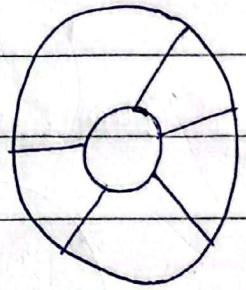
Day: Date:

DSA-LAB

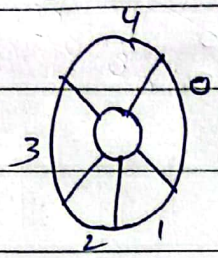
Name: M. Usman Azhar

Registration NO: SP22-BCS-092.

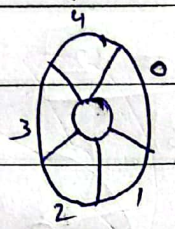
Circular Queue



```
int Queue[5];
N = 5;
```




```
int Front = -1 , rear = -1;
```



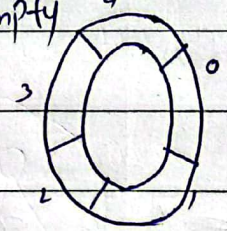
Front = -1
rear = -1

Void enqueue (int x) X = 41

```
if( rear +1)% N == Front)
```

(-1 +1) % 5 == -1
0 % 5 == -1
0 == -1 False

Queue is empty

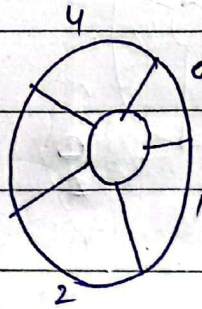



```
if ( Front ==-1 && rear == -1){
```

-1 == -1 && -1 == -1

true

so,



F=0
R=0

F=0
R=0

Day: Date:

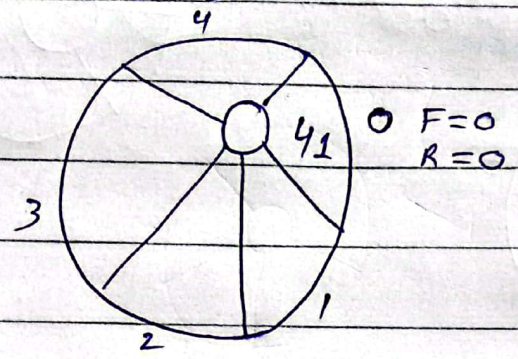
else {

rear = (rear + 1) % N

rear = (-1 + 1) % 5

rear = 0

que[0] = 41;

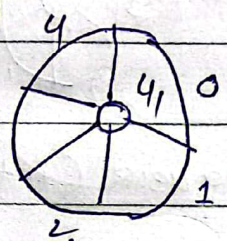


void enque(x), X = 42

if((0+1)%5 == 0)

False

Quee is empty



if(0 == -1 && 0 == -1)

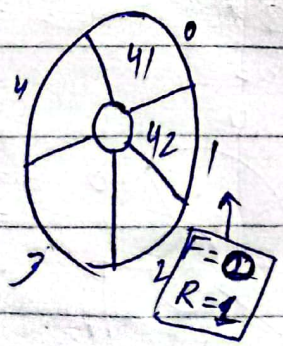
False

rear = (rear + 1) 5

rear = (0+1)%5

rear = 1

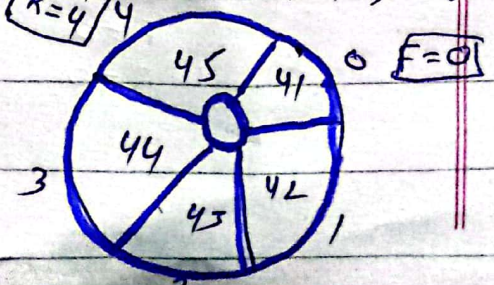
que[1) = X que[1) = 42



Final Enqueue

F=0 R=4

X = 43, 44, 45



Day: **Void Deque( )** Date:

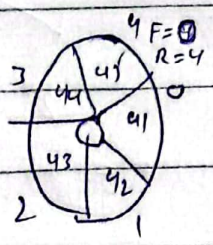
Front = 0

Rear = 4

if (0 == -1 && 4 == -1)

