CS 161
Intro to CS I

More Conditional Statements

Recap C++ If/Else...

(handwritten annotation: int x=2, y=3;)

```cpp
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";
}
```

(handwritten annotations, right side:)
```
if (x > y) {
    :
if (x < y) {
    :
if ( x == y) {
    :
```

Extra Credit Exercise #3…

- Get into groups 4-5, and everyone write down your name on one piece of paper.
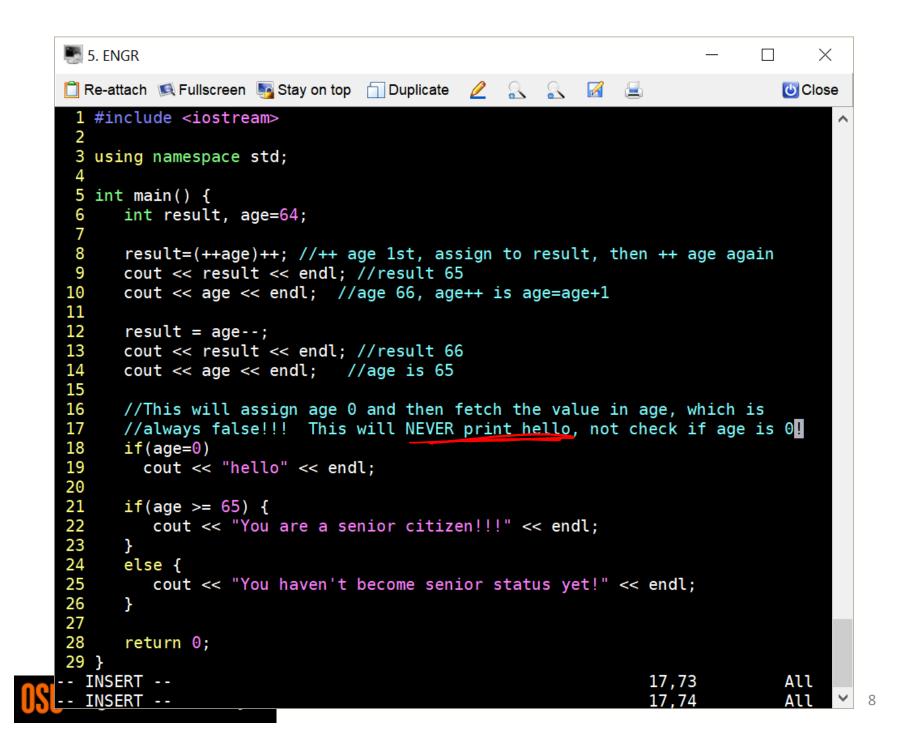
- Tell me what this program does…

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Close

```cpp
1 #include <iostream>
2
3 using namespace std;
4
5 int main() {
6     int result, age=64;
7
8     result=(++age)++; //++ age 1st, assign to result, then ++ age again
9     cout << result << endl; //result 65
10    cout << age << endl;  //age 66, age++ is age=age+1
11
12    result = age--;
13    cout << result << endl; //result 66
14    cout << age << endl;    //age is 65
15
16    if(age >= 65) {
17        cout << "You are a senior citizen!!!" << endl;
18    }
19    else {
20        cout << "You haven't become senior status yet!" << endl;
21    }
22
23    return 0;
24 }
~
```

15,3   All

4

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";
```

← if anothe cout was here, this would not compile!

You cannot have statements that are not part of if in between an if and else if

What if we are testing for ==?

be careful + don't use = ,assign op'r

```
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";
}
```

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```cpp
1 #include <iostream>
2
3 using namespace std;
4
5 int main() {
6     int result, age=64;
7
8     result=(++age)++; //++ age 1st, assign to result, then ++ age again
9     cout << result << endl; //result 65
10    cout << age << endl;  //age 66, age++ is age=age+1
11
12    result = age--;
13    cout << result << endl; //result 66
14    cout << age << endl;    //age is 65
15
16    //This will assign age 1 and then fetch the value in age, which is
17    //always true!!!  This will always print hello, not check if age is 1!
18    if(age=1)
19      cout << "hello" << endl;
20
21    if(age >= 65) {
22        cout << "You are a senior citizen!!!" << endl;
23    }
24    else {
25        cout << "You haven't become senior status yet!" << endl;
26    }
27
28    return 0;
29 }
```

