Python Logical Operators

There are following logical operators supported by Python language. Assume variable a holds 10 and variable b holds 20 then

[Show Example]

Operator	Description	Example
and Logical AND	If both the operands are true then condition becomes true.	(a and b) is true.
or Logical OR	If any of the two operands are non-zero then condition becomes true.	(a or b) is true.
not Logical NOT	Used to reverse the logical state of its operand.	Not(a and b) is false.

Python Membership Operators

```
is_male = True
is_tall = False

if is_male and is_tall:
    print("You are a tall male")
elif is_male and not(is_tall):
    print("You are a short male")
elif not(is_male) and is_tall:
    print("You are not a male but are tall")
else:
    print("You are either not male or not tall or both")
```

Python Comparison Operators

These operators compare the values on either sides of them and decide the relation among them. They are also called Relational operators.

Assume variable a holds 10 and variable b holds 20, then −

[Show Example]

Operator	Description	Example
==	If the values of two operands are equal, then the condition becomes true.	(a == b) is not true.
!=	If values of two operands are not equal, then condition becomes true.	(a != b) is true.
<>	If values of two operands are not equal, then condition becomes true.	(a <> b) is true. This is similar to != operator.
>	If the value of left operand is greater than the value of right operand, then condition becomes true.	(a > b) is not true.
<	If the value of left operand is less than the value of right operand, then condition becomes true.	(a < b) is true.
>=	If the value of left operand is greater than or equal to the value of right operand, then condition becomes true.	(a >= b) is not true.
<=	If the value of left operand is less than or equal to the value of right operand, then condition becomes true.	(a <= b) is true.

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```
// Comparison operators
<    less than
>    greater than
<=   less than or equal
>=   greater than or equal
==  equal
!=  not equal

// Example
height >= 40
```

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Logical Operators

```
# Not Operator
x = not y #x gets the opposite of y

# And Operator
and_exp = x and y

# Or Operator
or_exp = x or y
```

```python
def max_num(num1, num2, num3):
    if num1 >= num2 and num1 >= num3:
        return num1
    elif num2 >= num1 and num2 >= num3:
        return num2
    else:
        return num3

print(max_num(300, 40, 5))
```

```python
num1 = float(input("Enter first number: "))
op = input("Enter operator: ")
num2 = float(input("Enter second number: "))

if op == "+":
    print(num1 + num2)
elif op == "-":
    print(num1 - num2)
elif op == "/":
    print(num1 / num2)
elif op == "*":
    print(num1 * num2)
else:
    print("Invalid operator")
```