PYTHON FUNDAMENTALS

What if

LEARNING OBJECTIVES

- To understand if/else syntax
- To understand and use comparison operators
- To write programs with single and multiple conditions

What f?

Imagine there's some music on

How do you feel about the music?

Stupid question!

Depends on what the music is!

```
music = "classical"
if music == "classical":
    print("Oh no it's that classical again")
elif music == "no music":
    print("Arh, peace and quiet")
else:
    print("Nice and noisy")
```

Have you noticed that the code is formatted really nicely?

It's not by accident. Python is whitespace dependent.

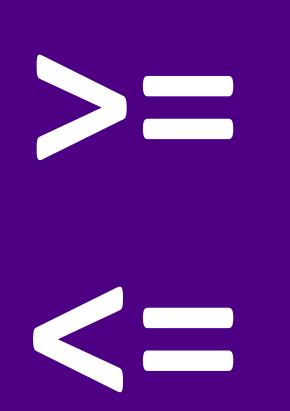
That sounds fancy but it basically means it matters where there are indents and new lines

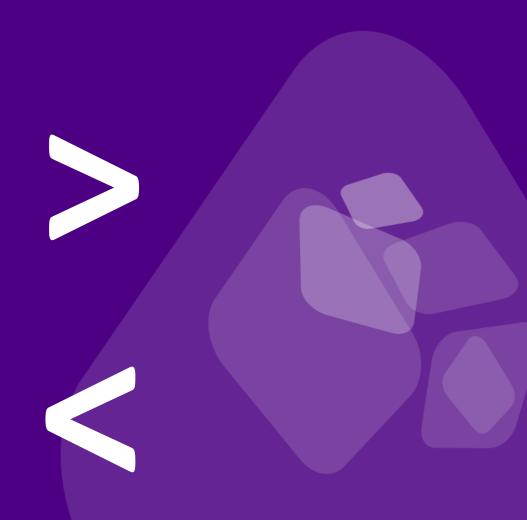
```
if condition1:
    #do this
elif condition2:
    #do this
else:
    #if nothing else matched do this
```

```
if music == "classical":
    print("Oh no it's that classical again")
```

Comparison Operators

```
== Equal
L= Not equal
```





```
music = "classical"
if music == "classical":
    print("Oh no it's that classical again")
elif music == "no music":
    print("Arh, peace and quiet")
else:
    print("Nice and noisy")
```



To VSC

Activity:

Create a variable called age.

Write an if statement that logs "Yes I can serve you" if age is greater than 17 and else logs "You aren't old enough".

```
if condition1:
    #do this
else:
    #if nothing else matched do this
```

Possible solution

```
age = 20
if age > 17:
    print("Yes I can serve you!")
else:
    print("You aren't old enough!")
```

And onto the next thing

```
place = "MCR"
weather = "Cloudy"
if place == "MCR" and weather == "Sunny":
    print("Check again")
elif place == "MCR" and weather == "Rain":
    print("Obvs")
else:
    print("What it isn't raining?")
```

Activity:

Take your if statement and add a variable called country.

Now check if age > 17 and country == "UK"

Possible solution (1)

```
age = 20
country = "UK"
if age > 17 and country == "UK":
    print("Yes I can serve you")
elif age > 17 and country != "UK":
    print("Where are you?")
else:
    print("You aren't old enough")
```

Possible solution (2)

```
age = 20
country = "UK"
if age > 17 and country.lower() == "uk":
    print("Yes I can serve you")
elif age > 17 and country.lower() != "uk":
    print("Where are you?")
else:
    print("You aren't old enough")
```

Or not?

```
day = "Saturday"
if day == "Saturday" or day == "Sunday":
    print("It's weekend!")
else:
    print("When's weekend?")
```

```
day = "Saturday"
                                false
              true or
if day == "Saturday" or day == "Sunday":
    print("It's weekend!")
else:
    print("When's weekend?")
```

In the condition we have

expression

To Be

Evaluated

logicalOperator

and/or

expression

To Be

Evaluated

It's only logical

and

True and True —>
True and False —>
False and False —>

and

True and True —> True
True and False —> False
False and False —> False

or

True and True —>
True and False —>
False and False —>

or

True and True —> True
True and False —> True
False and False —> False

LEARNING OBJECTIVES

- To understand if/else syntax
- To understand and use comparison operators
- To write programs with single and multiple conditions

Pre-reading: modulus %

Some of the challenges below require some reading on the use of the modulus symbol %

This would be a starting point:

https://python-reference.readthedocs.io/en/latest/docs/operators/modulus.html

Challenge 1:

Create a variable called password.

Check how many letters are in the password, if there are less than 8 print that the password is too short. Otherwise print the password.

Challenge 2:

Create a variable called num.

Check if the variable is divisible by 3 or 5. If it is print "This number is divisible by 3 or 5" to the console. Otherwise log "This number is not divisible by 3 or 5".

Challenge 3:

Create a variable called num.

If num is divisible by 3 print "fizz", if it's divisible by 7 print "buzz", if it's divisible by both 3 and 7 print "fizz buzz". Otherwise print num.

Challenge 4:

Create a variable called word that takes a string.

Create an if statement that checks if the last letter is the same as the first. If it is return true, otherwise return false.

Challenge 5:

Create a variable called time, a variable called place_of_work and a variable called town_of_home.

Create an if statement that prints where someone is at times of the day. E.g. if the time is 7 I'm at home, at 8 I'm commuting, at 9 I'm at work.

Challenge 6:

Create two variables called num1 and num2.

Create an if statement that checks if the result of the sum is even. If it is, return a success message.

Extra Challenges

Challenge 7:

Create a variable called num.

Check if the number is a palindrome (looks the same forward as it does backwards e.g. 1001 or 20202).

Extra

Challenge 8:

Take the string

"jrfndklhgfndjkjlkgperfijfhdknsadcvjhiiohjfkledsopiuhgty ujwsdxcvhgfdjhiopiwquhejkdsoiufghedjwshi".

Find the index of a last vowel in the string.

Extra reading

Truthy and Falsey

Conditions can use Truthy and Falsey values for strings

Let's take this in:

```
print("What is your name?")
name = input()
if name:
    print("Hello {}, how are you?".format(name))
else:
    print("You did not give me your name!")
```

Let's take this in:

```
print("What is your name?")
name = input()
if name:
              If this string is a truthy value, so
    print
                                           rmat(name))
                 this condition is met.
else:
    print("You did not give me your name!")
```

Let's take this in:

```
print("What is your name?")
name = input()
   name:
            Blank string is falsey, and therefore
    print
                                               hame))
                  else will be executed.
else:
    print("You did not give me your name!")
```

Falsey values

- **Empty string**
- Value 0
- Floating point value 0.0

Everything else is Truthy

