Operators

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Agenda

- Arithmetic operators.
- Relational operators.
- Logical operators.
- Bitwise operators.
- Assignment operators.
- Identity operators.
- Membership operators.

Operators

1. Operators are function in Python.

Operation	Syntax	Function
Addition	a + b	add(a, b)
Concatenation	seq1 + seq2	concat(seq1, seq2)
Subtraction	a - b	sub(a, b)
Division	a / b	truediv(a, b)
Division	a // b	floordiv(a, b)
Exponentiation	a ** b	pow(a, b)
Identity	a is b	is_(a, b)
Identity	a is not b	is_not(a, b)

Arithmetic operators

1. **Exponentiation operator (**)**
2. **True Division operator (/)**
3. **Floor Division operator (//)**
4. **Modulars operator (%)**
5. **Multiply operator (*)**
6. **Addition operator (+)**
7. **Subtraction operator (-)**

Exponentiation operator (**)

True Division operator (/)

- This operator return always real value.

Floor Division operator (//)

Modulars operator (%)

Relational operators

- Relational operator returns always True or False.

1. Greater than operator (>)
2. Less than operator (<)
3. Greater than equal to operator (>=)
4. Less than equal to operator (<=)
5. Equal to operator (==)
6. Dose not equal to operator (!=)

Relational operators

- When truth value is converted to int, it becomes 1 for True and 0 for False.
- Relational operators can also be used to compare two Strings.
- Only == and != operators can be used between two complex type values.
- == and != never yield Error.

Logical operators

- Logical operators must be written in lowercase only.
- Non empty string → True
- Empty string → False
- When operands are non-bool than results will Also be non-bool.

1. Not operator (not)
2. And operator (and)
3. Or operator (or)

1. not operator :-
   - not True → False
   - not False → True

2. and operator :-

- **True and True → True**
- **True and False → False**
- **False and True → False**
- **False and False → False**

3. or operator :-

- True or True → True
- True or False → True
- False or True → True
- False or False → False

Bitwise operators

1. And operator (&)
2. Or operator (|)
3. Xor operator (^)
4. Inversion operator (~)
5. Right Shift operator (>>)
6. Left Shift operator (<<)

Bitwise And operator (&)

Bitwise Or operator (|)

Bitwise Xor operator (^)

Bitwise Inversion operator (~)

Right Shift operator (>>)

Left Shift operator (<<)

Assignment operators

- =
- +=
- -=
- *=
- **=
- /=
- //=
- %=
- &=
- |=
- ^=
- >>=
- <<=

Identity operators

- is
- is not

- It results in True or False
- This operator check two object references are same or not.
- It means two variable are refer single object.

Example :-

Membership operators

- in
- in not

- **Those operators are applicable only on containers (iterable).**
- **It results in True or False**
- **int, float, complex, bool, are not iterable.**
- **str, range, list, tuple, set, dict, are iterable.**