

Student s = new Student("Raj", 27);

name = Raj
age = 27

Handwritten notes on arrays:

arr
arr[0] = 10
arr[1] = 20
arr[2] = 30
arr[3] = 40
arr[4] = 50

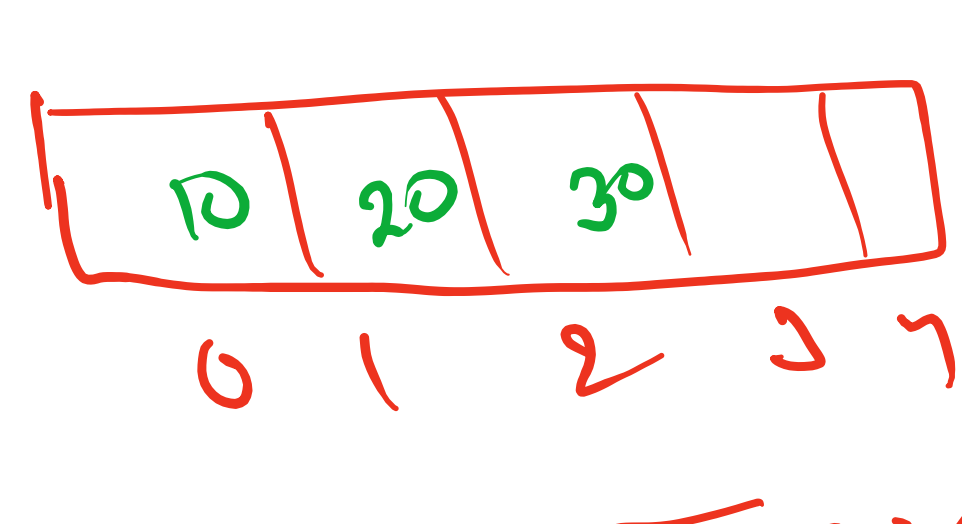
log

arr[0] = 10
arr[1] = 20
arr[2] = 30
arr[3] = 40
arr[4] = 50



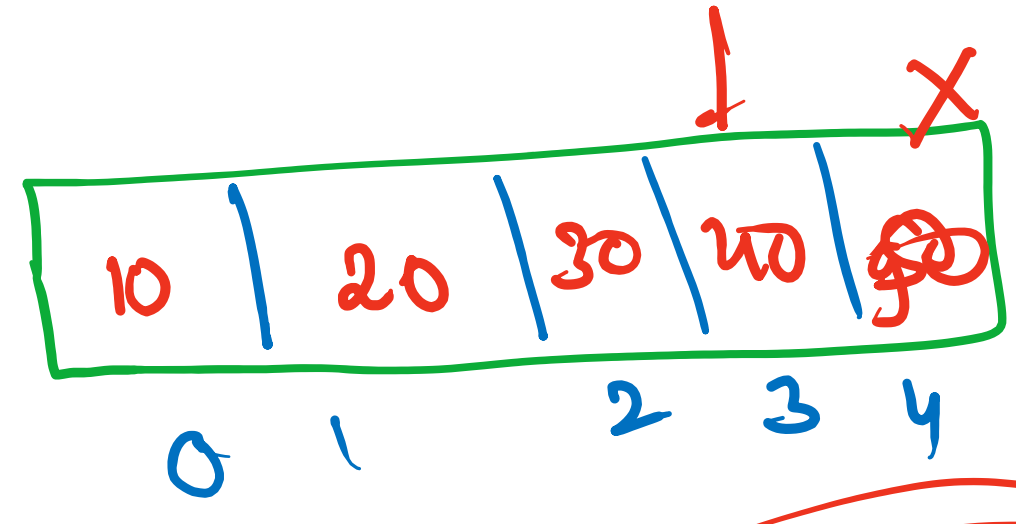
st.push(10)
st.push(20)
st.push(30)