-- INSERT --   17,74   All
-- INSERT --   17,74   All

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```cpp
1 #include <iostream>
2
3 using namespace std;
4
5 int main() {
6     int result, age=64;
7
8     result=(++age)++; //++ age 1st, assign to result, then ++ age again
9     cout << result << endl; //result 65
10    cout << age << endl;  //age 66, age++ is age=age+1
11
12    result = age--;
13    cout << result << endl; //result 66
14    cout << age << endl;    //age is 65
15
16    //This will assign age 0 and then fetch the value in age, which is
17    //always false!!!  This will NEVER print hello, not check if age is 0!
18    if(age=0)
19      cout << "hello" << endl;
20
21    if(age >= 65) {
22        cout << "You are a senior citizen!!!" << endl;
23    }
24    else {
25        cout << "You haven't become senior status yet!" << endl;
26    }
27
28    return 0;
29 }
```

-- INSERT --   17,73   All
-- INSERT --   17,74   All

OSL

We can use a switch…

```
switch( <expression> ) {
    case <const-expr>:
        <statement>;
        …
    case <const-expr>:
        <statement>;
        …
    default:
        <statement>;
        …
}
```
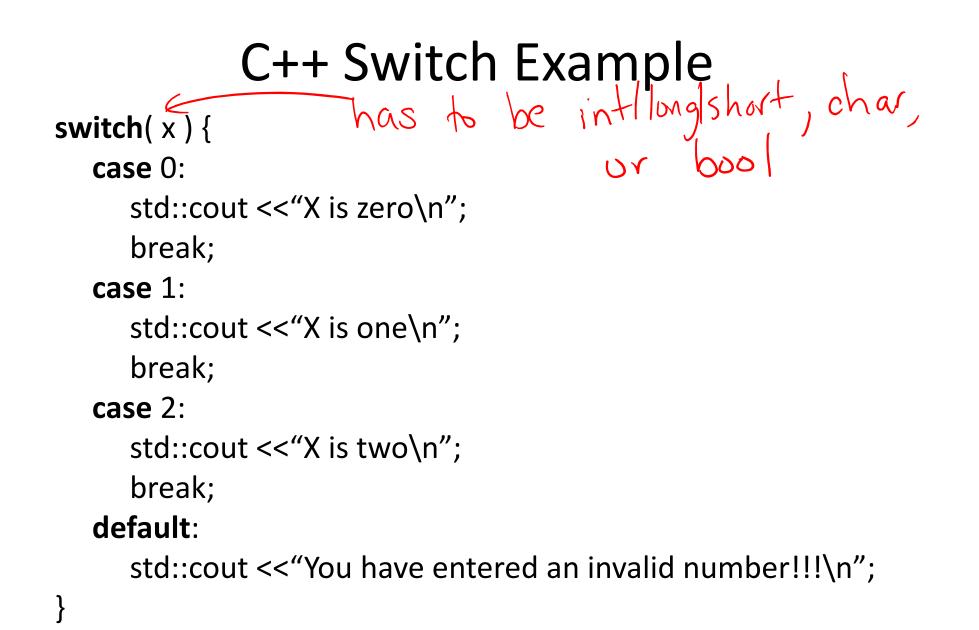
Anything you can do with a switch, you can do with if/else, not everything you can do with if/else can you do with switch!

C++ Switch Example

has to be int/long/short, char, or bool

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

C++ Switch Example

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

this says if (x==0 or || x==1)

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```cpp
 1 #include <iostream>
 2
 3 using namespace std;
 4
 5 int main() {
 6     int x;
 7
 8     cout << "enter 0, 1, or 2: ";
 9     cin >> x;
10
11     //Without a break, then after the match to the case occurs, then all
12     //other lines are executed until a break is encountered or the end of
13     //the switch is encountered.
14     switch(x) {
15        case 0:
16        case 1:
17           cout << "X is zero or one" << endl;
18        case 2:
19           cout << "X is two" << endl;
20        default:
21           cout << "You entered something invalid" << endl;
22
23     }
24
25     return 0;
26 }
~
~
~
-- INSERT --                                        24,1          All
-- INSERT --                                        17,74         All
```

12