

# CS180 - Vectors

Note Title

10/17/2011

## Announcements

= Today: checkpoint

- Program is due Tuesday

- Lab due Sunday  
(no lab next week)

- Reviews on Wed  
Test Thursday

Recap of runtimes:

Stack or Queue

push, pop, top, size, empty:  $O(1)$

↳ might be  $O(n)$  in array based

smart  
Stack fixes  
this

Hidden cost:

Copy constructor & operator = :  $O(n)$

destructor: array-based  $O(1)$   
linked-based  $O(n)$

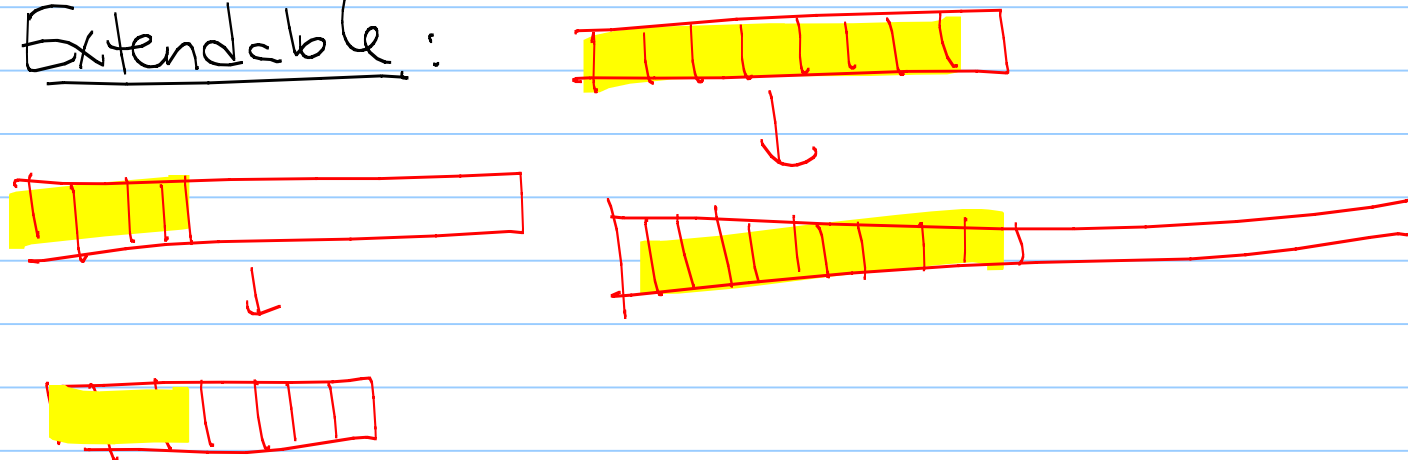
# Vectors - Ch 6.1

Similar to lists in python

Difference: single type

myvector [5] = 6;

Extendable:

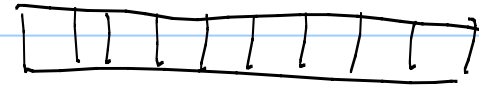


Code:

```
private data:  
int -Capacity;  
int -Size;  
Object* -data;
```

Functions:  
(see STL)

Object array



# Insert

myvec.insert(2, 'c');

othervec.insert(11, "new");

anothervec.insert(7, -25);



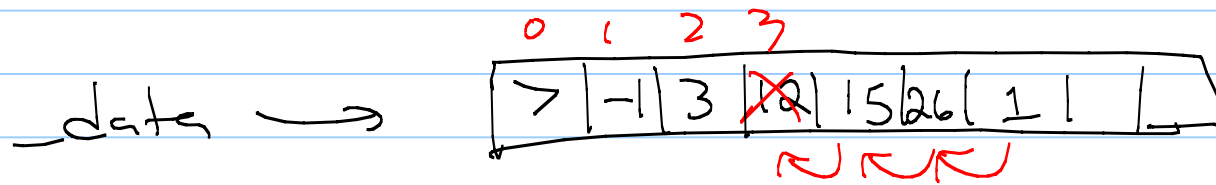
How to insert?  
(What if full?)

extendable:  
- allocate bigger array  
- copy data down

## Erase

- take an index & delete that element

Ex: myVec.erase(3)



Another: Operator []

Usage: myvector[6] = 9;

What else:

Housekeeping!

in Python, shallow copies  
were default