Chapter 3 - Conditionals

Conditionals

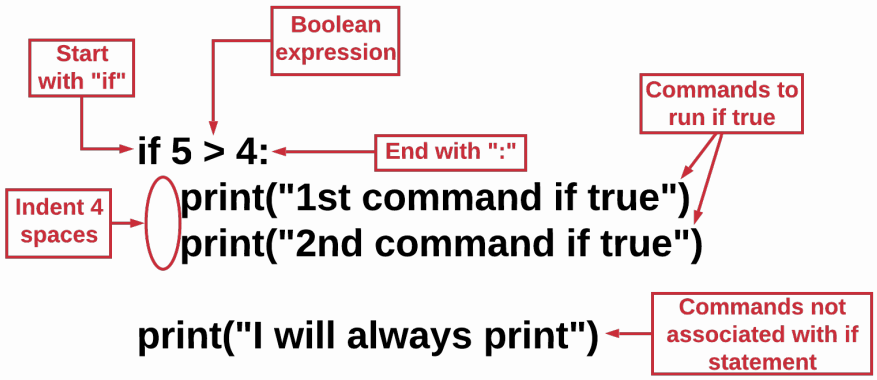
If Statement

Learning Objectives

- **Describe if statement syntax (especially the whitespace)**
- **Use a conditional statement to make decisions**

If Statement Syntax

If Statement Syntax



If Statement Syntax

Conditionals are pieces of code that make a decision about what the program is going to do next. The most common conditional is the if statement.

If statements in Python must contain the following items:
* the keyword `if`
* a boolean expression
* a colon
* 4 spaces of indentation for all lines of code that will run if the boolean expression is true.

```
if 5 > 4:
    print("1st command if true")
    print("2nd command if true")
```

Code Visualizer

If Statement

If Statement

If statements test to see if a certain condition is true. If yes, then a specific commands are run. The simple if statement does not do anything if the boolean expression is false.

```
if 7 != 10:
    print("The above statement is true")
print("This is not related to the if statement")
```

Code Visualizer

challenge

What happens if you:

- Change `!=` to `==`?
- Change `7 == 10` to `True`?
- Change `True` to `False`?
- Remove the indentation on line 2?

Code Visualizer

Testing Multiple Cases

You will find yourself needing to test the same variable multiple times. Be sure that you set up your conditionals to test **all** possible values of the variable.

```
grade = 90

if grade > 70:
    print("Congrats, you passed the class")

if grade < 70:
    print("Condolences, you did not pass the class")
```

Code Visualizer

challenge

What happens if you:

- Change `grade` to `60`?
- Change `grade` to `70`?
- Change `grade > 70` to `grade >= 70`?

Code Visualizer