CS 161
Intro to CS I

More Conditional Statements
Recap C++ If/Else...

```cpp
int x = 2, y = 3;

if( x > y) {
    std::cout << "X is greater than Y\n";
}
else if( x < y) {
    std::cout << "X is less than Y\n";
}
else {
    std::cout << "X is equal to Y\n";
}
```
Extra Credit Exercise #3...

• Get into groups 4-5, and everyone write down your name on one piece of paper.
• Tell me what this program does...
```cpp
#include <iostream>

using namespace std;

int main() {
    int result, age = 64;

    result = (++age++) + 1;  // ++ age 1st, assign to result, then ++ age again
    cout << result << endl; // result 65
    cout << age << endl;    // age 66, age++ is age = age + 1

    result = age--;         // age 65
    cout << result << endl; // result 66
    cout << age << endl;    // age is 65

    if (age >= 65) {
        cout << "You are a senior citizen!!!" << endl;
    } else {
        cout << "You haven't become senior status yet!" << endl;
    }

    return 0;
}
```
What are the curly braces for?

if (x > y)
    std::cout << “X is greater than Y\n”;  
else if (x < y)
    std::cout << “X is less than Y\n”;  
else
    std::cout << “X is equal to Y\n”;  

\[5\]
What if we are testing for ==?

```cpp
if( x == 0) {
    std::cout << "X is zero\n";
}
else if( x == 1) {
    std::cout << "X is one\n";
}
else if( x == 2) {
    std::cout << "X is two\n";
}
else {
    std::cout << "You have entered an invalid number!!!\n";
}
```

```cpp
#include <iostream>

using namespace std;

int main() {
  int result, age=64;

  result=(++age)+1; //++ age 1st, assign to result, then ++ age again
  cout << result << endl; //result 65
  cout << age << endl; //age 66, age++ is age=age+1

  result = age--;
  cout << result << endl; //result 66
  cout << age << endl; //age is 65

  //This will assign age 1 and then fetch the value in age, which is
  //always true!!! This will always print hello, not check if age is 1!
  if(age=1)
    cout << "hello" << endl;

  if(age >= 65) {
    cout << "You are a senior citizen!!!" << endl;
  }
  else {
    cout << "You haven't become senior status yet!" << endl;
  }

  return 0;
}
```
```cpp
#include <iostream>

using namespace std;

int main() {
    int result, age=64;
    result=(++age)++; //++ age 1st, assign to result, then ++ age again
    cout << result << endl; //result 65
    cout << age << endl; //age 66, age++ is age=age+1
    result = age--;
    cout << result << endl; //result 66
    cout << age << endl; //age is 65

    //This will assign age 0 and then fetch the value in age, which is always false!! This will NEVER print hello, not check if age is 0!
    if(age==0)
        cout << "hello" << endl;

    if(age >= 65) {
        cout << "You are a senior citizen!!" << endl;
    }
    else {
        cout << "You haven't become senior status yet!" << endl;
    }
    return 0;
}
```
We can use a switch...

```java
switch( <expression> ) {
    case <const-expr>:
        <statement>;
    ...
    case <const-expr>:
        <statement>;
    ...
    default:
        <statement>;
    ...
}
```

Anything you can do with a switch, you can do with if/else, not everything you can do with if/else can you do with switch!
C++ Switch Example

```cpp
switch( x ) {
    case 0:
        std::cout <<“X is zero
”;
        break;
    case 1:
        std::cout <<“X is one
”;
        break;
    case 2:
        std::cout <<“X is two
”;
        break;
    default:
        std::cout <<“You have entered an invalid number!!!\n”;
}
```
C++ Switch Example

```cpp
switch( x ) {
    case 0:
    case 1:
        std::cout << "X is zero or one
";
        break;
    case 2:
        std::cout << "X is two
";
        break;
    default:
        std::cout << "You have entered an invalid number!!!\n";
}
```

> this says `if (x==0 || x==1)`
```cpp
#include <iostream>

using namespace std;

int main() {
    int x;
    cout << "enter 0, 1, or 2: ";
    cin >> x;

    // Without a break, then after the match to the case occurs, then all
    // other lines are executed until a break is encountered or the end of
    // the switch is encountered.
    switch (x) {
        case 0:
            break;
        case 1:
            cout << "X is zero or one" << endl;
        case 2:
            cout << "X is two" << endl;
        default:
            cout << "You entered something invalid" << endl;
    }
    return 0;
}
```