False

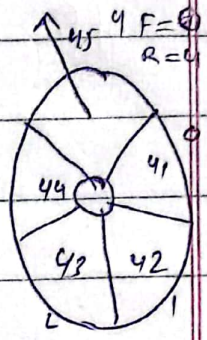
Queu is Full



if (0 == 4)

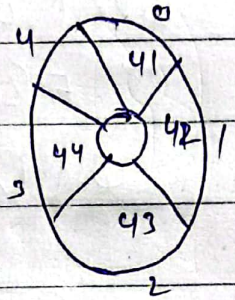
Deque elem++ << qu [45]; 3

Fore = rear = -1



else

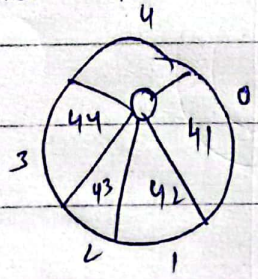
cout qua[front] = 45



if (1 == -1 && 4 == -1)

False

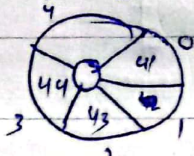
Queu is Full



if (1 == 4)

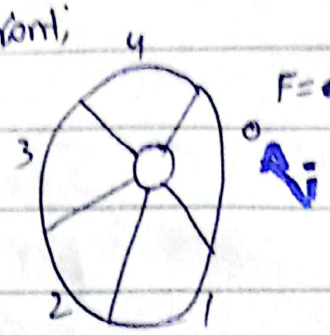
False

cout << qu [Front] = 44



Day: Void display( ){ Date:

int i=front;

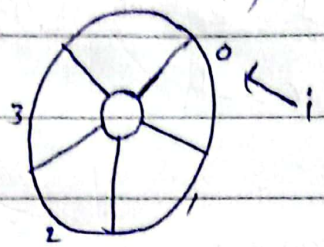


F=-1, R=-1

if(-1 == -1 && -1 == -1)

True

Queue is empty



while(i != rear)

(0 != -1)

False

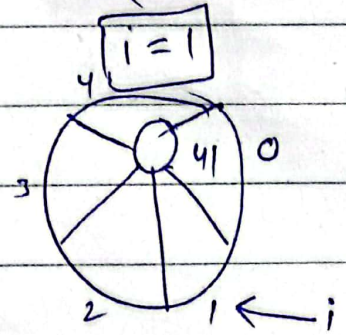
Qu[i]

[0]

i=(i+1)%N

i=(0+1)%5

i=1



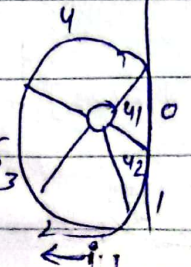
while(1 != -1)

False;

Qu[i] = 1

i=(1+1)%5

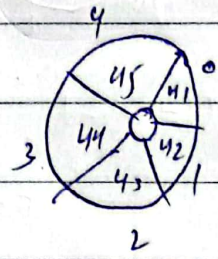
i = 2



while(4 != -1)

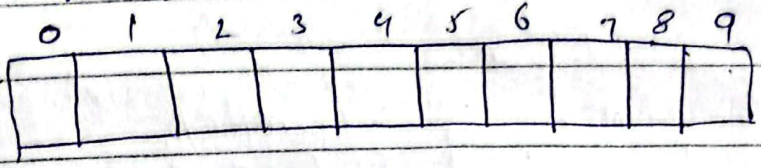
False

Qu[i] =



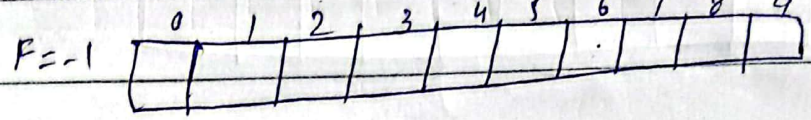
Day: **Double Ended Queue** Date:

int deque [100] ;



n=10;

Front = -1 , rear = -1



R=-1

void insertFront(int val).

