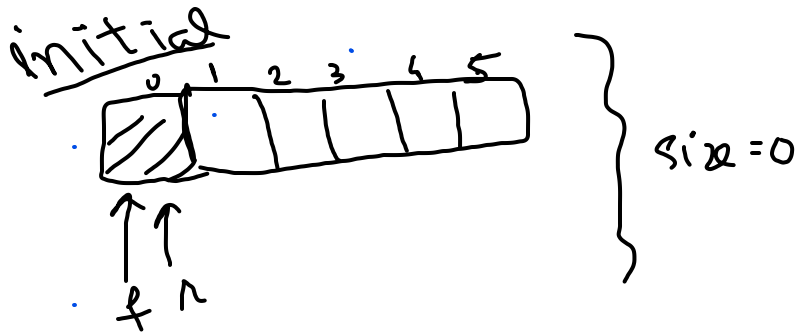
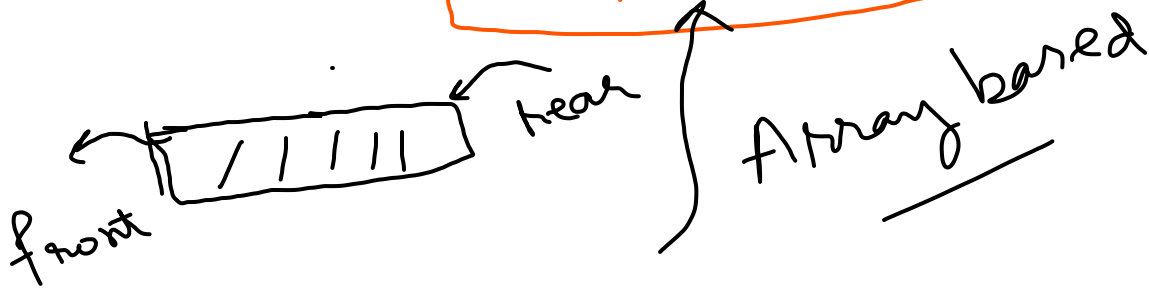
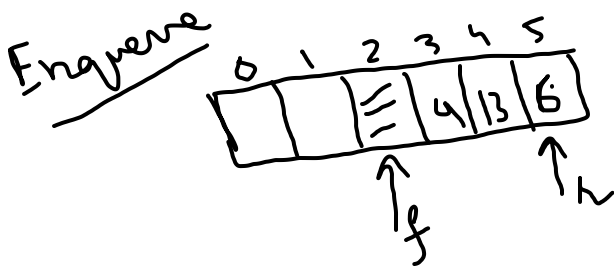


Lecture # 3 Queue (FIFO)



T*arr
cap = 5+1
size = 0
f } index vals
r }



operations
Enqueue - add at rear → size++

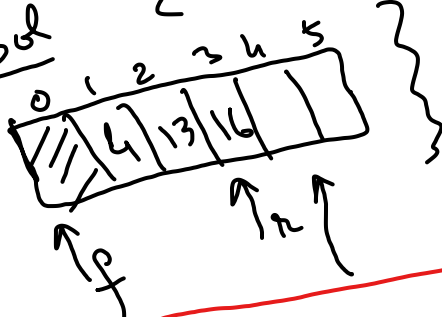
Dequeue - remove at front
size--

peek - read from front

n steps

~~shifting~~

BAD Sol



Non Circular

empty
but size == 0

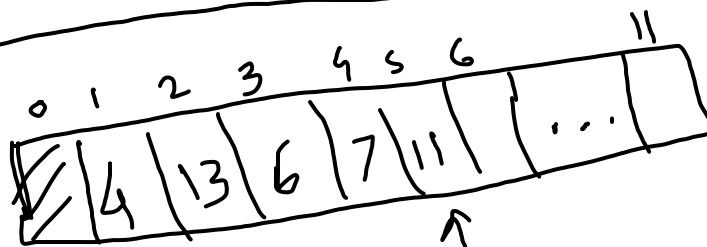


Good sol

$IF (Size + 1 == Cap)$

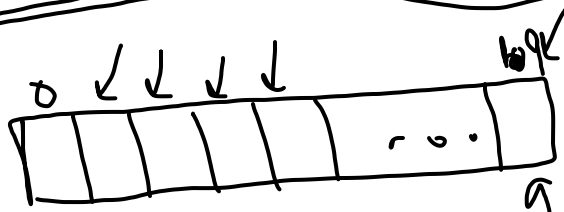
Size = 5

Circular Queue



Circular

$i++$
 Cap
 $IF (i == Cap)$
 $i = 0$



$i = 0$
 $i++$

Cap = 10

$i = (i + 1) \% 10$

```
int next(int i){
    return (i + 1) % Cap;
}
```

0 → 1 → 2 → 3 ...

9 → 0 →

~~$i++$~~

$i = next(i);$

13

↓

0

1

2

...

12

Print Queue

what is wrong?

```
for(int i=0; i<size; i++)  
    cout<<arr[i];
```

Correct way

```
int i = next(f);  
int cnt = 0;  
while(cnt < size){  
    cout<<arr[i];  
    i = next(i);  
    cnt++;  
}
```

f+1

Questions

