



Selection statements



Selection statements

- The statements to be executed must be indented
- Use spaces or tabs, but spaces are recommended (4 spaces)
- Do NOT mix spaces and tabs
- Indentation must be consistent for all statements
- When in doubt, check [Python Style Guide \(PEP 8\)](#)

```
if expression:  
    execute statement 1  
    ...  
    execute statement N
```

Selection statements

if expression:

```
indent → //execute statements A  
//execute statements B
```

if **expression** evaluates to true,
then:

execute statements **A**,
execute statements **B**.

But if expression evaluates to false,
then:

execute statements **B** only.

Selection statements

The expression we test in an **if** statement must be a **Boolean** expression:
(named after mathematician [George Boole](#))

It **MUST** evaluate to a Boolean value: **True** or **False**

That expression:

- Can be a Boolean value: **true** or **false** (*no quotation marks*)
- Can be a variable holding a Boolean value of true or false
- Can be an expression that evaluates to a Boolean value

Selection statements

```
if x > 0:  
    print("greater!")  
print("moving on")
```

Our code:

```
x = 1
```

Python displays:

```
greater  
moving on
```

Selection statements

```
if x > 0:  
    print("greater!")  
print("moving on")
```

Our code:

```
x = -1
```

Python displays:

```
moving on
```

Selection statements

```
if expression1:  
    //execute statements A  
elif expression2:  
    //execute statements B  
//execute statements C
```

if **expression1** evaluates to true:
execute statements **A**,
execute statements **C**.

If **expression1** evaluates to false:
evaluate **expression2**.

If **expression2** evaluates to true:
execute statements **B**,
execute statements **C**.

But if **expression2** evaluates to false:
execute statements **C** only.

Selection statements

```
if x > 0:  
    print("greater!")  
elif x < 100:  
    print("smaller!")  
print("moving on")
```

Our code:

```
x = 1
```

Python displays:

```
greater!  
moving on
```


Selection statements

```
if x > 0:  
    print("greater!")  
elif x < 100:  
    print("smaller!")  
print("moving on")
```

Our code:

```
x = -101
```

Python displays:

```
smaller!  
moving on
```

Selection statements

```
if x > 0:  
    print("greater!")  
elif x < 100:  
    print("smaller!")  
print("moving on")
```

Our code:

```
x = -5
```

Python displays:

```
moving on
```

Selection statements

```
if expression1:  
    //execute statements A  
elif expression2:  
    //execute statements B  
else:  
    //execute statements C  
//execute statements D
```

if **expression1** evaluates to true:
execute statements **A**,
execute statements **D**.

If **expression1** evaluates to false:
evaluate **expression2**.

If **expression2** evaluates to true:
execute statements **B**,
execute statements **D**.

If **expression2** evaluates to false:
execute statements **C**.
execute statements **D**.

Selection statements

```
if x > 0:  
    print("greater!")  
elif x < 100:  
    print("smaller!")  
else:  
    print("whatever's left!")  
print("moving on")
```

Our code:

```
x = 1
```

Python displays:

```
greater!  
moving on
```

Selection statements

```
if x > 0:
    print("greater!")
elif x < 100:
    print("smaller!")
else:
    print("whatever's left!")
print("moving on")
```

Our code:

```
x = -101
```

Python displays:

```
smaller!
moving on
```

Selection statements

```
if x > 0:  
    print("greater!")  
elif x < 100:  
    print("smaller!")  
else:  
    print("whatever's left!")  
print("moving on")
```

Our code:

```
x = -5
```

Python displays:

```
whatever's left!  
moving on
```