**Operators task**

**Task 1: Arithmetic Operators**

1. Create two variables a and b with numeric values.

2. Calculate the sum, difference, product, and quotient of a and b.

3. Print the results.

1. a = 5

b = 3

1. resultSum = a+b

resultSubtraction = a-b

resultProduct = a\*b

resultQuotient = a/b

1. print(resultSum)  
   print(resultSubtraction)  
   print(resultProduct)  
   print(resultQuotient)

output is :

8

2

1.6666666666666667

**Task 2: Comparison Operators**

Print the results of each comparison.  
  
1. Equal to (==)  
a = 5  
b = 5  
result = a == b  
print(result) # Output: True  
  
2. Not equal to (!=)  
a = 5  
b = 3  
result = a != b  
print(result) # Output: True  
  
3. Greater than (>)  
a = 5  
b = 3  
result = a > b  
print(result) # Output: True  
  
4. Less than (<)  
a = 5  
b = 7  
result = a < b  
print(result) # Output: True  
  
5. Greater than or equal to (>=)  
a = 5  
b = 5  
result = a >= b  
print(result) # Output: True  
  
6. Less than or equal to (<=)  
a = 5  
b = 7  
result = a <= b  
print(result)

**Task 3: Logical Operators**  
1. AND  
a = True  
b = False  
result = a and b  
print(result) # Output: False  
  
2. OR  
a = True  
b = False  
result = a or b  
print(result) # Output: True  
  
3.NOT  
a = True  
result = not a  
print(result) # Output: False

**Task 4: Assignment Operators**  
1. Assign (=)  
x = 10  
print(x) # Output: 10  
  
2. Add and Assign (+=)  
x = 7  
x += 3  
print(x) # Output: 10  
  
3. Subtract and Assign (-=)  
x = 13  
x -= 3  
print(x) # Output: 10  
  
4. Multiply and Assign (\*=)  
x = 5  
x \*= 2  
print(x) # Output: 10  
  
5. Divide and Assign (/=)  
x = 20  
x /= 2  
print(x) # Output: 10  
  
# 6. Modulus and Assign (%=)  
x = 10  
x %= 3  
print(x) # Output: 1

**Task 5: Bitwise Operators**

# 1. AND (&)  
a = 5 # In binary: 0101  
b = 3 # In binary: 0011  
  
result = a & b # Performs bitwise AND  
print(result) # Output: 1 (In binary: 0001)  
  
# 2. OR (|)  
a = 5 # In binary: 0101  
b = 3 # In binary: 0011  
  
result = a | b # Performs bitwise OR  
print(result) # Output: 7 (In binary: 0111)  
  
# 3. XOR (^)  
a = 5 # In binary: 0101  
b = 3 # In binary: 0011  
  
result = a ^ b # Performs bitwise XOR  
print(result) # Output: 6 (In binary: 0110)  
  
# 5. Left Shift (<<)  
a = 5 # In binary: 0101  
  
result = a << 1 # Shifts bits of a to the left by 1  
print(result) # Output: 10 (In binary: 1010)  
  
# 6. Right Shift (>>)  
a = 5 # In binary: 0101  
  
result = a >> 2 # Shifts bits of a to the right by 1  
print(result) # Output: 2 (In binary: 0010)

**Task 6: Identity and Membership Operators**

# 1. is  
a = [1, 2, 3]  
b = a  
  
result = a is b  
print(result) # Output: True  
  
a = [1, 2, 3]  
b = [1, 2, 3]  
  
result = a is b  
print(result) # Output: False  
  
# 2. is not  
a = [1, 2, 3]  
b = [1, 2, 3]  
  
result = a is not b  
print(result) # Output: True  
  
a = [1, 2, 3]  
b = a  
  
result = a is not b  
print(result) # Output: False

**# IN**

**Check if an element is in the list using 'in'**

my\_list = [1, 2, 3, 4, 5, 6]  
element = 7  
if element in my\_list:  
 print("yes")  
else:  
 print("no")

**Check if an element is not in the list using 'not in'**

my\_list = [1, 2, 3, 4, 5, 6]  
element = 7  
if element not in my\_list:  
 print("yes")  
else:  
 print("no")