```python
import sys
import keyword
import operator
from datetime import datetime
import os
```

keywords

```python
print(keyword.kwlist)
```

```
['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']
```

```python
len(keyword.kwlist)
```

```
35
```

identifiers

```python
1var=10
```

```
  Cell In[25], line 1
    1var=10
     ^
SyntaxError: invalid decimal literal
```

```python
val2@=35
```

```
---------------------------------------------------------------------
-----
NameError                                 Traceback (most recent call
last)
Cell In[27], line 1
----> 1 val2@=35

NameError: name 'val2' is not defined
```

```python
import=125
```

```
  Cell In[29], line 1
    import=125
          ^
SyntaxError: invalid syntax
```

```python
"""
correct way of defining an identifier
```

```
(identifiers can be a combination of letters in lowercase(a to z) or
uppercase
"""
val2=10

print(val2)

10

val_=99
print(val_)

99
```

commments in python

```
#single line comment
val1=10
print(val1)

10

# multiple
#line
#comment
val1=10
print(val1)

10

'''
multiple line comment

'''
val1 =10
print(val1)

10

"""
multiple
line
comment
"""
val1=10
print(val1)

10

p=20
q=20
```

```
r=q
p , type(p) , hex(id(p))

(20, int, '0x7fff81ec2c18')

r, type(q),hex(id(q))

(20, int, '0x7fff81ec2c18')

r, type(q),hex(id(r))

(20, int, '0x7fff81ec2c18')

p=20
p=p+10
p

30
```

variable assignment

```
intvar=10
floatvar=2.57
strvar="python language"
print(intvar)
print(floatvar)
print(strvar)

10
2.57
python language
```

multiple assignments

```
intvar , floatvar ,strvar =10,2.57 ,"python language"
print(intvar)
print(floatvar)
print(strvar)

10
2.57
python language

p1=p2=p3=p4=44
print(p1,p2,p3,p4)

44 44 44 44
```

data types

```
val1=10
print(val1)
print(type(val1))
print(sys.getsizeof(val1))
print(val1,"is Integer?", isinstance(val1,int))

10
<class 'int'>
28
10 is Integer? True

val2=92.78
print(val2)
print(type(val2))
print(sys.getsizeof(val2))
print(val2,"is float?", isinstance(val2,float))

92.78
<class 'float'>
24
92.78 is float? True

val3=25+10j
print(val3)
print(type(val3))
print(sys.getsizeof(val3))
print(val3,"is complex?", isinstance(val3,complex))

(25+10j)
<class 'complex'>
32
(25+10j) is complex? True

sys.getsizeof(int())

28

sys.getsizeof(float())

24

sys.getsizeof(complex())

32
```

boolean

```
bool1=True
bool2=False
```

```
print(type(bool1))
print(type(bool2))

<class 'bool'>
<class 'bool'>

isinstance(bool1,bool)

True

bool(0)

False

bool(1)

True

bool(2)

True

bool(None)

False

bool(False)

False
```

strings

##string creation

```
str1="hello python"
print(str1)

hello python

mystr='hello world'
print(mystr)

hello world

mystr='''hello
      world '''
print(mystr)

hello
       world
```

```
mystr="""hello
        world"""
print(mystr)

hello
        world

mystr=('happy    '
        'monday     '
          'everyone    ')
print(mystr)

happy    monday     everyone

mystr2='woohoo     '
mystr2=mystr2*5
mystr2

'woohoo     woohoo     woohoo     woohoo     woohoo     '

len(mystr2)

50
```

string indexing

```
str1

'hello python'

str1[0]

'h'

str1[len(str1)-1]

'n'

str1[-1]

'n'

str1[6]

'p'

str1[5]

' '
```

string slicing

```
str1[0:5]
```

```
'hello'

str1[6:12]

'python'

str1[-4:]

'thon'

str1[-6:]

'python'

str1[:4]

'hell'

str1[:6]

'hello '
```

update & delete string

```
str1

'hello python'

str1[0:5]='holaa'

---------------------------------------------------------------------
-----
TypeError                                 Traceback (most recent call
last)
Cell In[146], line 1
----> 1 str1[0:5]='holaa'

TypeError: 'str' object does not support item assignment

del str1
print(srt1)

---------------------------------------------------------------------
-----
NameError                                 Traceback (most recent call
last)
Cell In[148], line 2
      1 del str1
----> 2 print(srt1)

NameError: name 'srt1' is not defined
```

```python
s1="hello"
s2="asif"
s3=s1+s2
print(s3)

helloasif

a=7
b=6
add=a+b
sub=a-b
mul=a*b
div=a/b
div1=a//b
mod=a%b
exp=a**b

print(add)
print(sub)
print(mul)
print(div)
print(div1)
print(mod)
print(exp)

13
1
42
1.1666666666666667
1
1
117649

a=19.8
b=12.2
add=a+b
sub=a-b
mul=a*b
div=a/b
div1=a//b
mod=a%b
exp=a**b

print(add)
print(sub)
print(mul)
print(div)
print(div1)
print(mod)
print(exp)
```

```
32.0
7.600000000000001
241.56
1.6229508196721314
1.0
7.600000000000001
6596526647892600.0

a=12+2j
b=14+4j
add=a+b
sub=a-b
mul=a*b

print(add)
print(sub)
print(mul)

(26+6j)
(-2-2j)
(160+76j)
```

relational

```
a=9
b=8
print(a>b)
print(a>=b)
print(a<=b)
print(a<b)
print(a==b)
print(a!=b)

True
True
False
False
False
True
```

logical

```
a=True
b=False
print(a and b)

False

print(b and a)
```

```
False
```

```python
print(a or b)
```

```
True
```

```python
print(b or a)
```

```
True
```

```python
print( not a)
```

```
False
```

```python
print( not b)
```

```
True
```

```python
n=1
print(n)
```

```
1
```

```python
m=-n
print(m)
```

```
-1
```

assignment

```python
x=2
x
```

```
2
```

```python
x=2
x=x+2
print(x)
```

```
4
```

```python
x+=2
print(x)
```

```
6
```

```python
x-=2
print(x)
```

```
4
```

```python
x-=2
print(x)
```

```
2

x*=2
print(x)

4

x/=2
print(x)

2.0

x//=2
print(x)

1.0

x**=2
print(x)

1.0
```