



Python Operators

PYTHON PROGRAMMING COURSES

Including Python Compiler -Latvian

Operator and Operand

- Operators are used to perform operations on variables and values.
- In other words, operators are constructs that can manipulate values of operands.
- Operands are the data items.

6+8

- In the example above, 6 and 8 are considered operands while the + is the operator.



Types of Operators

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



Arithmetic Operators

- Are used with numeric values to perform common mathematical operations like like addition, subtraction, multiplication and division.



Operator	Name	Description	Syntax
+	Addition	Adds 2 operands	X+Y
-	Subtraction	Subtracts the second operand from the first	X-Y
*	Multiplication	Multiplies two operands	X*Y
/	Division	Divides the first operand by the second	X/Y
//	Floor Division	Divides first operand by the second and rounds answer to nearest whole number to the left in the number line	X//Y
%	Modulus	Returns the remainder of the division operation	X%Y
**	Exponential	Left operand raised to the power of right operand	X**Y



Assignment Operators

- Are used to assign values to variables.



Operator	Description	Syntax
=	Assign value of the right side of expression to left side operand	Z=X+Y
+=	Add right side operand with left side operand and then assign to left operand	Z+=X
-=	Subtract right operand from left operand and then assign to left operand	Z-=X
=	Multiply right operand with left operand and then assign to left operand	Z=X
/=	Divide left operand with right operand and then assign to left operand	Z/=X
%=	Takes modulus using left and right operands and assign result to left operand	Z%=X
=	Calculate exponent value using operands and assign value to left operand	Z=X
//=	Divide left operand with right operand and then assign the value(floor) to left operand	Z//=X



Comparison Operators

- Used to compare values.
- It returns either TRUE or FALSE according to the condition.



Operator	Name	Description	Syntax
>	Greater Than	True if left operand is greater than the right	X>Y
<	Less Than	True if left operand is smaller than the right	X<Y
==	Equal To	True if both operands are equal	X==Y
!=	Not Equal to	True if both operands are not equal	X/Y
>=	Greater Than or Equal to	True if left operand is greater than or equal to the right	X>=Y
<=	Less Than or Equal to	True if left operand is smaller than or equal to the right	X<=Y



Logical Operators

- These operators are used to combine conditional statements.
- Logical operators in Python are AND, OR and NOT.
- Return TRUE or FALSE as the output



Operator	Name	Description	Syntax
and	Logical AND	Returns true if both the operands are true	X and Y
or	Logical OR	True if either of the operands is true	X or Y
not	Logical NOT	True if operand is false	not Y



Bitwise Operators

& | ^ ~ << >>

- Used to compare integers.
- The integers are first converted to binary and then operations are performed on bit by bit.
- The result is of a decimal format.



Membership Operators

`in` `not in`

- Used to test if a value or variable is present in a sequence such as lists, strings or tuples.

`in`: returns true if a sequence with the specified value is present in the object

`not in`: returns true if a sequence with the specified value is not present in the object



Identity Operators

`is` `is not`

- Used to compare the memory location of two objects.

`is`: returns true if two variables point the same object

`is not`: It returns false if two variables point the same object



Operator Precedence

Highest



Lowest

Operator	Description
**	Exponentiation (raise to the power)
~ + -	Complement, unary plus and minus (method names for the last two are +@ and -@)
* / % //	Multiply, divide, modulo and floor division
+ -	Addition and subtraction
>> <<	Right and left bitwise shift
&	Bitwise 'AND'
^	Bitwise exclusive 'OR' and regular 'OR'
<= <> >=	Comparison operators
<> == !=	Equality operators
= %= /= //= -= += *= **=	Assignment operators
is is not	Identity operators
in not in	Membership operators
not or and	Logical operators



Lesson Summary

- Operator and Operand
- Types of Operators
- Operator Precedence



Thank You

