Operators are special symbols that perform operations on variables and values. For example,

**Types of Python Operators**

Here's a list of different types of Python operators that we will learn in this tutorial.

1. Arithmetic operators
2. Assignment Operators
3. Comparison Operators
4. Logical Operators
5. Bitwise Operators
6. Special Operators

**1. Python Arithmetic Operators**

Arithmetic operators are used to perform mathematical operations like addition, subtraction, multiplication, etc. For example,

sub = 10 - 5 # 5

Here, - is an arithmetic operator that subtracts two values or variables.

|  |  |  |
| --- | --- | --- |
| **operator** | **operation** | **example** |
| + | addition | 5 + 2 = 7 |
| - | subtraction | 4 - 2 = 2 |
| \* | multiplication | 2 \* 3 = 6 |
| \*\* | exponentiation ( power) | 4 \*\* 2 = 16 |
| / | float division | 4 / 2 = 2 |
| // | floor division | 10 // 3 = 3 |
| % | modulus (remainder) | 5 % 2 = 1 |

In the above example, we have used multiple arithmetic operators,

* + to add a and b
* - to subtract b from a
* \* to multiply a and b
* / to divide a by b
* // to floor divide a by b
* % to get the remainder
* \*\* to get a to the power b

**2. Python Assignment Operators**

Here's a list of different assignment operators available in Python.

|  |  |  |
| --- | --- | --- |
| **Operator** | **Example** | **Same As** |
| = | x = 5 | x = 5 |
| += | x += 3 | x = x + 3 |
| -= | x -= 3 | x = x - 3 |
| \*= | x \*= 3 | x = x \* 3 |
| /= | x /= 3 | x = x / 3 |
| %= | x %= 3 | x = x % 3 |
| //= | x //= 3 | x = x // 3 |
| \*\*= | x \*\*= 3 | x = x \*\* 3 |
| &= | x &= 3 | x = x & 3 |
| |= | x |= 3 | x = x | 3 |
| ^= | x ^= 3 | x = x ^ 3 |
| >>= | x >>= 3 | x = x >> 3 |
| <<= | x <<= 3 | x = x << 3 |
| := | print(x := 3) | x = 3 print(x) |

Here, we have used the += operator to assign the sum of a and b to a.

Similarly, we can use any other assignment operators according to the need.

**3. Python Comparison Operators**

Comparison operators compare two values/variables and return a boolean result: True or False. For example

Here, the > comparison operator is used to compare whether a is greater than b or not.

|  |  |  |
| --- | --- | --- |
| **Operator** | **Name** | **Example** |
| **==** | Equal | 2 == 2 |
| **!=** | Not equal | 4 != 2 |
| **>** | Greater than | 5 > 3 |
| **<** | Less than | 2 < 7 |
| **>=** | Greater than or equal to | x >= y |
| **<=** | Less than or equal to | x <= y |

**Note:** Comparison operators are used in decision-making and loops. We'll discuss more of the comparison operator and decision-making in later tutorials.

**4. Python Logical Operators**

Logical operators are used to check whether an expression is True or False. They are used in decision-making. For example,

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

More Resources:

1. <https://www.w3schools.com/python/python_operators.asp>
2. <https://www.freecodecamp.org/news/basic-operators-in-python-with-examples/>
3. <https://www.geeksforgeeks.org/python-operators/>