What is operator?

Operator is a symbol that is used to perform operations according to user requirement.

Types :-

1. Arithmetic – (+ , - , * , / , %)
2. Relational – (< , > , >= , <= , != , ==)
3. Logical – (&& , || , !)
4. Increment & Decrement (Pre & Post)
5. Assignment – (Simple[=], Compound[+=, -=, etc])
6. Bitwise (AND, OR, XOR, Complement)
7. Ternary Operator

Bitwise (Binary Concept)

AND Truth Table

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

OR Truth Table

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

XOR Truth Table

A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

NOT Truth Table

A	B
0	1
1	0

1. Bitwise OR (|)

This operator is a binary operator, denoted by '|'. It returns bit by bit OR of input values, i.e., if either of the bits is 1, it gives 1, else it shows 0.

a = 5 = 0101 (In Binary)

b = 7 = 0111 (In Binary)

Bitwise OR Operation of 5 and 7

0101

| 0111

_____

0111 = 7 (In decimal)

2. Bitwise AND (&)

This operator is a binary operator, denoted by '&.' It returns bit by bit AND of input values, i.e., if both bits are 1, it gives 1, else it shows 0.

a = 5 = 0101 (In Binary)

b = 7 = 0111 (In Binary)

Bitwise AND Operation of 5 and 7

0101

& 0111

_____

0101 = 5 (In decimal)

3. Bitwise XOR (^)

This operator is a binary operator, denoted by '^.' It returns bit by bit XOR of input values, i.e., if corresponding bits are different, it gives 1, else it shows 0.

a = 5 = 0101 (In Binary)

b = 7 = 0111 (In Binary)

Bitwise XOR Operation of 5 and 7

0101

^ 0111

_____

0010 = 2 (In decimal)

4. Bitwise Complement (~)

This operator is a unary operator, denoted by '~.' It returns the one's complement representation of the input value, i.e., with all bits inverted, which means it makes every 0 to 1, and every 1 to 0.

a = 7 = 0101 (In Binary)

Bitwise Complement Operation of 5

~ 0111

_____

1000 = 8 (In decimal)