

Operators

Arthemetic operator

```
In [1]: x=5  
y=10
```

```
In [2]: x,y
```

```
Out[2]: (5, 10)
```

```
In [3]: x  
y
```

```
Out[3]: 10
```

```
In [4]: x+y
```

```
Out[4]: 15
```

```
In [5]: x-y
```

```
Out[5]: -5
```

```
In [6]: x*y
```

```
Out[6]: 50
```

```
In [7]: x/y
```

```
Out[7]: 0.5
```

```
In [8]: x//y
```

```
Out[8]: 0
```

```
In [9]: x%y
```

```
Out[9]: 5
```

```
In [10]: x**y
```

```
Out[10]: 9765625
```

```
In [12]: 100**2
```

```
Out[12]: 10000
```

```
In [ ]:
```

Assignment Operators

In [14]: `x+=2`

In [15]: `x`

Out[15]: `7`

In []:

In [18]: `x=10`

`x`

Out[18]: `10`

In [19]: `x+2`

Out[19]: `12`

In [21]: `x+=2`

In [22]: `x`

Out[22]: `14`

In [23]: `x-=2`

`x`

Out[23]: `12`

In [24]: `x*=3`

In [25]: `x`

Out[25]: `36`

In [26]: `x*2`

Out[26]: `72`

In [27]: `x/=2`

In [28]: `x`

Out[28]: `18.0`

In [29]: `x//=2`

In [30]: `x`

Out[30]: `9.0`

```
In [31]: y=20  
y//=2
```

```
In [32]: y
```

```
Out[32]: 10
```

```
In [ ]:
```

```
In [33]: y=40.5  
y//=2  
y
```

```
Out[33]: 20.0
```

```
In [ ]:
```

unary operator

```
In [35]: n=7
```

```
In [36]: m=- (n)
```

```
In [37]: m
```

```
Out[37]: -7
```

```
In [ ]:
```

```
In [38]: 5
```

```
Out[38]: 5
```

```
In [39]: -5
```

```
Out[39]: -5
```

```
In [ ]:
```

```
In [34]: ~7
```

```
Out[34]: -8
```

```
In [ ]:
```

Relational operators

```
In [40]: a=5  
b=6
```

```
In [41]: a<b
```

```
Out[41]: True
```

```
In [42]: a>b
```

```
Out[42]: False
```

```
In [44]: a==b
```

```
Out[44]: True
```

```
In [45]: a<=b
```

```
Out[45]: True
```

```
In [46]: a>=b
```

```
Out[46]: True
```

```
In [47]: a=5
```

```
In [48]: b=10
```

```
In [49]: a<=b
```

```
Out[49]: True
```

```
In [50]: a>=b
```

```
Out[50]: False
```

```
In [51]: a!=b
```

```
Out[51]: True
```

```
In [ ]:
```

Logial operator

```
In [52]: a=5
```

```
b=4
```

```
In [53]: a==b
```

```
Out[53]: False
```

```
In [54]: a!=b
```

```
Out[54]: True
```

```
In [55]: a
```

```
Out[55]: 5
```

```
In [56]: b
```

```
Out[56]: 4
```

```
In [60]: b=5
```

```
In [61]: b
```

```
Out[61]: 5
```

```
In [62]: a==b
```

```
Out[62]: True
```

```
In [64]: a
```

```
Out[64]: 5
```

```
In [66]: b=7
```

```
In [67]: b
```

```
Out[67]: 7
```

```
In [ ]:
```

```
In [ ]:
```

```
In [68]: a<8 and b<6
```

```
Out[68]: False
```

```
In [69]: a<8 or b<6
```

```
Out[69]: True
```

```
In [70]: a>8 and b>6
```

```
Out[70]: False
```

```
In [71]: a>8 or b>6
```

```
Out[71]: True
```

```
In [72]: x=False
```

```
x
```

```
Out[72]: False
```

```
In [73]: not x
```

```
Out[73]: True
```

In []:

unary operator

In [74]:

25

Out[74]: 25

In [75]:

bin(25)

Out[75]: '0b11001'

In [77]:

int(0b11001)

Out[77]: 25

In []:

In [78]:

oct(25)

Out[78]: '0o31'

In [79]:

int(0o31)

Out[79]: 25

In [80]:

0x9

Out[80]: 9

In [81]:

0xa

Out[81]: 10

In [82]:

0xb

Out[82]: 11

In [83]:

0xc

Out[83]: 12

In [84]:

0xd

Out[84]: 13

In [85]:

0xe

Out[85]: 14

In [86]:

0xf

Out[86]: 15

```
In [87]: 0xg
```

```
Cell In[87], line 1
  0xg
  ^
SyntaxError: invalid hexadecimal literal
```

```
In [ ]:
```

Bitwise operator

complement(~)

```
In [88]: print(bin(12))
print(bin(13))
```

```
0b1100
0b1101
```

```
In [89]: 12
```

```
Out[89]: 12
```

```
In [90]: ~12
```

```
Out[90]: -13
```

```
In [91]: ~10
```

```
Out[91]: -11
```

```
In [92]: 12 & 13
```

```
Out[92]: 12
```

```
In [95]: 35^40
```

```
Out[95]: 11
```

left shift <<: We gain the bit <<

right shift >>: We loose the bit >>

```
In [96]: 12 << 2
```

```
Out[96]: 48
```

```
In [97]: 1<<2
```

```
Out[97]: 4
```

```
In [98]: 10<<2
```

```
Out[98]: 40
```

```
In [99]: 10<<3
```

```
Out[99]: 80
```

```
In [100...]: 5<<2
```

```
Out[100...]: 20
```

```
In [101...]: 100<<3
```

```
Out[101...]: 800
```

```
In [ ]:
```

```
In [102...]: 10>>2
```

```
Out[102...]: 2
```

```
In [103...]: 100>>3
```

```
Out[103...]: 12
```

```
In [ ]:
```

swap two variables

```
In [104...]: a,b=5,6
```

```
In [108...]: print(a)  
print(b)
```

```
5
```

```
6
```

```
In [107...]: print(a), print(b)
```

```
5
```

```
6
```

```
Out[107...]: (None, None)
```

```
In [109...]: temp=a  
a=b  
b=temp
```

```
In [110...]: print(a)  
print(b)
```

6

5

```
In [111...]: a=a+b  
          b=a-b  
          a=a-b
```

```
In [112...]: print(a)  
          print(b)
```

5

6

```
In [ ]:
```

```
In [113...]: a=a^b  
          b=a^b  
          a=a^b
```

```
In [114...]: print(a)  
          print(b)
```

6

5

```
In [115...]: a,b=b,a
```

```
In [116...]: print(a)  
          print(b)
```

5

6

```
In [ ]:
```

```
In [ ]:
```