idx++
arr[idx] = item



idx = -1
idx = 0
idx = 1
idx = 2

idx = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

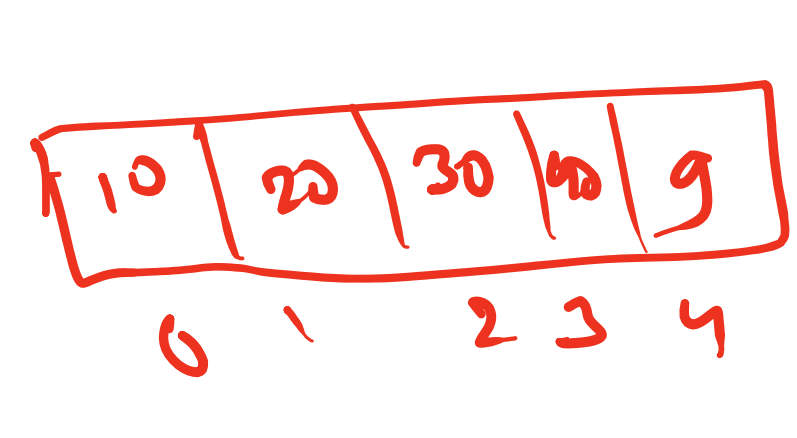


idx = arr.length - 1

idx++

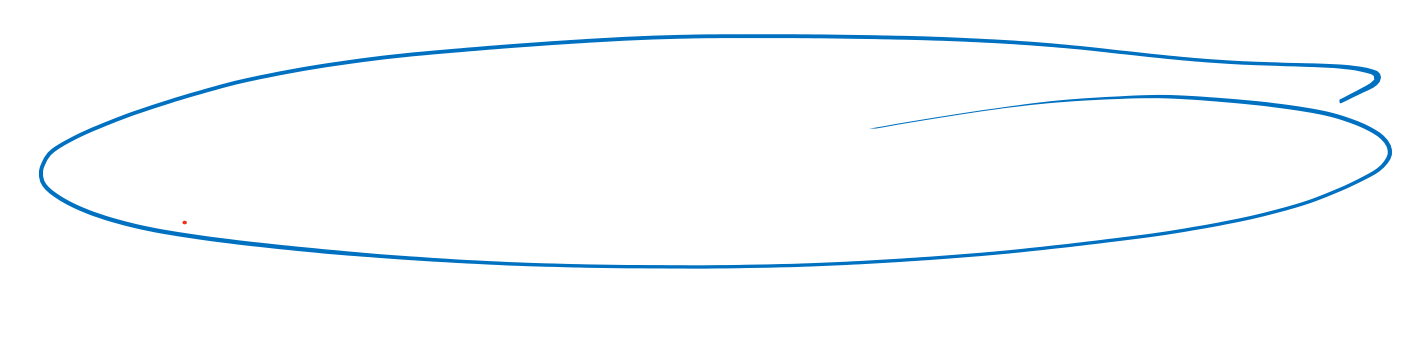
idx++ = arr.length

idx = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

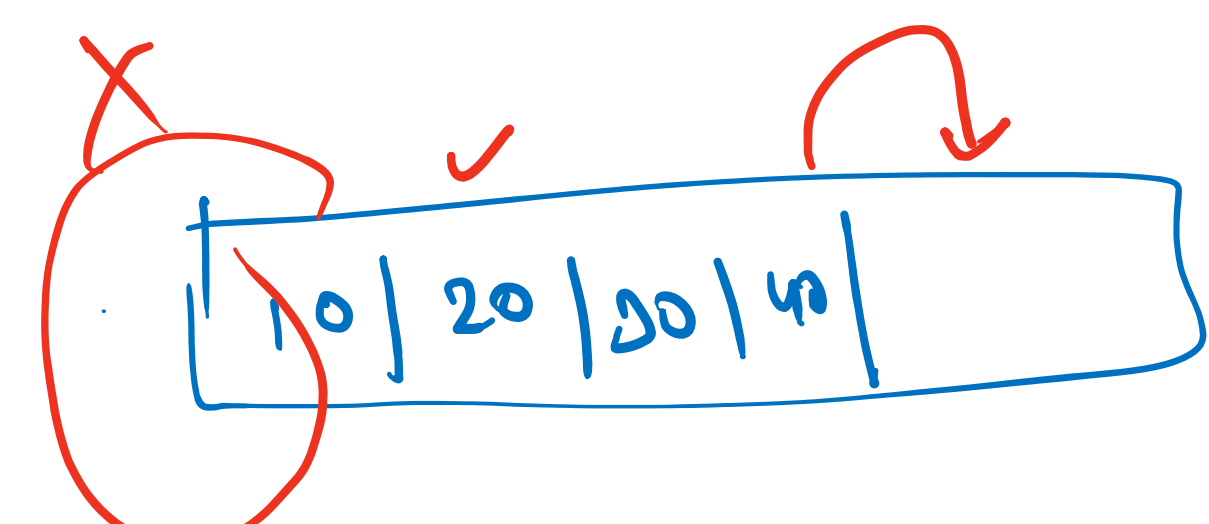


```
public void push(int item) {  
    idx++;  
    arr[idx] = item;  
}
```