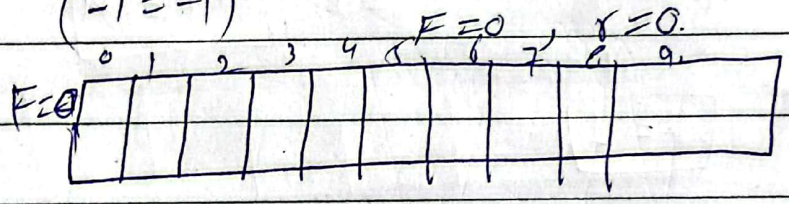
if(-1 == 0 && -1 = 10-1 || -1 == -1+1)

False,

Deque is not overflow. (empty)

if(front = -1)

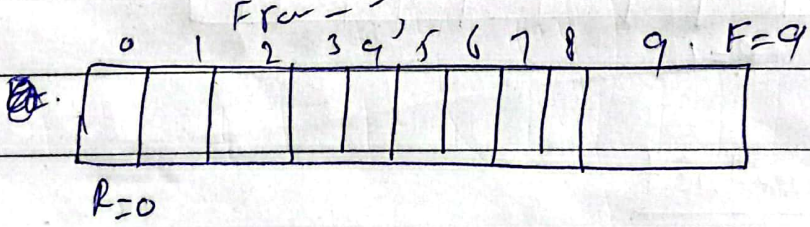
(-1 = -1)



R=0

(-1 == 0) frar = 10-1 = 9.

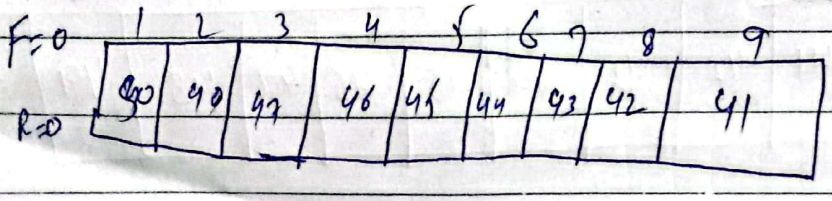
Frar = 9



R=0

deque [Frar] = val

dq [9] = 41

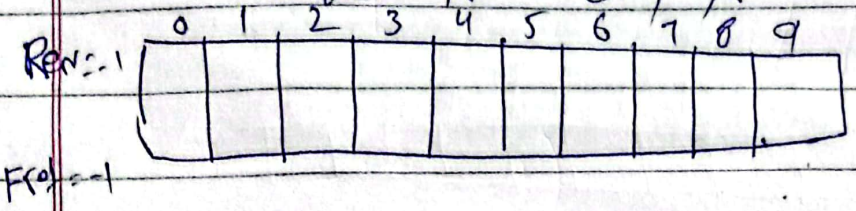


Day: Void insertRear(int val) Date:

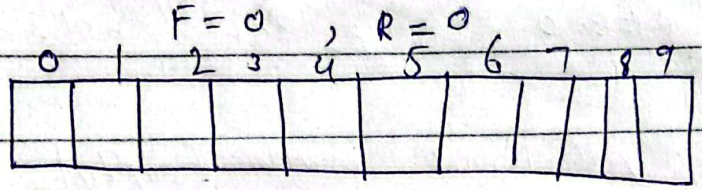
if(-1 == 0 && -1 == (10-1) || -1 == -1+1)

False,

Deque is empty.



