

*Tags: Logical AND, Operators, Logical OR, Logical NOT

Logical AND

The `and` operator will evaluate to True only if both the left and right sides **BOTH** evaluate to True, if both are not true it defaults to false

```
'a' == 'a' and 1 < 5  
True
```

```
age = 20  
if age > 18 and age < 21:  
    print("You can enter the venue but cannot drink.")  
  
# Could also be written using nested conditionals:  
# if age > 18:  
#     if age < 21:  
#         print("You can enter the venue but cannot drink.")
```

Logical OR

The `or` operator will evaluate to True if one or both the left or right sides evaluate to True

```
'a' == 'b' or 1 < 5  
True
```

- only ONE side has to be true for the entire thing to be true
- the only time we get false is when both sides are false

```
day = input("what day of the week is it? ")  
  
if day == 'saturday' or day == 'sunday':  
    print("it's the weekend!")  
else:  
    print("ugh it's a workday :(")  
  
# Another example:  
age = int(input("how old are you? "))  
if age < 5 or age >= 65:  
    print("you get in for free!")  
else:  
    print("that will be $5")
```

Logical Not

The `not` operator changes True to False and False to True. It negates expressions.

- Flips expression, we usually use `not` to rephrase our logic and make it simpler to understand.

```
1 < 5
True

not 1 < 5
False
```

```
year = input("what year were you born in? ")

if not year.isnumeric():
    year = input("That isn't a number. Try again please! what year were you
born in? ")

year = int(year)

print(f"You were born {2022-year} years ago")
```