

```
In [1]: #performing basic mathematical operations  
10+5
```

Out[1]: 15

```
In [3]: 10-5
```

Out[3]: 5

```
In [5]: 10*3
```

Out[5]: 30

```
In [7]: 10/4
```

Out[7]: 2.5

```
In [9]: 10//4
```

Out[9]: 2

```
In [11]: #knowing version of s/w  
import sys  
sys.version  
#import sys  
#sys.version
```

Out[11]: '3.12.4 | packaged by Anaconda, Inc. | (main, Jun 18 2024, 15:03:56) [MSC v.1929 64 bit (AMD64)]'

```
In [13]: sys.version_info
```

Out[13]: sys.version_info(major=3, minor=12, micro=4, releaselevel='final', serial=0)

```
In [15]: #printing statements  
print("hello world")
```

hello world:

```
In [17]: print("a")
```

a

```
In [23]: print(1)  
print(1.25)  
print((10+23j))
```

1
1.25
(10+23j)

```
In [31]: #performing add,sub,mult,div  
print(1+2)  
print(1-2)
```

```
print(2/3)
print(2*4)
print(4//3)
```

```
3
-1
0.6666666666666666
8
1
```

In [33]: *#variables: value or object or identifier*

```
a=10
b=13
c=a+b
d=a-b
e=a*b
f=a/b
print("the sum of a and b is:",c)
print("the sub of a and b is:",d)
print("the mult of a and b is:",e)
print("the div of a and b is:",f)
```

```
the sum of a and b is: 23
the sub of a and b is: -3
the mult of a and b is: 130
the div of a and b is: 0.7692307692307693
```

In [37]: `b==13`

Out[37]: True

In [41]: `13==b`

Out[41]: True

In [43]: `10==b`

Out[43]: False

In [47]: `b_=12`
`print(b_)`

```
12
```

In [51]: *#importing and printing keywords in python*

```
import keyword
keyword.kwlist
```

```
Out[51]: ['False',  
          'None',  
          'True',  
          'and',  
          'as',  
          'assert',  
          'async',  
          'await',  
          'break',  
          'class',  
          'continue',  
          'def',  
          'del',  
          'elif',  
          'else',  
          'except',  
          'finally',  
          'for',  
          'from',  
          'global',  
          'if',  
          'import',  
          'in',  
          'is',  
          'lambda',  
          'nonlocal',  
          'not',  
          'or',  
          'pass',  
          'raise',  
          'return',  
          'try',  
          'while',  
          'with',  
          'yield']
```

```
In [53]: len(keyword.kwlist)
```

```
Out[53]: 35
```

```
In [55]: #data types in python  
#1.int  
a=10  
type(a)
```

```
Out[55]: int
```

```
In [57]: print(type(a))
```

```
<class 'int'>
```

```
In [59]: b=2.5  
type(b)
```

```
Out[59]: float
```

```
In [61]: print(type(b))
```

```
<class 'float'>
```

```
In [63]: c="adil"  
type(c)
```

```
Out[63]: str
```

```
In [65]: print(type(c))
```

```
<class 'str'>
```

```
In [67]: d=(12+2j)  
type(d)
```

```
Out[67]: complex
```

```
In [69]: print(type(d))
```

```
<class 'complex'>
```

```
In [73]: #e0=1, e1=10, e2=100, 23=1000..  
f1=1e0  
f1
```

```
Out[73]: 1.0
```

```
In [75]: f2=2e1  
f2
```

```
Out[75]: 20.0
```

```
In [77]: f3=4e2  
f3
```

```
Out[77]: 400.0
```

```
In [79]: f4=7e3  
f4
```

```
Out[79]: 7000.0
```

```
In [81]: f5=0e4  
f5
```

```
Out[81]: 0.0
```

```
In [83]: #boolean data type  
#bool = True or False  
#True = 1  False = 0  
a=False  
print(a)
```

```
False
```

```
In [85]: b=True  
print(b)
```

