CS 161
Intro to CS I
More Conditional Statements and Begin Repetition
Odds and Ends...

• Last week to demo Assignment #1!!!
• Demo Assignment #2
• Assignment #3 is posted
  – Design Due on Canvas by Sunday, 10/15
Nested for Loops

```
for(x = 0; x < 10; x++)
{
    for(y = 0; y < 10; y++)
    {
        cout << “hello world\n”;
    }
}
```

• How many times is Hello World printed?
Reuse Variables

```cpp
for(x = 0; x < 10; x++) {
    cout << “The value of x is: ” << x << endl;
}
for(x = 0; x < 10; x++) {
    cout << “The value of x is: ” << x << endl;
}
```
Variables with same name

```c++
int x;
for(x = 0; x < 10; x++) {
    for(x = 0; x < 10; x++) {
        cout << "The value of x is: " << x << endl;
    }
}
```

• What is the output from this nested loop?
Infinite Loops

```cpp
int x;
for(x = 0; x < 10; x++) {
    for(x = 0; x < 5; x++) {
        cout << "The value of x is: " << x << endl;
    }
}
```
Infinite Loops

```cpp
int x, y;
for(x = 0; x < 10; x++) {
    for(y = 0; y < 5; x++) {
        cout << "The value of x is: " << x << endl;
    }
}
```
Infinite Loops

```cpp
int x, y;
for(x = 0; x < 10; x++) {
    for(y = 0; x < 5; y++) {
        cout << "The value of x is: " << x << endl;
    }
}
```
Infinite Loops

```cpp
int x;
for(x = 1; x <= 10; x++) {
    cout << "The value of x is: " << --x << endl;
}
```
Why is this good/bad?

```cpp
for(int x = 0; x < 10; x++) {
    for(int y = 0; y < 10; y++) {
        cout << "hello world" << endl;
    }
}

• Where can we access x and y?
```
Looping Recap...

• for loops
  – Repeat for specific number of times
  – Example?

• while loops
  – Repeat while a condition is being met
  – Example?

• do while loops
  – Always do once, and repeat while condition is met
  – Example?
Infinite Loop Example...
How do we read a string of chars?

• User-defined type in string library
#include <string>
• Declare/Create type
string mssg;
• Read with cin or getline
cin >> mssg;  //get a word
getline(cin,mssg);  //get a line of txt
Demo...
Finish C++ String Demo

• What does cin do when reading...
  – Int/Floats
  – Strings
• What does getline do?
Demo...
More about *break*, *exit*, and *return*

- **break** – used with switch and loops, breaking out of the closest associated case or loop (for, while, or do while). *This statement can only occur in a loop or case*, otherwise the compiler yells!

- **return** – leave the current function, which exits the program when in the `main()` function. You can put this *anywhere inside any function*, otherwise the compiler yells!

- **exit()** – exit the entire program, no matter where this is encountered. You can put this *anywhere inside any function*, as long as you include `<cstdlib>`, otherwise the compiler yells!