Announcements

- HW will go up today

- Labs are due Sunday
  pre-labs 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 directoryname`
- `mv sourcefile targetfile`
- `rm file` remove
Others

- vi or emacs or pic
- g++ or make
- man (manual pages)
Tricks

- Hitting the up arrow gives the last thing you typed (and 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

```cpp
int number;

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

Executes body before checking the boolean
**If statements**

```
if (bool) 
  body1;
else 
  body2;
```

**Note:**
- Don't need brackets if 1 line
- Don't need else
- No elif

**Example:**

```
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;
```
### Boolean Operators

<p>| | | |</p>
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<thead>
<tr>
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<tbody>
<tr>
<td><strong>and</strong></td>
<td><code>&amp;&amp;</code></td>
<td>logical and</td>
</tr>
<tr>
<td><strong>or</strong></td>
<td>`</td>
<td></td>
</tr>
<tr>
<td><strong>not</strong></td>
<td><code>!</code></td>
<td>logical negation</td>
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<tr>
<td><strong>a if cond else b</strong></td>
<td><code>cond ? a : b</code></td>
<td>conditional expression</td>
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### Comparison Operators

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<thead>
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<tr>
<td><code>a &lt; b</code></td>
<td><code>a &lt; b</code></td>
<td>less than</td>
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<tr>
<td><code>a &lt;= b</code></td>
<td><code>a &lt;= b</code></td>
<td>less than or equal to</td>
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<tr>
<td><code>a &gt; b</code></td>
<td><code>a &gt; b</code></td>
<td>greater than</td>
</tr>
<tr>
<td><code>a &gt;= b</code></td>
<td><code>a &gt;= b</code></td>
<td>greater than or equal to</td>
</tr>
<tr>
<td><code>a == b</code></td>
<td><code>a == b</code></td>
<td>equal</td>
</tr>
<tr>
<td><code>a &lt; b &lt; c</code></td>
<td><code>a &lt; b &amp;&amp; b &lt; c</code></td>
<td>chained comparison</td>
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Booleans & if/whiles

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

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

0 \Rightarrow false

any non-zero \# \Rightarrow 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 << "Blast off" << endl;}

Note: int declaration isn't required

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

10 9 8 7 6 5 4 3 2 1
Blastoff
The main function
Every program defaults to running a
other functions
int main( )
  body;
} (See example)