

# Bitwise Operators in Hindi - Python in Hindi

 [hindilearn.in/tut/python/bitwise-operators-in-hindi](https://hindilearn.in/tut/python/bitwise-operators-in-hindi)

## Bitwise Operators

Bitwise Operator	Sign
Bitwise AND	&
Bitwise OR	
Bitwise XOR	^
Bitwise Complement	~
Bitwise Left Shift	<<
Bitwise Right Shift	>>

a	b	a & b	a   b	a ^ b
0	0	0	0	0
0	1	0	1	1
1	1	1	1	0
1	0	0	1	1

Truth Table for &, |, ^

### Operation on AND(a&b)

Decimal Value	Binary Value
अगर a = 20, b = 12 हो तो,	
20	0 0 0 1 0 1 0 0
12	0 0 0 0 1 1 0 0

---

4	0 0 0 0 0 1 0
	0

### Operation on OR(a|b)

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Decimal Value	Binary Value
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अगर a = 20, b = 12 हो तो,

---

20	0 0 0 1 0 1 0
	0

---

12	0 0 0 0 1 1 0
	0

---

28	0 0 0 1 1 1 0
	0

---

### Operation on XOR(a^b)

---

Decimal Value	Binary Value
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---

अगर a = 20, b = 12 हो तो,

---

20	0 0 0 1 0 1 0
	0

---

12	0 0 0 0 1 1 0
	0

---

24	0 0 0 1 1 0 0
	0

---

### Binary Left Shift( << ) and Right Shift( >> )

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- Left Shift(<<) for e.g. a=20; /\* 0001 0100 \*/ a << 2 में numeric value के binary value में हर binary number को 2 binary numbers left side से shift करता है | for e.g.a=20; /\* 0001 0100 \*/ तो इसका 0101 0000 मतलब 80 हो जायेगा |
- Right Shift(>>) for e.g. a=20; /\* 0001 0100 \*/ ये Left shift से बिलकुल उलट है | Right Shift a>> 2 में numeric value के binary value में हर binary number को 2 binary numbers right side से shift करता है | for e.g.a=20; /\* 0001 0100 \*/ तो इसका 0000 0101 मतलब 5 हो जायेगा |

## Complement Operator (~)

- ये Operator सारे bit reverse करता है |
- ये Operator 0 को 1 कर देता है और 1 को 0 कर देता है |

### Operation on Complement( ~ )

Decimal Value	Binary Value
~12	0 0 0 0 1 1 0 0
243	1 1 1 1 0 0 1 1

यहाँ पर Output -13 आने के बजाय 243 आया ऐसा क्यों ?

2's Complement of 243 -(reverse of 243 in binary + 1)

### Operation on 2's Complement( ~ )

Decimal Value	Binary Value	2's Complement
243	1111 0011	-(0000 1100+1) = -(0000 1101) = - 13 <sub>(output)</sub>

For eg.

Source Code : Output

value of c is 4  
value of c is 28  
value of c is 24  
value of c is 80  
value of b is 5  
value of c is -13