Python Conditions and If statements

Python supports the usual logical conditions from mathematics:

- Equals: a == b
- Not Equals: a != b
- Less than: a < b
- Less than or equal to: a <= b
- Greater than: a > b
- Greater than or equal to: a >= b

In [1]:
```
a = 33
b = 200
if b > a:
  print("b is greater than a")
  print("ok")
```

```
b is greater than a
ok
```

Elif

The elif keyword is pythons way of saying "if the previous conditions were not true, then try this condition".

In the following example a is equal to b, so the first condition is not true, but the elif condition is true, so we print to screen that "a and b are equal".

In [3]:
```
a = 33
b = 32
if b > a:
  print("b is greater than a")
elif a == b:
  print("a and b are equal")
else:
  print("a > b")
```

```
a > b
```

Else

The else keyword catches anything which isn't caught by the preceding conditions.

In this example a is greater than b, so the first condition is not true, also the elif condition is not true, so we go to the else condition and print to screen that "a is greater than b".

In [5]:
```
a = 200
b = 33
if b > a:
  print("b is greater than a")
elif a == b:
  print("a and b are equal")
else:
  print("a is greater than b")
```

```
a is greater than b
```

Another example:

In [6]:
```
a = 200
b = 33
if b > a:
  print("b is greater than a")
else:
  print("b is not greater than a")
```

```
b is not greater than a
```

And

The and keyword is a logical operator, and is used to combine conditional statements:

In [4]:
```
a = 200
b = 33
c = 500
if a > b and c > a:
  print("Both conditions are True")
```

```
Both conditions are True
```

Or

The or keyword is a logical operator, and is used to combine conditional statements:

In [9]:
```
a = 200
b = 33
c = 500
if a > b or a > c:
  print("At least one of the conditions is True")
```

```
At least one of the conditions is True
```

Nested If

You can have if statements inside if statements, this is called nested if statements.

In [11]:
```
x = 41

if x > 10:
  print("Above ten,")
  if x > 20:
    print("and also above 20!")
  else:
    print("but not above 20.")
```

```
Above ten,
and also above 20!
```

In [ ]:
```

```