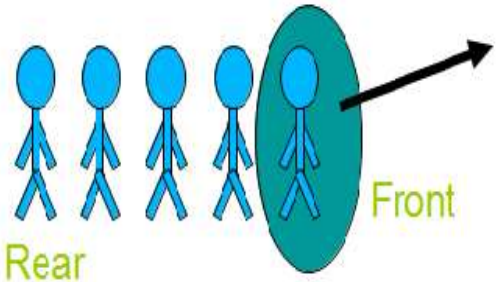
Working Mechanism: First In First Out (FIFO)

OPERATIONS

Enqueue
- Inserting Element
- REAR End

Dequeue
- Deleting Element
- FRONT End





Picture source: slideshare.net

ROUTINE-ENQUEUE

```
If (rear = maxsize-1 )
        print ("queue overflow");
        return;
else
        rear = rear + 1;
       Queue [rear] = item;
```

ROUTINE-DEQUEUE

```
If  (front =rear)

print “queue empty” ;

 return;

else

Front = front + 1;

 item = queue [front];

return item;
```

APPLICATIONS

- ✓ Round robin scheduling
- ✓ Job scheduling (FIFO Scheduling)
- ✓ Key board buffer

Picture source: spring-2012_sciences/round-robin

ASSESMENT 1

1.Queue follows _____

a) FIFO (First In First Out) principle

b) LIFO (Last In First Out) principle

c) Ordered array

d) Linear tree

2. If the elements “A”, “B”, “C” and “D” are placed in a queue and are deleted one at a time, in what order will they be removed?

a) ABCD

b) DCBA

c) DCAB

d) ABDC

REFERENCES

- www.educba.com/queue-in-c/
- www.programiz.com/dsa/queue
- https://cathyatseneca.gitbooks.io/data-structures-and-algorithms/content/queue/queue_applications.html