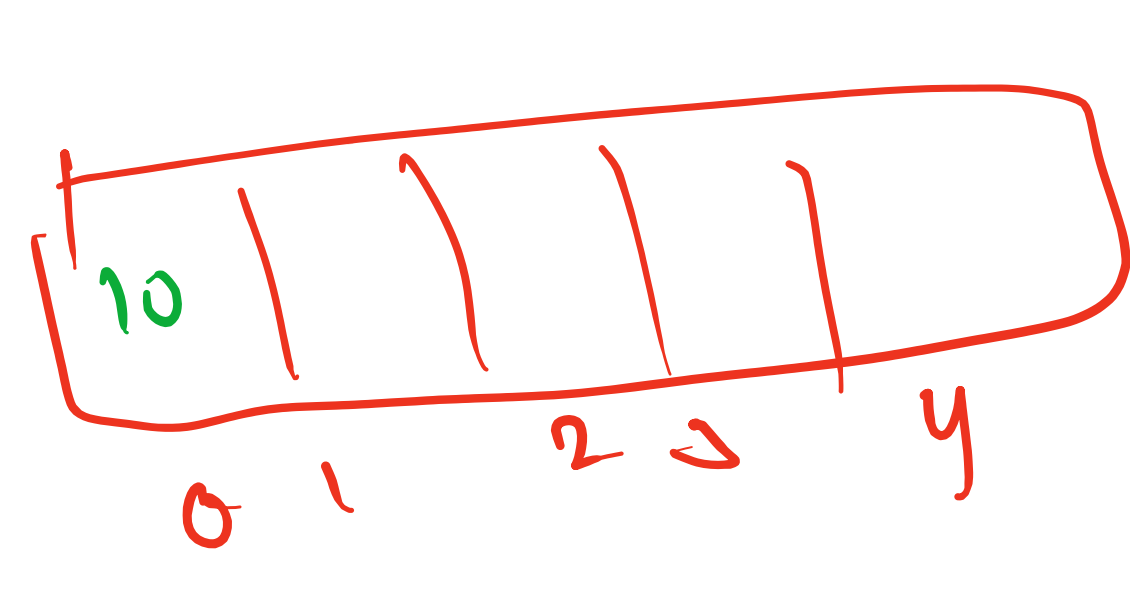
```
Stack st = new Stack();  
st.push(10);  
st.push(20);  
st.push(30);  
st.push(40);  
st.push(9);  
st.Display();  
st.push(-9);
```



add -> enqueue
delete -> dequeue
get front
isEmpty
isFull
idx -> size



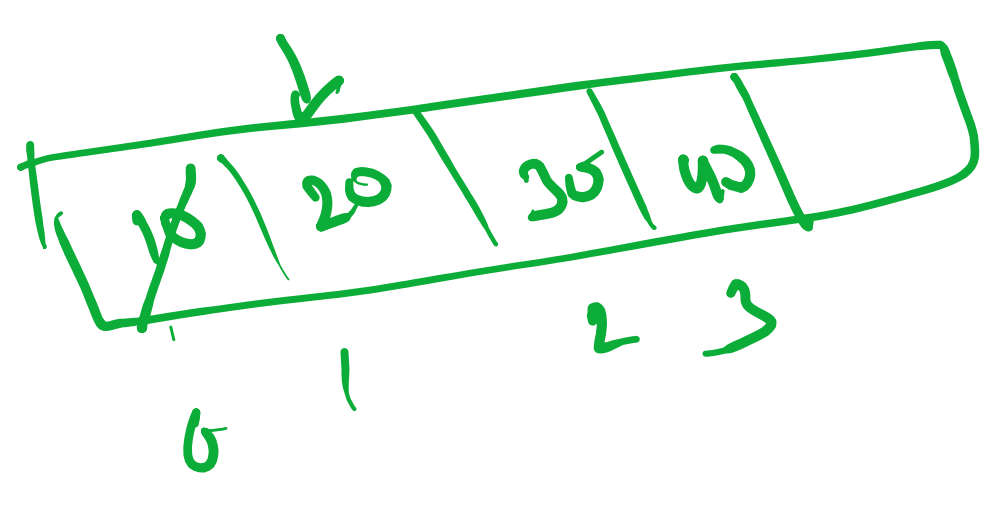
size = 0
arr = new int[size]
arr[size] = item
size++



```
// O(1)  
public void Enqueue(int item) {  
    arr[size] = item;  
    size++;  
}
```