True

```
In [87]: d=true  
print(d)
```

```
-----  
NameError                                Traceback (most recent call last)  
Cell In[87], line 1  
----> 1 d=true  
      2 print(d)  
  
NameError: name 'true' is not defined
```

```
In [89]: e=false  
print(e)
```

```
-----  
NameError                                Traceback (most recent call last)  
Cell In[89], line 1  
----> 1 e=false  
      2 print(e)  
  
NameError: name 'false' is not defined
```

```
In [91]: True+True
```

Out[91]: 2

```
In [93]: True-False
```

Out[93]: 1

```
In [95]: False-True
```

Out[95]: -1

```
In [97]: True+True+False-True-True-False
```

Out[97]: 0

```
In [99]: #complex data types  
c1=1+2j  
type(c1)
```

Out[99]: complex

```
In [101... c1.real
```

Out[101... 1.0

```
In [103... c1.imag
```

Out[103... 2.0

```
In [107... c2=20+3j
c3=c1-c2
print(c3)
```

(-19-1j)

```
In [109... #string
s="nit"
s
```

Out[109... 'nit'

```
In [111... type(s)
```

Out[111... str

```
In [113... print(type(s))
```

<class 'str'>

```
In [115... s1="hello pyhton"
s1
```

Out[115... 'hello pyhton'

```
In [123... s2=''' nit
          hello
          python'''
s2
```

Out[123... ' nit\n hello \n python'

```
In [125... s1
```

Out[125... 'hello pyhton'

```
In [127... #@accessing elements from left to right
#index starts from 0
s1[0]
```

Out[127... 'h'

```
In [129... s1[5]
```

Out[129... ' '

```
In [131... s1[4]
```

Out[131... 'o'

```
In [133... s1[6]
```

Out[133... 'p'

```
In [135... #accessing elements from right to left  
#index starts from -1  
s1[-1]
```

Out[135... 'n'

```
In [137... s1[-5]
```

Out[137... 'y'

```
In [139... s1[-7]
```

Out[139... ' '

```
In [141... s1[-9]
```

Out[141... 'l'

```
In [143... s1
```

Out[143... 'hello pyhton'

```
In [153... print(s1[0])  
print(s1[1])  
print(s1[2])  
print(s1[3])  
print(s1[4])  
print(s1[5])  
print(s1[6])  
print(s1[7])  
print(s1[8])  
print(s1[9])  
print(s1[10])  
print(s1[11])
```

h
e
l
l
o

p
y
h
t
o
n

```
In [157... #slicing is represnted as :  
s1[:] #prints all the elements
```

Out[157... 'hello pyhton'

```
In [161...] s1[2:7]#prints elments that are b/w the index 2 and 7 last element is given by(n-1)
```

```
Out[161...] 'llo p'
```

```
In [181...] s3="dataanalyst"  
s3
```

```
Out[181...] 'dataanalyst'
```

```
In [183...] s3[0:9]
```

```
Out[183...] 'dataanaly'
```

```
In [185...] s3[0:11]
```

```
Out[185...] 'dataanalyst'
```

```
In [187...] s3[0:13]
```

```
Out[187...] 'dataanalyst'
```

```
In [189...] s3[9:12]
```

```
Out[189...] 'st'
```

```
In [191...] s3[0:11:2]
```

```
Out[191...] 'dtaayt'
```

```
In [193...] len(s3)
```

```
Out[193...] 11
```

```
In [195...] s3[1:10:2]
```

```
Out[195...] 'aanls'
```

```
In [197...] s3[4:11:3]
```

```
Out[197...] 'alt'
```

```
In [199...] s3[5:11:4]
```

```
Out[199...] 'ns'
```

```
In [203...] s3[::]
```

```
Out[203...] 'dataanalyst'
```

```
In [215...] s3[-12:-1:5] #here (n-1)=(-1-1)=-2 last index elemnt is : s
```


Out[215... 'dn'

In []: