

# CS180 - Stacks - (ch 5.1)

Note Title

9/19/2012

## Announcements

- HW due Sunday
- Look for makefile on announcement page → make

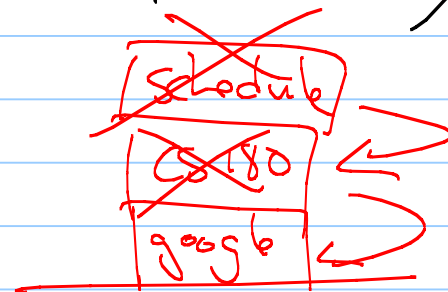
or:

```
g++ SLinkedList.h  
g++ testLL.cpp
```

Stack: a way to store a list of data

Ex: Web browser: store history for  
"back" button

Ex: Text editors: store previously  
used commands



## The stack ADT:

Supports 2 main functions:

$O(1)$  - push( $e$ ): add  $e$  to "top" of the stack

$O(1)$  - pop(): remove  $e$  from the stack

(limited, but fast)

## Others

- top(): returns top element of the stack without removing it

- empty(): returns true if stack is empty

→ - size(): returns # of objects in the stack

## Others

- top(): returns top element of the stack without removing it

- empty(): returns true if stack is empty

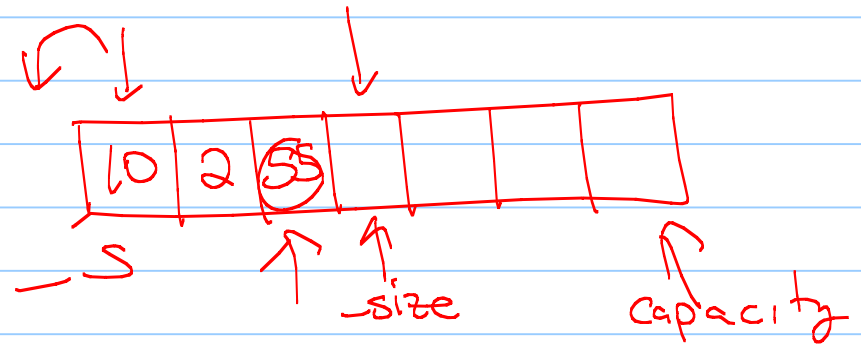
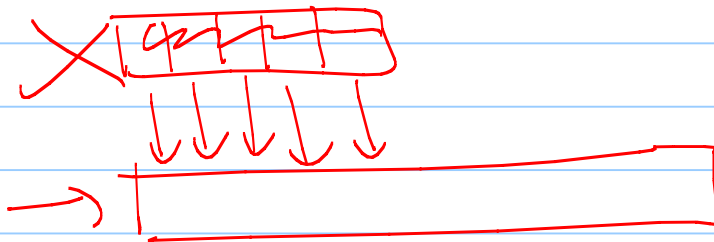
- size(): returns # of objects in the stack

Array-based:

Object is templated type

private:

```
int size; // size of stack  
Object* _S; // array holding stack  
int cap; // size of underlying array
```



Other functions to code

Housekeeping!

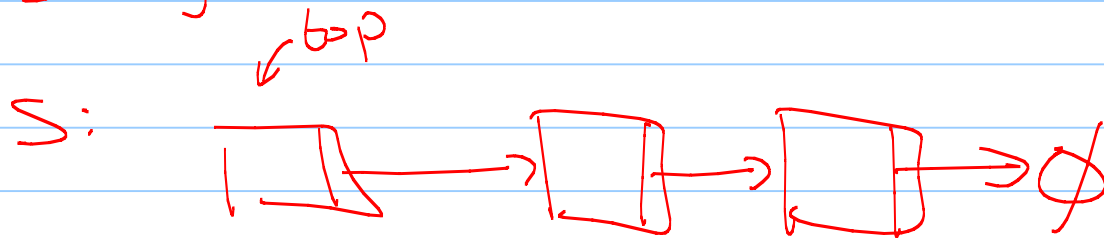
# Linked Stacks

Underlying data will be kept in a linked list, not an array.

```
#include "SLinkedList.h"
```

```
private:
```

```
SLinkedListobj S;  
int _size;
```





# Functions

What to code?

Same!

