

# CS180 - C++ & the command line

Note Title

9/2/2011

## Announcements

- HW will go up today
- Labs are due Sunday  
prelabs are due before class  
generally, you can work in pairs  
(tell me your partner)

# The command line

① SSH demo

Notes: No GUI  
(so no Kate!)

Connected to turing.slu.edu

## Command line tips

In general, you'll use 5-6 commands the most

- ls - list files in current directory
- cp sourcefile targetfile
- mkdir name
- rmdir name
- cd directory name
- mv sourcefile targetfile
- rm file remove

copy

change directory

## Others

- vi or emacs or ~~pico~~ nano
- g++ or make
- man (manual pages)

## Tricks

- Hitting the up arrow gives the last thing you typed  
( & then you can edit )
- Hitting tab will auto complete
- You can use `&` to get prompt back  
ex: `kak file &`
- `.` is current directory, `..` is parent  
ex: `cd ..`  
`cp ../file .`

# Do-while loops

```
int number;  
do {  
    cout << "Enter a number from 1 to 10: ";  
    cin >> number;  
} while (number < 1 || number > 10);
```

← semi colon

Executes body before checking the boolean

## If statements

```
if (bool) {  
    body 1;  
}  
else {  
    body 2;  
}
```

Ex:

if (groceries...)  
else {  
 if (groceries...)  
}

```
if (x < 0)  
    x = -x;
```

```
if (groceries.length() > 15)  
    cout << "Go to the grocery store" << endl;  
else if (groceries.contains("milk"))  
    cout << "Go to the convenience store" << endl;
```

not elif else

Note:

- Don't need brackets if 1 line
- don't need else
- no elif

# Booleans

Python C++

Boolean Operators		
and	&&	logical and
or		logical or
not	!	logical negation
a if cond else b	cond ? a : b	conditional expression

exclamation

Comparison Operators		
a < b	a < b	less than
a <= b	a <= b	less than or equal to
a > b	a > b	greater than
a >= b	a >= b	greater than or equal to
a == b	a == b	equal
a < b < c	a < b && b < c	chained comparison



## Booleans & if/whiles

If & while statements can be written with numeric conditions (which are really booleans).

Ex: if (mistakeCount) cout << "Error!" << endl; mistakeCount == 0

0  $\iff$  false

any non-zero #  $\iff$  true

## Common error

What is wrong?

```
double gpa;  
cout << "Enter your gpa: ";  
cin >> gpa;  
if (gpa = 4.0)  
    cout << "Wow!" << endl;
```

make gpa = 4.0

# For loops

Example: for (~~int~~ count = 10; count > 0; count --)  
cout << count << endl;  
cout << "Blastoff" << endl;

start                      boolean                      update  
↓                                      ↓                                      ↓

Note: int declaration isn't required

for (int i = 0; i < 10; i++)

10  
9  
8  
7  
6  
⋮  
1  
Blastoff

## The main function

Every program defaults to running a  
main.

## other functions

```
int main() {  
    body;  
}
```

(See example)