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# **Python Operators**

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## **Python Operators**

Operators are used to perform operations on variables and values.

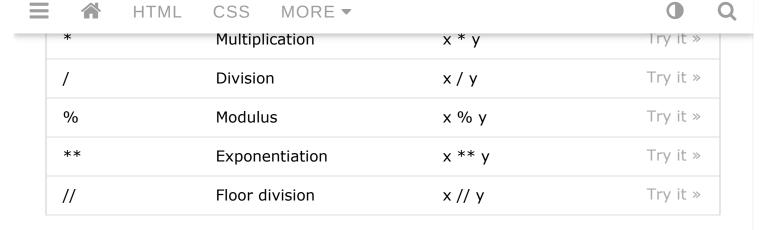
Python divides the operators in the following groups:

- Arithmetic operators
- Assignment operators
- Comparison operators
- · Logical operators
- · Identity operators
- · Membership operators
- · Bitwise operators

# Python Arithmetic Operators

Arithmetic operators are used with numeric values to perform common mathematical operations:

| Operator | Name     | Example | Try it   |
|----------|----------|---------|----------|
| +        | Addition | x + y   | Try it » |



# **Python Assignment Operators**

Assignment operators are used to assign values to variables:

| Operator | Example | Same As    | Try it   |
|----------|---------|------------|----------|
| =        | x = 5   | x = 5      | Try it » |
| +=       | x += 3  | x = x + 3  | Try it » |
| -=       | x -= 3  | x = x - 3  | Try it » |
| *=       | x *= 3  | x = x * 3  | Try it » |
| /=       | x /= 3  | x = x / 3  | Try it » |
| %=       | x %= 3  | x = x % 3  | Try it » |
| //=      | x //= 3 | x = x // 3 | Try it » |
| **=      | x **= 3 | x = x ** 3 | Try it » |
| &=       | x &= 3  | x = x & 3  | Try it » |
| =        | x  = 3  | x = x   3  | Try it » |
| ^=       | x ^= 3  | x = x ^ 3  | Try it » |
| >>=      | x >>= 3 | x = x >> 3 | Try it » |
| <<=      | x <<= 3 | x = x << 3 | Try it » |





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# Python Comparison Operators

Comparison operators are used to compare two values:

| Operator | Name                     | Example | Try it   |
|----------|--------------------------|---------|----------|
| ==       | Equal                    | x == y  | Try it » |
| !=       | Not equal                | x != y  | Try it » |
| >        | Greater than             | x > y   | Try it » |
| <        | Less than                | x < y   | Try it » |
| >=       | Greater than or equal to | x >= y  | Try it » |
| <=       | Less than or equal to    | x <= y  | Try it » |

# **Python Logical Operators**

Logical operators are used to combine conditional statements:

| Operator | Description   | Example                 | Try it   |
|----------|---|-------------------------|----------|
| and      | Returns True if both statements are true                | x < 5 and $x < 10$      | Try it » |
| or       | Returns True if one of the statements is true           | x < 5  or  x < 4        | Try it » |
| not      | Reverse the result, returns False if the result is true | not(x < 5  and  x < 10) | Try it » |

## **Python Identity Operators**





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| Operator | Description  | Example    | Try it   |
|----------|--|------------|----------|
| is       | Returns True if both variables are the same object     | x is y     | Try it » |
| is not   | Returns True if both variables are not the same object | x is not y | Try it » |

# **Python Membership Operators**

Membership operators are used to test if a sequence is presented in an object:

| Operator | Description  | Example    | Try it   |
|----------|--|------------|----------|
| in       | Returns True if a sequence with the specified value is present in the object     | x in y     | Try it » |
| not in   | Returns True if a sequence with the specified value is not present in the object | x not in y | Try it » |

# Python Bitwise Operators

Bitwise operators are used to compare (binary) numbers:

| Operator | Name | Description                                     |
|----------|------|---|
| &        | AND  | Sets each bit to 1 if both bits are 1           |
| I        | OR   | Sets each bit to 1 if one of two bits is 1      |
| ^        | XOR  | Sets each bit to 1 if only one of two bits is 1 |
| ~        | NOT  | Inverts all the bits                            |

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Signed right shift

Shift right by pushing copies of the leftmost bit in from the left, and let the rightmost bits fall off

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## **Exercise:**

Multiply 10 with 5, and print the result.

print(10 5)

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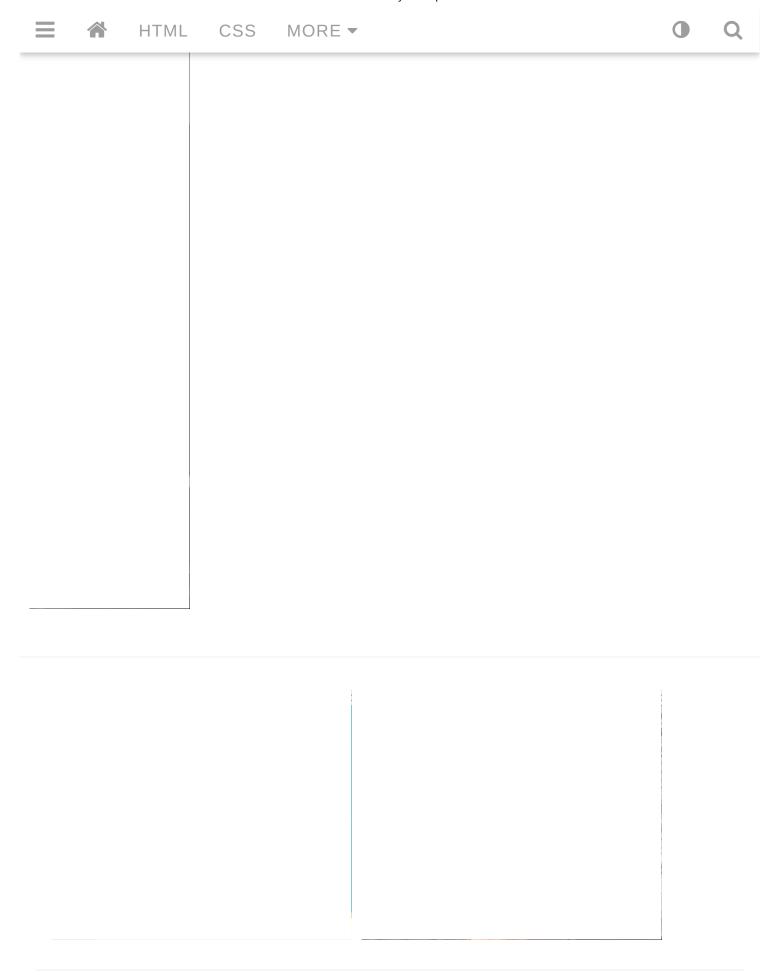
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