Today I'll Cover :

1. Operator
2. Arithmetic Operator
3. Relational Operator
4. Equality Operator
5. Logical Operator
6. Bitwise Operator
7. Ternary Operator
8. Assignment Operator
9. Special Operator

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In the name of ALLAH,
the Most Beneficent, the Most Merciful

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Operators

Operators are the special symbols which perform certain operations.

- **Various types of Operators are as follows:**

1. Arithmetic Operator
2. Logical Operator
3. Bitwise Operator
4. Assignment Operator
5. Relational Operator
6. Special Operator

Arithmetic Operator

It is use to perform arithmetic operation.

+	Addition
-	Subtraction
*	Multiplication
/	Division
//	Floor Division
**	Exponent
%	Modulus

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Note:

- / operator always returns float value.
- // perform both floating point and integral arithmetic. If arguments are int type then result is int type. If any argument is float type then result is float type.

Note:

- We can use +,* operators for str type also.
- If we want to use + operator for str type then compulsory both arguments should be str type only otherwise we will get error.
- If we use * operator for str type then compulsory one argument should be int and other argument should be str type.

Relational Operator

It is use to perform relational operation.

>	Greater than
>=	Greater than equal to
<	Less than
<=	Less than equal to

- Relational operators can be applied for str types also. >, < not supported between instances of int and str.

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Note:

- Chaining of relational operators is possible. In the chaining, if all comparisons returns True then only result is True otherwise result is False.

Equality Operator

==, !=

Logical Operator

It is use to perform logical operation.

and	If both argument are True, then result is True
or	If at least one argument is True, then result is True
not	complement

Bitwise Operator

It is use to perform bitwise operation.

Only applicable of int and Boolean.

&	If both bit are 1 then result is 1 else 0.
|	If at least one bit is 1, result is 1 else 0.
^	If bits are different then result is 1 else 0.
~	Bitwise complement operator. 1 means 0 and 0 means 1.
<<	Bitwise left shift
>>	Bitwise right shift

Assignment Operator

- It is use to assign value to the variable.
- Chaining of assignment operators is possible.
- We can combine assignment operator with some other operator to form compound assignment operator.

Eg: `x += 10` means `x = x + 10`

- We can apply combine assignment with arithmetic and bitwise operator.

Ternary Operator

Syntax:-

```
first_value if condition else second_value
```

- **If condition is True then first_Value will be considered else second_Value will be considered.**
- **Nesting of ternary operator is possible.**

Special Operator

Python defines the following 2 special operators

1. Identity Operators
2. Membership operator

Identity Operator

We can use identity operators for address comparison.

There are 2 types of identity operator :-

1. **is**
2. **is not**

- ***object1* is *object2*** returns True if both r1 and r2 are pointing to the same object.
- ***object1* is not *object2*** returns True if both r1 and r2 are not pointing to the same object.

Note:-

is operator is used for address comparison where as == operator is used for content comparison.

Membership Operator

Membership operator is used to check whether a given object is present inside the given collection or not.

- **in** Returns ***True*** if the given object present in the specified Collection
- **not in** Returns ***True*** if the given object not present in the specified Collection

Operator Precedence

If multiple operators present then which operator will be evaluated first is decided by operator precedence.

()
**
~, -
*, /, //, %
+, -
<<, >>
&
^
|
Relational Operator
Assignment Operator
Identity Operator
Membership Operator
not
and
or
Assignment Operator

Highest Priority

Lowest Priority

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