

## Boolean expressions

- Expression that is either True or False.
- Operator (`==`) which compares two operands and produces True if they are equal & False otherwise.
- True and False are special values that belong to the class `boolean`, they are not strings.

True



1

False



0

(=) operator is one of the comparison operators.

= → Assignment  
 == → Comparison

< → ✗  
 > → ✗  
 <= → ✓  
 >= → ✓

$x \neq y$	# $x$ is not equal to $y$
$x > y$	# $x$ is greater than $y$
$x < y$	# $x$ is less than $y$
$x >= y$	# $x$ is greater than <u>or</u> equal to $x$
$x <= y$	# $x$ is less than or equal to $y$ .
$x \text{ is } y$ ↓ Reserved word	# $x$ is the same as $y$
$x \text{ is } \underline{\text{not}} \ y$ ↓ Res. word	# $x$ is not the same as $y$

<u>OR</u>		
<u>x</u>	<u>y</u>	<u>Output</u>
T	T	T
T	F	T
F	T	T
F	F	F

# logical operators

Three logical operators : 1. And

2. Or

3. Not

x	y	<u>And</u>	Output
T	F		F
F	T		F
T	T		T
F	F		F

x	y	<u>OR</u>	Output
T	F		T
F	T		T
T	T		T
F	F		F

x	<u>NOT</u>	Output
T		F
F		T

For AND

When both are True, the only the result will be True

For OR

When atleast one is True, the result will be True.

For NOT

When ever it is False, the result is True.

Whenever it is True, the result is false.