

Walrus operator (:=) (OR) Assignment Expression operator

Walrus operator is introduced in python 3.8 version

This operator is used as an assignment operator as part of expression.

```
>>> a=10
>>> a
10
>>> b:=20
SyntaxError: invalid syntax
>>> a=5
>>> b=2
>>> c=(a+b)*(a-b)
>>> c
21
>>> c=(d=a+b)*(e=a-b)
SyntaxError: invalid syntax. Maybe you meant '==' or ':=' instead of
'='?
>>> c=(d:=a+b)*(e:=a-b)
>>> print(c,d,e)
21 7 3
```

Example:

```
# Write program to input name,3 subject marks
# calculate total,avg
```

```
name=input("Enter Name ")
sub1=int(input("Subject1Marks :"))
sub2=int(input("Subject2Marks :"))
sub3=int(input("Subject3Marks :"))
avg=(total:=sub1+sub2+sub3)/3
print(name,sub1,sub2,sub3,total,round(avg,2))
```

Output

```
Enter Name suresh
Subject1Marks :45
Subject2Marks :60
Subject3Marks :70
suresh 45 60 70 175 58.33
```

Example:

```
>>> a=(x:=5+2)*(y:=5-2)/(z:=3-1)
>>> a
10.5
>>> x
7
>>> y
3
>>> z
2
```

Conditional Operator

Conditional operator is used for creating conditional expression.

Conditional operator is a ternary operator and required 3 operands to perform operation.

Conditional operator is used to evaluate expression based on condition.

It is used for evaluating simple expressions or simple conditions.

Syntax:

Variable=Opr1 if opr2 else opr3

Opr1 □ It is an operand, which is executed if opr2 is True

Opr3 □ it is an operand, which is executed if opr2 is False
Opr2 □ condition or boolean expression

After evaluating it assigns result to variable

Example:

find max of two numbers

```
num1=int(input("Enter First Number "))
num2=int(input("Enter Second Number "))
num3=num1 if num1>num2 else num2
print(num1,num2,num3)
```

Output

```
Enter First Number 10
Enter Second Number 20
10 20 20
```

```
Enter First Number 30
Enter Second Number 20
30 20 30
```

Example:

```
>>> 100 if True else 200
100
>>> "PYTHON" if True else "JAVA"
'PYTHON'
>>> "PYTHON" if False else "JAVA"
'JAVA'
```

Example:

Write a program to input name and 2 subject marks

```
# find result (PASS/FAIL)

name=input("Name :")
sub1=int(input("Subject1Marks :"))
sub2=int(input("Subject2Marks :"))
result="PASS" if sub1>=40 and sub2>=40 else "FAIL"
print(result)
if sub1>=40 and sub2>=40:
    print("PASS")
else:
    print("FAIL")
```

Output

```
Name :suresh
Subject1Marks :40
Subject2Marks :90
PASS
PASS
```

```
Name :kishore
Subject1Marks :30
Subject2Marks :60
FAIL
FAIL
```

Example:

```
x="PYTHON" if False else "JAVA" if True else ".Net"
print(x)
y="PYTHON" if False else "JAVA" if False else ".Net"
print(y)
z="PYTHON" if True else "JAVA" if False else ".Net"
```

```
print(z)
```

Output

JAVA

.Net

PYTHON

Example:

Write a program to find max of 3 numbers

```
a=int(input("Enter First Number :"))
b=int(input("Enter Second Number :"))
c=int(input("Enter Third Number :"))
d=a if a>b and a>c else b if b>a and b>c else c
print(a,b,c,d)
```

Output

Enter First Number :30

Enter Second Number :20

Enter Third Number :10

30 20 10 30

Update Operators or Assignment Update Operators

Assignment update operators are binary operators and required 2 operands.

It is a single operator which performs two operations.

1. Binary Operation
2. Assignment

Operators	Description
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+=

```
a=10  
a=a+1 (OR) a+=1
```

Example:

```
a=10  
print(a)  
a+=1  
print(a)  
a+=5  
print(a)  
x=10  
y=20  
x+=y  
print(x,y)  
a=5  
b=2  
c=6  
c+=a+b  
print(a,b,c)  
x=5  
y=2  
z=3  
z+=x*y  
print(x,y,z)
```

Output

```
10  
11  
16  
30 20  
5 2 13  
5 2 13
```

--=	A=10 A-=5 (A=A-5)
=	A=10 A=5 (A=A*5)
/=	A=10 A/=5 (A=A/5)
//=	A=10 A//=2 (A=A//2)
%=	A=5 A%=3 (A=A%3)
=	A=10 A=2 (A=A**2)
>>=	A=10 A>>=2 (A=A>>2)
<<=	A=15 A<<=3 (A=A<<3)
&=	A=10 B=15 A&=B (A=A&B)
=	A=10 B=15 A =B (A=A B)
^=	A=10 B=15 A^=B (A=A^B)

Note: python does not support ++ and – operators (support by java,c,c++).

```
>>> a=100
```

```
>>> a++
```

SyntaxError: invalid syntax

```
>>> a--
```

SyntaxError: invalid syntax

```
>>> ++a
```

100

```
>>> --a
```

100

```
>>> +-a
```

-100

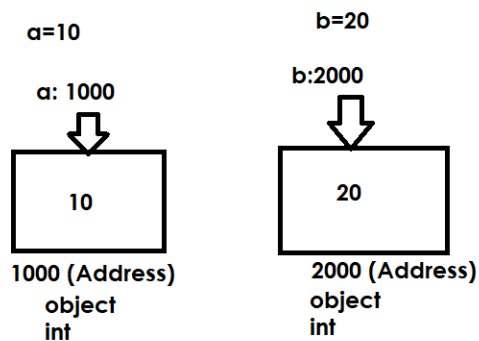
```
>>> -+a
```

-100

```
>>> ++++++++++++a
```

100

Identity Operator



What is class and object?

Python is an object oriented programming language.

Object oriented is programming paradigm (set of rules and regulations).

In object oriented programming data is represented as objects and every data type is class.