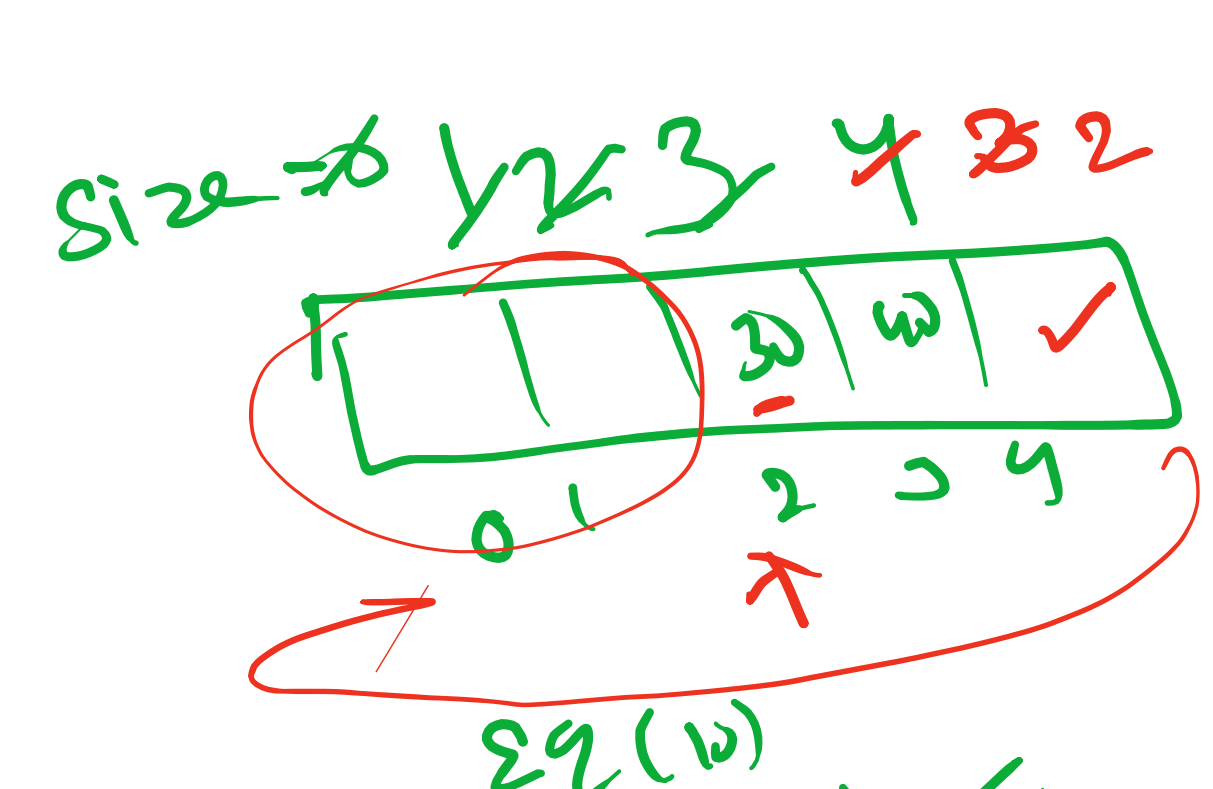
size = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

enqueue(10)
enqueue(20)
enqueue(30)
enqueue(40)
size()
display()
display()



v = arr[f]
front++

```
// O(1)  
public void Enqueue(int item) {  
    arr[size] = item;  
    size++;  
}
```

