

Operators

Arithmetic 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 [ ]:
```

```
In [ ]:
```

```
In [ ]:
```

```
In [ ]:
```