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Operators are special symbols or keywords used to perform operations on operands (variables and values).

a + b = c

+ = are the operators

a b are the operands

1) Arithmetic operators

Perform mathematical operations such as addition, subtraction, multiplication, division.

			a=5 b=3	
+	Addition	a+b	8	
−	Subtraction	a−b	2	
*	Multiplication	a*b	15	
/	Division	a/b	1.6	
%	Modulus	a%b	2	(returns remainder)
//	Floor division	a//b	1	
**	Exponentiation	a**b	125	

2) Relational operators is used to compare two values and return a Boolean result (True or False)

		a=34 b=87	
==	equal	a==b	False
!=	Not equal	a!=b	True
>	Greater than	a>b	False
<	Less than	a<b	True
>=	Greater than or equal to	a>=b	False
<=	less than or equal to	a<=b	True

3) logical operators are used to combine conditional statements

and	Returns True if both statements are true
or	Returns True if one of the statements is true
not	Reverse the result, returns False if result is true

a	b	and	or	nor	xor	xnor	nand
0	0	0	0	1	0	1	1
1	0	0	1	0	1	0	1
0	1	0	1	0	1	0	1
1	1	1	1	0	0	1	0

4) Bitwise operators used to perform operations on values and variables.

&	AND	- Returns 1 if both bits are 1 else 0
|	OR	- Returns 1 if either of the bits is 1 else 0
^	XOR	- Returns 1 if one of bits is 1 else return 0
~	NOT	- Inverts all the bits
<<	Zero fill left shift	
>>	Signed right shift	

Bitwise Right shift (>>) shifts the bits of the number to the right and fills 0 on void left (fills 1 in the case of a negative numbers) as a result.

eg a = 10 Binary - 0000 1010

a >> 1 0000 0101 = 5.

Bitwise left shift (<<) shifts the bits of the number to the left and fills 0 on void right

eg a = 5 Binary 0000 0101

a << 1 0000 1010 = 10.

5. Membership operators are used to compare the memory locations of two objects, not just equal but if they are same objects.

It checks whether a given value is a member of a sequence (such as strings, lists and tuples) or not.

in	Membership Returns true if a sequence with the specified value is present in object	a in b
not in	Returns true if sequence with specified value is not present	a not in b.

eg. grp = [1, 2, 3, 5, 8, 7] 9 not in grp

9 in grp True.

False

6. identity operators.

is	Returns True if both variables are same object	a is b
is not	Returns False if both variables are not same object.	a is not b

eg a = 5 b = 9 a is b False

a = 5 b = 5 a is b True