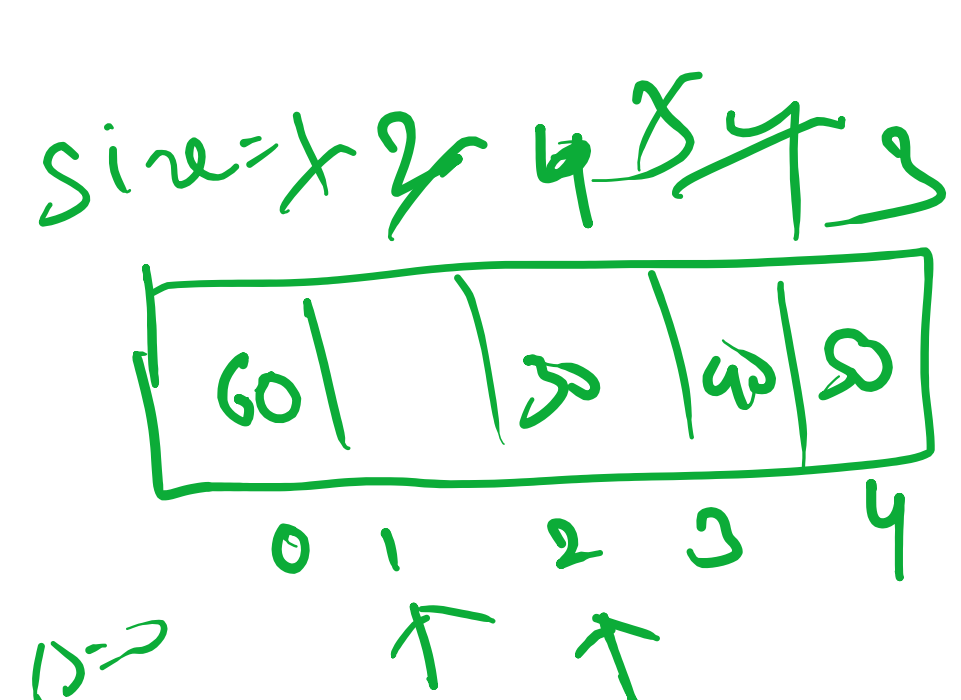


```
// O(1)  
public int Dequeue() {  
    int v = arr[front];  
    front++;  
    size--;  
    return v;  
}
```

size = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

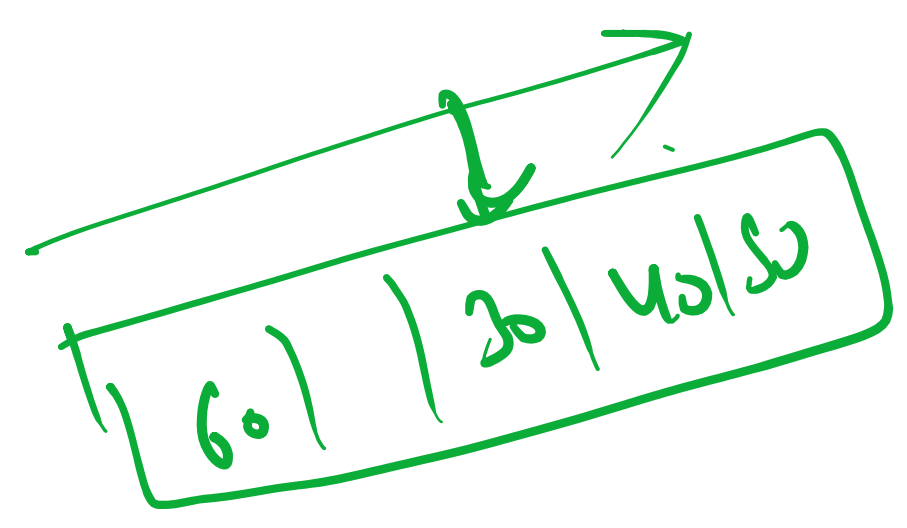
dequeue()
dequeue()
dequeue()
dequeue()
dequeue()
dequeue()
dequeue()
dequeue()

```
public void Enqueue(int item) throws Exception {  
    if (isFull()) {  
        throw new Exception("Queue full hai");  
    }  
    int idx = (front + size) % arr.length;  
    arr[idx] = item;  
    size++;  
}  
  
// O(1)  
public int Dequeue() throws Exception {  
    if (isEmpty()) {  
        throw new Exception("Queue Empty hai");  
    }  
    int v = arr[front];  
    front = (front + 1) % arr.length;  
    size--;  
    return v;  
}
```



size = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

front = 0
rear = 0
front = 1
rear = 1
front = 2
rear = 2
front = 3
rear = 3



for (i = 0; i < size; i++)
 arr[i] = arr[i + 1];