

python notes

Precedence Associativity of Operators :-

When you deal with operators in Python, It is essential to understand the concept of Python operator precedence and associativity.

1 Operator Precedence:-

We use this, in an expression with more than one operator with different precedence to determine which operation to perform first.

For example:- $10 + 20 * 30$

$10 + 20 * 30$
| |
Lower higher
Precedence Precedence

multiply will happen first as * has higher precedence

$10 + 600$

Now addition will happen as + has lower precedence

$10 + (20 * 30)$ ✓

for example:-

expr = 10 + 20 * 30
print (expr)

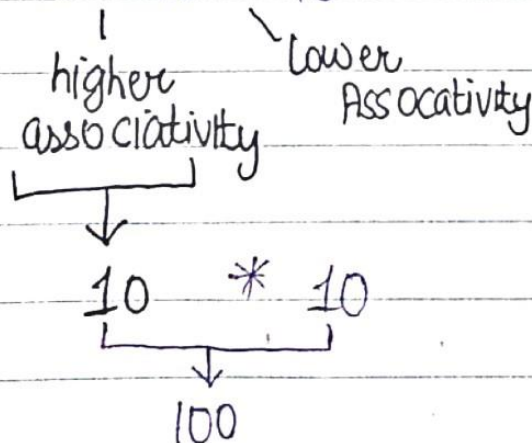
output = 610

2. Operator Associativity:- If an expression contains two or more operators with the same precedence then Operator Associativity is used to determine.

→ It can either be Left to Right or from Right to Left.

Example:- '*' and '/' have the same precedence and their associativity is left to right.

→ " 100 / 10 * 10 "



Example print (5 - 2 + 3)
(5 - 2) + 3

(Table)

Operator	Name	Associativity
()	Parenthesis	(left to right)
**	Exponent	(Right to left)
~	Bitwise NOT	(left to right)
*, /, %, //	Multiplication, Division, modulo, Floor Division	(left to right)
+, -	Addition, Subtraction	(left to right)
>>, <<	Bitwise right and left shift	(left to right)
&	Bitwise AND	(left to right)
	Bitwise OR	
^	Bitwise XOR	
==, !=, >, <, >=, <=	Comparison	(left to right)
=, +=, -=, /=, *=	Assignment	(Right to left)
is, is not, in, in not, and, or, not	Identity, Membership, Logical	(left to right)

Non associative Operators

Some operators like assignment operators and comparison operators do not have associativity in Python.

There are separate rules for sequence of this kind of operators and cannot be expressed as associativity.

for example:-

$x < y < z$ is equivalent to $[x < y \text{ and } y < z]$, and is evaluated from left to right

→ assignment:-

$x = y = z = 1$ is valid ✓

$x = y = z + = 2$ will result in error