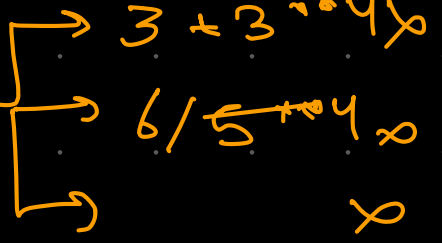
Precedence of Operator

In cases when more than one operator is present in a expression

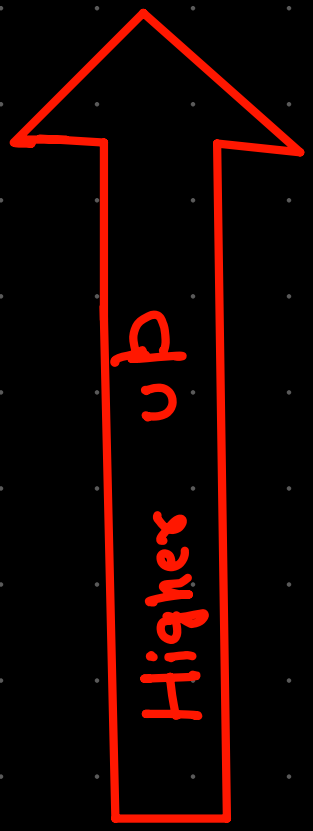
eg. 6 / 2 + 3 ** 4



To evaluate expression like above, we have **precedance** in all programming language.

Precedence order in Python

Operators
() Highest precedence
**
+x , -x, ~x
*, /, //, %
+, -
<<, >>
&
^
|
Is, is not, in, not in, <, <=, >, >=, ==, !=
Not x
And
Or
If else
Lambda
=, +=, -=, *=, /= Lowest Precedence



Example

1] (6 / 2) + (3 ** 4)

⇒ 3 + 81

⇒ 84

2] 25 / (3 + 2) ** 2

Associativity of Operators

When 2 operators have same precedence Python follows **Associativity**.

eg. `2 ** 3 ** 2`

`8 ** 2`

64

`2 ** 9`

512

Association is an order in which expression are evaluated.

For example, as multiplication and division have same precedence.
So if both of them are present in an expression, left one is evaluated first.

Associativity in Python

Operators	Associativity
() Highest precedence	Left - Right
**	Right - Left
+x , -x, ~x	Left - Right
*, /, //, %	Left - Right
+, -	Left - Right
<<, >>	Left - Right
&	Left - Right
^	Left - Right
|	Left - Right
Is, is not, in, not in, <, <=, >, >=, ==, !=	Left - Right
Not x	Left - Right
And	Left - Right
Or	Left - Right
If else	Left - Right
Lambda	Left - Right
=, +=, -=, *=, /= Lowest Precedence	Right - Left

2^{3^2}

2^9

512

Let us solve some examples.

- 2**3**2

512

- 5*2//3

- 10//3

⇒ 3.33

⇓

3