

CS180 - Queues

Note Title

9/21/2012

Announcements

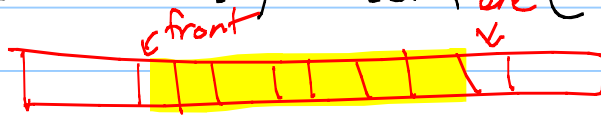
- HW due yesterday

- Next HW is up.

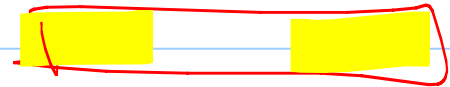
- Reviews next Wed,
test next Thursday

temp = temp → next j

Queues - implementation are (with array)



push(e):



- $Q[\text{end}] = e;$
- $\text{end} = (\text{end} + 1) \% \text{capacity};$
- $\text{size}++;$

error
checking

pop():

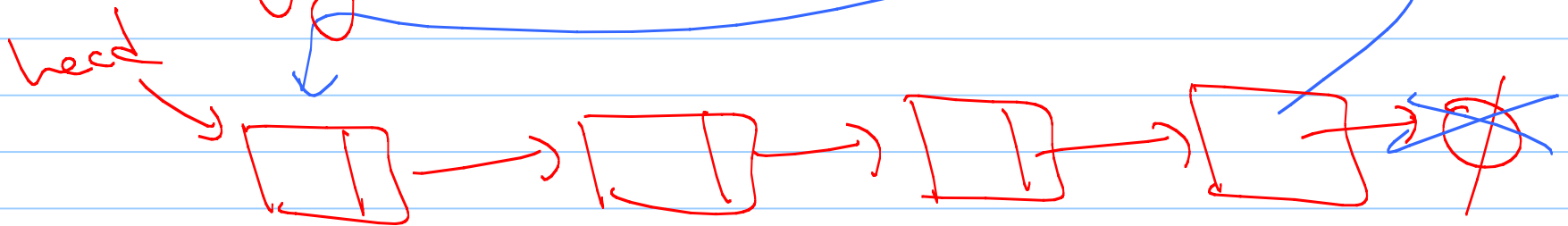
- $\text{front} = (\text{front} + 1) \% \text{capacity};$
- $\text{size}--;$

Linked Queues

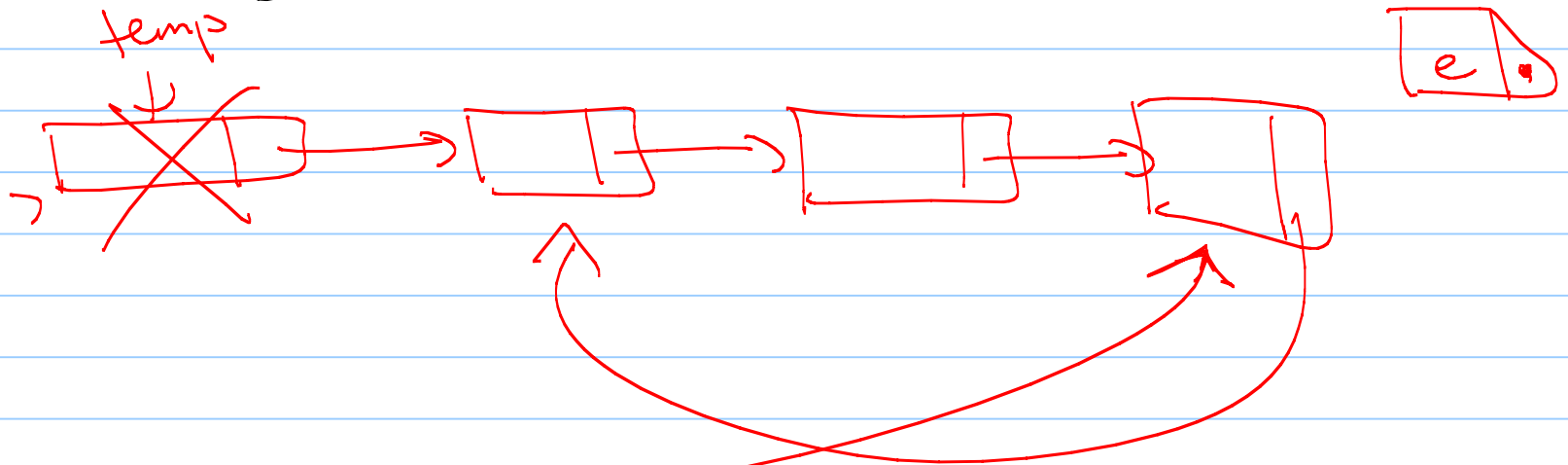
Need the ability to insert at end
and remove from front.

A simple modification to linked
lists will get us this!

Our singly linked list.



Circularly linked lists (Ch 3)



cursor

inserting at end → good

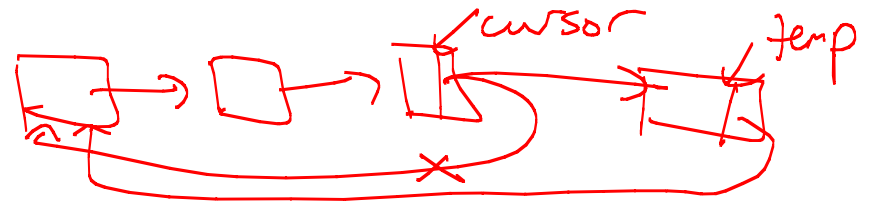
```
template <typename Object>
Linked Queue {
```

```
private:
```

```
struct Node {
    Object _elem;
    Node* _next;
    Node(const Object& e = Object(),
         Node* n = NULL) : _elem(e), _next(n) {}
};
```

Constructor
for
Node
struct

```
Node* _cursor;
int _size;
```



```
void push(const Object& e) {
```

```
    Node* temp = new Node(e, cursor->_next);
```

```
    cursor->_next = temp;
```

```
    cursor = temp;
```

```
    size++;
```

}
 Missing: pushing to empty queue