



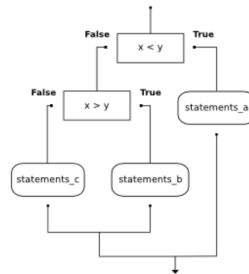
## 8.8. Nested conditionals

One conditional can also be **nested** within another. For example, assume we have two integer variables, `x` and `y`. The following pattern of selection shows how we might decide how they are related to each other.

```
if x < y:
    print("x is less than y")
else:
    if x > y:
        print("x is greater than y")
    else:
        print("x and y must be equal")
```

The outer conditional contains two branches. The second branch (the `else` from the outer) contains another `if` statement, which has two branches of its own. Those two branches could contain conditional statements as well.

The flow of control for this example can be seen in this flowchart illustration.



Here is a complete program that defines values for `x` and `y`. Run the program and see the result. Then change the values of the variables to change the flow of control.

Save & Run

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Show in CodeLens

```
1 x = 10
2 y = 10
3
4 if x < y:
5     print("x is less than y")
6 else:
7     if x > y:
8         print("x is greater than y")
9     else:
10        print("x and y must be equal")
11
```

x and y must be equal

Activity: 1 -- ActiveCode (ac7\_8\_1)

### Note

In some programming languages, matching the `if` and the `else` is a problem. However, in Python this is not the case. The indentation pattern tells us exactly which `else` belongs to which `if`.

If you are still a bit unsure, here is the same selection as part of a code lens example. Step through it to see how the correct `print` is chosen.

Python 3.3

```
1 x = 10
2 y = 10
3
4 if x < y:
5     print("x is less than y")
6 else:
7     if x > y:
8         print("x is greater than y")
9     else:
10        print("x and y must be equal")
```



<< First

< Back

Program terminated

Forward >

Last >>

⇒ line that has just executed

→ next line to execute

Program output:

x and y must be equal

Frames

Objects

Global frame

x 10

y 10

Activity: 2 -- CodeLens: (clens7\_8\_1)

### Check your understanding

condition-8-1: Will the following code cause an error?

```
x = -10
if x < 0:
    print("The negative number ", x, " is not valid here.")
else:
    if x > 0:
        print(x, " is a positive number")
    else:
        print(x, " is 0")
```

- ☒ A. No  
☐ B. Yes

Check me

Compare me

✓ This is a legal nested if-else statement. The inner if-else statement is contained completely within the body of the outer else-block.

Activity: 3 -- Multiple Choice (question7\_8\_1)

You have attempted 4 of 3 activities on this page

8.7. Omitting the else Clause: Unary Selection">

8.7. Omitting the else Clause: Unary Selection">

8.9. Chained conditionals">

✓ Completed. Well Done!

8.9. Chained conditionals">Next Section - 8.9. Chained conditionals