

Operator Precedence and Associativity

The computer scans an expression which contains the operators from left to right and performs only one operation at a time. The expression will be scanned many times to produce the result. The order in which various operations are performed is known as hierarchy of operations or operator precedence. Some of the operators of the same level of precedence are evaluated from left to right or right to left. This is referred to as associativity.

| Order | Operator | Meaning |
|-------|---------------------------------|---|
| 1 | () | Parentheses |
| 2 | ** | Exponentiation |
| 3 | +, -, ~ | Unary Plus, Unary Minus, Bitwise Not |
| 4 | *, /, //, % | Multiplication, Division, Floor Division, Modulus |
| 5 | +, - | Addition, Subtraction |
| 6 | <<, >> | Bitwise Left Shift, Bitwise Right Shift |
| 7 | & | Bitwise AND |
| 8 | ^ | Bitwise XOR |
| 9 | >, >=, <, <=, ==, != | Relational Operators |
| 10 | =, %=, /=, //=, -=, +=, *=, **= | Assignment Operators |
| 11 | is, is not | Identity Operators |
| 12 | in, not in | Membership Operators |
| 13 | not | Logical NOT |
| 14 | or | Logical OR |
| 15 | and | Logical AND |

- Parentheses
- Exponentiation
- Multiplication, Division, Modulus and Floor Division
- Addition and Subtraction
- Assignment

value = (1+1)*2**4//3+4-1
2*2**4//3+4-1
2*16//3+4-1
32//3+4-1
10+4-1
14-1
13