

Different Kinds of Python Data Types

There are different types of data types in Python. Some built-in Python data types are:

Numeric data types: int, float, complex

String data types: str

Sequence types: list, tuple, range

Binary types: bytes, bytearray, memoryview

Mapping data type: dict

Boolean type: bool

Set data types: set, frozenset

Python Arithmetic Operators

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

Operator	Name	Example
+	Addition	$x + y$
-	Subtraction	$x - y$
*	Multiplication	$x * y$

/	Division	x / y
%	Modulus	x % y
**	Exponentiation	x ** y
//	Floor division	x // y

Python Assignment Operators

Assignment operators are used to assign values to variables:

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

<code>%=</code>	<code>x %= 3</code>	<code>x = x % 3</code>
<code>//=</code>	<code>x //= 3</code>	<code>x = x // 3</code>
<code>**=</code>	<code>x **= 3</code>	<code>x = x ** 3</code>
<code>&=</code>	<code>x &= 3</code>	<code>x = x & 3</code>
<code> =</code>	<code>x = 3</code>	<code>x = x 3</code>
<code>^=</code>	<code>x ^= 3</code>	<code>x = x ^ 3</code>
<code>>>=</code>	<code>x >>= 3</code>	<code>x = x >> 3</code>
<code><<=</code>	<code>x <<= 3</code>	<code>x = x << 3</code>
<code>:=</code>	<code>print(x := 3)</code>	<code>x = 3</code>

Python Comparison Operators

Comparison operators are used to compare two values:

Operator	Name	Example
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==	Equal	x == y
!=	Not equal	x != y
>	Greater than	x > y
<	Less than	x < y
>=	Greater than or equal to	x >= y
<=	Less than or equal to	x <= y

Python Logical Operators

Logical operators are used to combine conditional statements:

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)
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Python Identity Operators

Identity operators are used to compare the objects, not if they are equal, but if they are actually the same object, with the same memory location:

Operator	Description	Example
is	Returns True if both variables are the same object	x is y
is not	Returns True if both variables are not the same object	x is not y

Python Membership Operators

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

Operator	Description	Example
in	Returns True if a sequence with the specified value is present in the object	x in y

not in	Returns True if a sequence with the specified value is not present in the object	x not in y
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Python Bitwise Operators

Bitwise operators are used to compare (binary) numbers:

Operator	Name	Description	Example
&	AND	Sets each bit to 1 if both bits are 1	x & y
	OR	Sets each bit to 1 if one of two bits is 1	x y
^	XOR	Sets each bit to 1 if only one of two bits is 1	x ^ y
~	NOT	Inverts all the bits	~x
<<	Zero fill left shift	Shift left by pushing zeros in from the right and let the leftmost bits fall off	x << 2
>>	Signed right shift	Shift right by pushing copies of the leftmost bit in from the left, and let the rightmost bits fall off	x >> 2