

Python Bitwise Operators Example

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There are following Bitwise operators supported by Python language

Operator	Description	Example
& Binary AND	Operator copies a bit to the result if it exists in both operands	(a & b) (means 0000 1100)
Binary OR	It copies a bit if it exists in either operand.	(a b) = 61 (means 0011 1101)
^ Binary XOR	It copies the bit if it is set in one operand but not both.	(a ^ b) = 49 (means 0011 0001)
~ Binary Ones Complement	It is unary and has the effect of 'flipping' bits.	(~a) = -61 (means 1100 0011 in 2's complement form due to a signed binary number.
<< Binary Left Shift	The left operands value is moved left by the number of bits specified by the right operand.	a << = 240 (means 1111 0000)
>> Binary Right Shift	The left operands value is moved right by the number of bits specified by the right operand.	a >> = 15 (means 0000 1111)

Example

```
#!/usr/bin/python

a = 60          # 60 = 0011 1100
b = 13          # 13 = 0000 1101
c = 0

c = a & b;      # 12 = 0000 1100
print "Line 1 - Value of c is ", c

c = a | b;      # 61 = 0011 1101
print "Line 2 - Value of c is ", c

c = a ^ b;      # 49 = 0011 0001
print "Line 3 - Value of c is ", c

c = ~a;         # -61 = 1100 0011
print "Line 4 - Value of c is ", c

c = a << 2;     # 240 = 1111 0000
print "Line 5 - Value of c is ", c

c = a >> 2;     # 15 = 0000 1111
print "Line 6 - Value of c is ", c
```

When you execute the above program it produces the following result –

```
Line 1 - Value of c is 12
Line 2 - Value of c is 61
Line 3 - Value of c is 49
Line 4 - Value of c is -61
Line 5 - Value of c is 240
Line 6 - Value of c is 15
```

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