if(-1 == -1) True



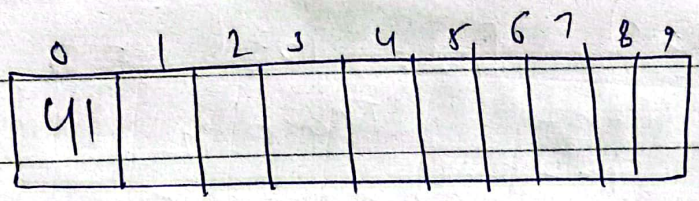
F=0
R=0

(-1 = 10-1) ⇒ -1 = 9

F&S

R = 1

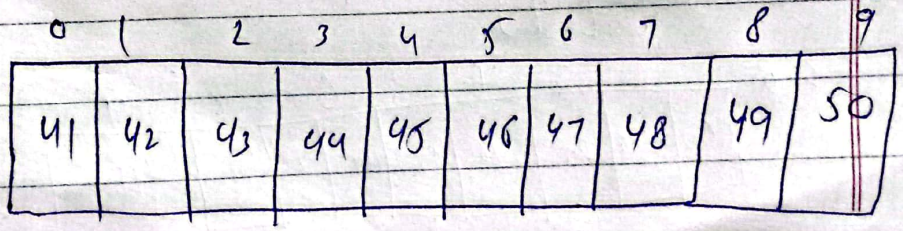
deq[41] = 41



F=0 R=1

same as that

After 10 values instrings,ns

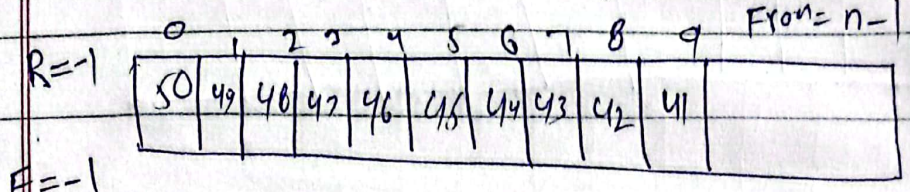


Day: **Void del Front ( )** Date:

if (-1 == -1)

True

Que is full



Deq [Front]. = 41

if(-1 == -1)

true

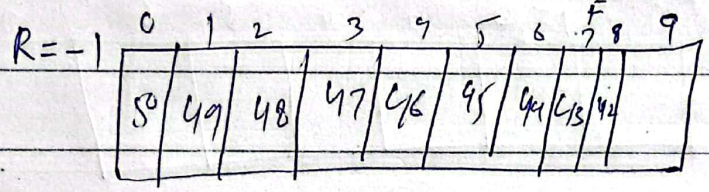
Fr = -1 , Rd = -1

if(-1 = n-1)

(n-1 = n-1)

Fr = 0

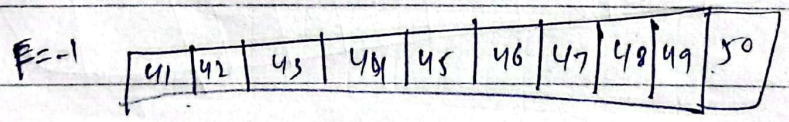
Fr = ++ Front = 1



void del rear( )

if -1 == -1)

full; true



R=-1

if (-1 == -1)

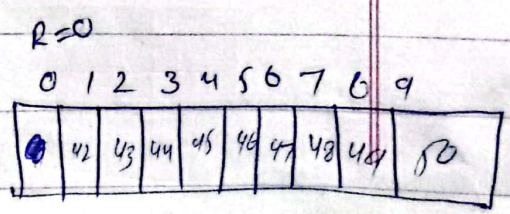
F = -1, R = -1

if (-1 == 0)

False

rear--

R = 0



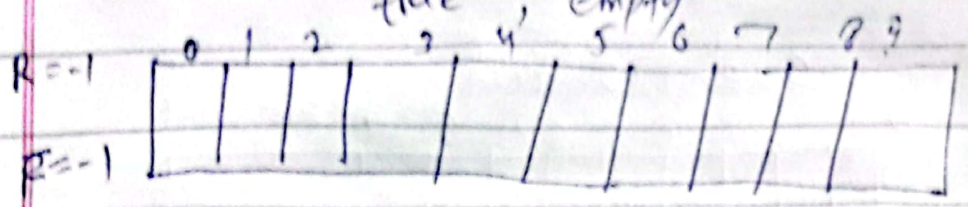
Day

Date

void display( ){

if(R == -1)

true, empty



if(-1 == -1)

true;

for(i = Front , i <= rear ; i++)

i = -1 , -1 <= -1 ,

true;

deq [i]

deq [-1];

}