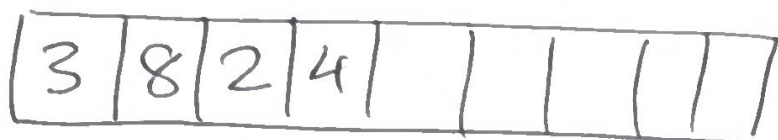
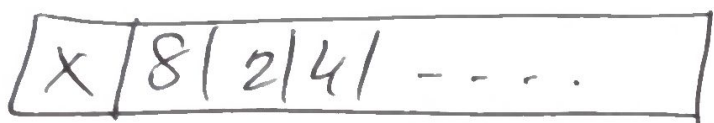


COP 3502 9/26/25

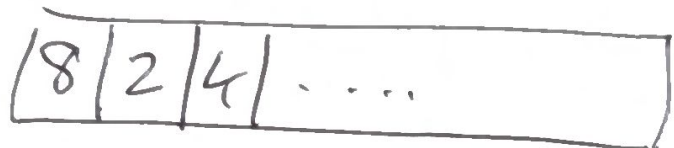
Array Implementation of a queue



Dequeue?

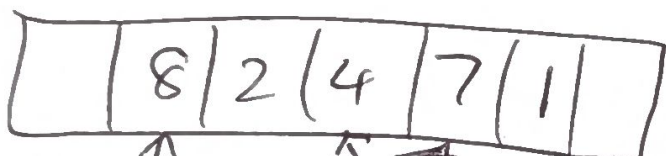


real life we do



better solution

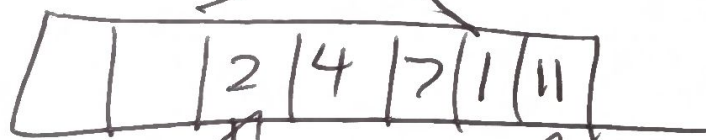
have an index to front



front

back

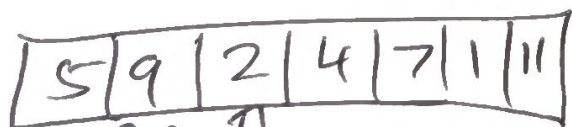
enqueue 2 more
dequeue



front

back

enqueue



back

front

Solution to new enqueue:

Wrap around to front

MOD

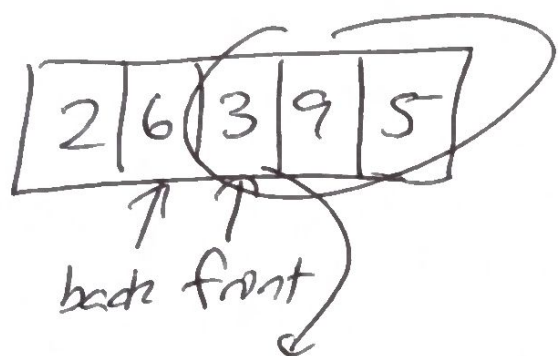
Size **7**

enqueue again

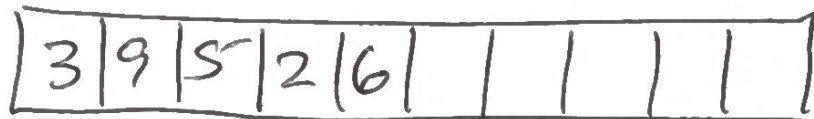
Need to store: array
front index
back index
curSize
maxSize/capacity

SITUATION

Array is full we want to realloc



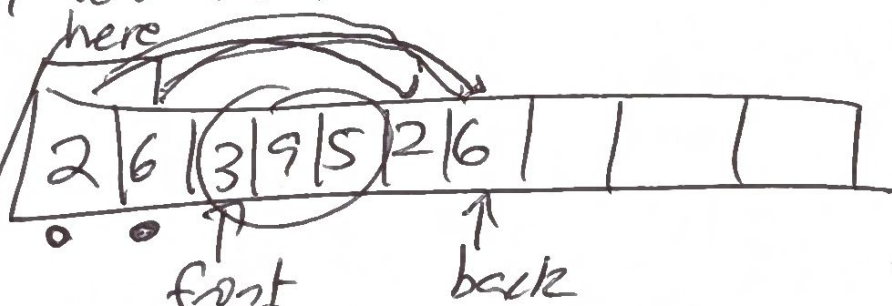
Strategy #1



```
for (int i=0, j=q->front; i < q->curSize; i++, j++) {
    newArray[i] = q->array[j % q->maxSize];
    q->front = 0; q->back = q->maxSize;
    // add item here
}
```

Strategy #2

In my code
I skip copying
3, 9, 5



```
for (int i = q->front; i < q->front + q->maxSize; i++)
    newArray[i] = q->array[i % q->maxSize];
```

from before