

PYTHON OPERATORS

[Document subtitle]



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# PYTHON OPERATORS

The Operator is a symbol that have a specific meaning and performs a specific operation between two operands.

They are generally used to perform operations on values and variables.

**OPERATORS:** These are the special symbols.

Eg- +, -, \*, / …….etc

**OPERAND:** It is the value on which the operator is applied.

Eg- a+b, a-b, a\*b, a/b …….etc

**TYPES OF OPERATORS:**

Python language supports the following types of operators −

* Arithmetic Operators
* Comparison (Relational) Operators
* Assignment Operators
* Logical Operators
* Bitwise Operators
* Membership Operators
* Identity Operators

**Arithmetic Operators:**

Arithmetic operators are used between two operands for a particular operation. There are many arithmetic operators. It includes the exponent (\*\*) operator as well as the + (addition), - (subtraction), \* (multiplication), / (divide), % (modulus), and // (floor division) operators.

|  |  |
| --- | --- |
| **Operator** | **Meaning** |
| **+ (Addition)** | It is used to add two operands.  For example, if a = 10, b = 10 => a+b = 20 |
| **- (Subtraction)** | It is used to subtract the second operand from the first operand. If the first operand is less than the second operand, the value results negative.  For example, if a = 20, b = 5 => a - b = 15 |
| **/ (divide)** | It returns the quotient after dividing the first operand by the second operand.  For example, if a = 20, b = 10 => a/b = 2.0 |
| **\* (Multiplication)** | It is used to multiply one operand with the other.  For example, if a = 20, b = 4 => a \* b = 80 |
| **% (modulus)** | It returns the reminder after dividing the first operand by the second operand.  For example, if a = 20, b = 10 => a % b = 0 |
| **\*\* (Exponent)** | As it calculates the first operand's power to the second operand, it is an exponent operator.  For example, if a = 5, b = 2 => a\*\*b = 25 |
| **// (Floor division)** | It provides the quotient's floor value, which is obtained by dividing the two operands.  For example, if a = 5, b = 2 => a//b = 2 |

**PROGRAM CODE:**

a = 5     # Initialize the value of a

b = 2        # Initialize the value of b   OUTPUT=

print('Addition of two numbers:',a+b)   7

print('Subtraction of two numbers:',a-b)   3

print('Multiplication of two numbers:',a\*b)   10

print('Division of two numbers:',a/b)   2.5

print('Reminder of two numbers:',a%b)   1

print('Exponent of two numbers:',a\*\*b)   25

print('Floor division of two numbers:',a//b) 2

**Precedence of Arithmetic Operators in Python**

1. P – Parenthesis
2. E – Exponentiation
3. M – Multiplication (Multiplication and division have the same precedence)
4. D – Division
5. A – Addition (Addition and subtraction have the same precedence)
6. S – Subtraction

**Relational Operators:**

Relational Operators are mainly used for comparison purposes. The Operators compare the values of the two operands and return a true or false Boolean value in Output.

The example of comparison operators are ==, !=, <=, >=, >, <.

|  |  |
| --- | --- |
| **Operator** | **Meaning** |
| == | If the value of two operands is equal, then the condition becomes true. |
| != | If the value of two operands is not equal, then the condition becomes true. |
| <= | The condition is true if the first operand is smaller than or equal to the second operand. |
| >= | The condition is true if the first operand is greater than or equal to the second operand. |
| > | If the first operand is greater than the second operand, then the condition becomes true. |
| **<** | If the first operand is less than the second operand, then the condition becomes true. |

**PROGRAM CODE:**

a = 4       # Initialize the value of a

b = 5        # Initialize the value of b   OUTPUT=

print('Two numbers are equal or not:',a==b)   False

print('Two numbers are not equal or not:',a!=b)   True

print('a is less than or equal to b:',a<=b)   False

print('a is greater than or equal to b:',a>=b)   True

print('a is greater b:',a>b)   False

print('a is less than b:',a<b)   True