

```
a=6
print(a)
type(a)
```

↔ 6  
int

```
a=5.6
print(a)
type(a)
```

↔ 5.6  
float

```
a=True
print(a)
type(a)
```

↔ True  
bool

```
a=6j
print(a)
type(a)
```

↔ 6j  
complex

```
a='p'
print(a)
type(a)
```

↔ p  
str

```
a = [1,5,4,8]
print(a)
type(a)
```

↔ [1, 5, 4, 8]  
list

```
a = (1,4,3)
print(a)
type(a)
```

↔ (1, 4, 3)  
tuple

```
a = {1,5,4,6,5,1,4,7}
print(a)
type(a)
```

↔ {1, 4, 5, 6, 7}  
set

```
a = {1:'python',2:'c',3:'c++'}
print(a)
type(a)
```

↔ {1: 'python', 2: 'c', 3: 'c++'}  
dict

```
camel case - pythonName, myNameIs
pascal = PythonName
snake = python_name
```

```
a,b,c = 5,6,7
a = b = c =10
a,b=b,a
```

```
def add1():
    global x
    x=10
print(x)
```

↔ 10

```
s = 'python'
print(s)
```

↔ python

```
print(f'my string is : {s}') f-string
```

↔ my string is : python

```
a = range(5)
print(a)
```

↔ range(0, 5)

```
#single line comment
'''multi
line
comment'''
```

```
"""multi
line comment"""
```

↔ 

operators : arithmetic, comparison, logical, identity, membership, assignment, bitwise

```
arithmetic : +,-,*,/,//, %, **
comparison : >,<,>,<=,==,!=
logical : and - &&, or - ||, not
identity : is, not is
membership : in, not in
assignment : a=5, a+=5, a*=5, a-=5, a%=5
bitwise : bitwise and - &, bitwise or |, bitwise not ~, left shift, right shift
```

5

↔ 5

5.6

↔ 5.6

```
l = []
t = ()
d = {}
s = set()
st = ""
```

```
#arithmetic
a = 15
b = 6
a+b
```

↔ 21

a-b

↔ 9

a\*b

↔ 90

a/b

↔ 2.5

a//b

↔ 2

a%b

↔ 3

a = 2

b=3

a\*\*b

↔ 8

#comparison : >,<,>=,<=,==,!=

a = 5

b = 6

a>b

↔ False

a = 15

b = 6

a>b

↔ True

a = 5

b = 6

a>=b

↔ False

a = 6

b = 6

a>=b

↔ True

a = 5

b = 6

a==b

↔ False

a= 5

b = 5

↔ File "<ipython-input-42-261b97a40c46>", line 3

a==b:

^

SyntaxError: invalid syntax

Next steps: [Fix error](#)

#logical : and - &&, or - ||, not - ~

```
a = True
b = False
a and b
```

↔ False

```
a = True
b = False
a or b
```

↔ True

not(a)

↔ False

#identity

```
a=6
a is not 6
```

↔ <>:3: SyntaxWarning: "is not" with a literal. Did you mean "!="?  
<>:3: SyntaxWarning: "is not" with a literal. Did you mean "!="?  
<ipython-input-61-3568a40fc9f3>:3: SyntaxWarning: "is not" with a literal. Did you mean "!="?  
a is not 6  
False

#membership operator

```
l = [1,2,3,4,5]
3 not in l
```

↔ False

#assignment

```
a=8
a
```

↔ 8

```
a+=8 = a = a+8
```

```
a
```

↔ 16

```
a=9
```

```
a**=2
```

```
a
```

↔ 81

```
a = 5 # 101
```

```
b = 6 # 110
```

```
a & b
```

↔ 4

```
a = 5 # 101
```

```
b = 6 # 110
```

```
a | b
```

↔ 7

#left shift operator

```
a = 5 # 00010100
```

```
a<<2
```

↔ 20

#left shift operator

```
a = 5 # 00000001
```

```
a>>2
```

```
→ 1
```

```
#bitwise not
```

```
~x = -(x+1)
```

```
→ File "<ipython-input-89-7b58af0da65e>", line 2
```

```
~x = -(x+1)
      ^
```

**SyntaxError:** cannot assign to expression here. Maybe you meant '==' instead of '='?

---

Next steps:

[Fix error](#)

```
~5
```

```
→ -6
```

```
00000101
```

```
11111010
```