Operators in Python

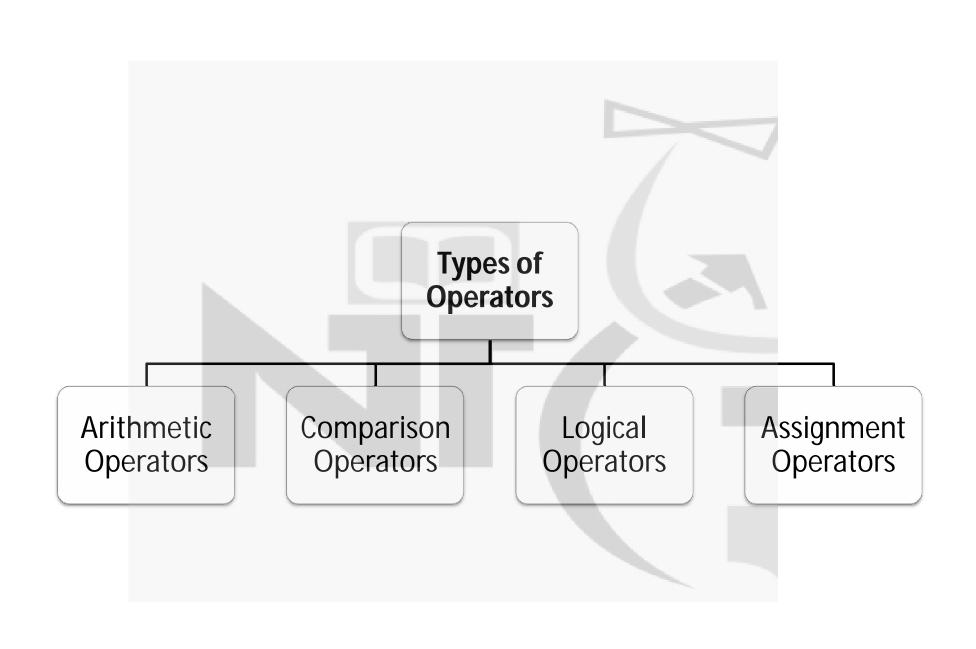
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AGENDA

- What Are Operators?
- Arithmetic Operators
- Comparison Operators
- Logical Operators
- Assignment Operators
- Practice Questions

What Are Operators?

- Definition: Operators are special symbols or keywords in Python that perform specific operations on values or variables.
- Examples: Addition (+), Equality (==), Logical AND (and), etc.



Arithmetic Operators

• Purpose: Perform mathematical operations.

Operator	Description	Example
+	Addition	5 + 3 = 8
	Subtraction	10 - 4 = 6
*	Multiplication	6 * 7 = 42
1	Division	10 / 2 = 5.0
%	Modulus (remainder)	10 % 3 = 1
**	Exponentiation	2 ** 3 = 8

Comparison Operators

 Purpose: Compare two values and return a Boolean result (True or False).

Operator	Description	Example
==	Equal to	5 == 5 → True
!=	Not equal to	5 != 3 → True
<	Less than	3 < 5 → True
>	Greater than	7 > 2 → True
<=	Less than or equal to	5 <= 5 → True
	Greater than or	
>=	equal to	4 >= 2 → True

Logical Operators

 Purpose: Combine multiple conditions and return a Boolean result.

Operator	Description	Example
and	Both conditions must be true	(5 > 3) and (8 > 6) → True
or	At least one condition must be true	$(5 > 10) \text{ or } (8 > 6) \rightarrow \text{True}$
not	Negates a condition	not(5 > 3) → False

Assignment Operators

 Purpose: Assign values to variables with optional modification.

Operator	Description	Example
-	Assigns value	x = 10
+=	Add and assign	$x += 5 \rightarrow x = 15$
-=	Subtract and assign	x -= 2 → x = 8
*=	Multiply and assign	x *= 3 → x = 30
/=	Divide and assign	$x \neq 2 \rightarrow x = 5$

Summary

- Operators are essential for performing operations in Python.
- Four types discussed:
 - Arithmetic
 - Comparison
 - Logical
 - Assignment

Practice Questions

- Write a Python program to calculate the square of a number using **.
- Use comparison and logical operators to check if a number is between 10 and 20.
- Increment a variable by 10 using the += operator.