In [1]:
```
spam =1
spam
```

Out[1]: 1

In [2]:
```
2+2
```

Out[2]: 4

In [3]:
```
50-5*6
```

Out[3]: 20

In [4]:
```
(50-5*6)/4
```

Out[4]: 5.0

In [5]:
```
8/5
```

Out[5]: 1.6

In [6]:
```
17/3
```

Out[6]: 5.666666666666667

In [7]:
```
17//3
```

Out[7]: 5

In [8]:
```
17%3
```

Out[8]: 2

In [9]:
```
5*3+2
```

Out[9]: 17

In [10]:
```
5**2
```

Out[10]: 25

In [11]:
```
2**7
```

Out[11]: 128

In [12]:
```
width =20
height = 5*9
width*height
```

Out[12]: 900

In [13]:
```
n
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[13], line 1
----> 1 n

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

In [14]:
```
4*3.75-1
```

Out[14]: 14.0

In [15]:
```
tax = 12.5/100
price = 100.50
price * tax
```

Out[15]: 12.5625

In [16]:
```
tax = 12.5/100
price = 100.50
price * tax
price +_
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[16], line 4
      2 price = 100.50
      3 price * tax
----> 4 price +_

TypeError: unsupported operand type(s) for +: 'float' and 'str'
```

In [17]:
```
'spam eggs'
```

Out[17]: 'spam eggs'

In [18]:
```
"paris rabbit got your back:)!yay!"
```

Out[18]: 'paris rabbit got your back:)!yay!'

In [19]:
```
'1975'
```

Out[19]: '1975'

In [20]:
```
'doesn\'t'
```

Out[20]: "doesn't"

In [21]:
```
"doesn't"
```

Out[21]: "doesn't"

In [22]:
```
'"yes,"they said.'
```

Out[22]: '"yes,"they said.'

In [23]:
```
"\"yes,\"they said."
```

Out[23]: '"yes,"they said.'

In [24]:
```
'"Isn\'t,"they said.'
```

Out[24]: '"Isn\'t,"they said.'

In [25]:
```
s='First line.\nSecond line.'
s
```

Out[25]: 'First line.\nSecond line.'

In [26]:
```
print(s)
```

```
First line.
Second line.
```

In [27]:
```
print('c:"\some\name')
```

```
c:"\some
ame
```

```
<>:1: SyntaxWarning: invalid escape sequence '\s'
<>:1: SyntaxWarning: invalid escape sequence '\s'
C:\Users\HAI\AppData\Local\Temp\ipykernel_8232\90213051.py:1: SyntaxWarning: inva
lid escape sequence '\s'
  print('c:"\some\name')
```

In [28]:
```
print(r'c:\some\name')
```

```
c:\some\name
```

In [29]:
```
print("""\
      usage: thingy [OPTIONS]
      -h      Display this usage message
      -H      Hostname to connect to
      """)
```

```
usage: thingy [OPTIONS]
-h      Display this usage message
-H      Hostname to connect to
```

In [30]:
```
3 * 'un' + 'ium'
```

Out[30]: 'unununium'

In [31]:
```
'py' 'thon'
```

Out[31]: 'python'

In [32]:
```
text = ('put several strings with in parentheses'
        'to have them joined together.')
text
```

Out[32]: 'put several strings with in parenthesesto have them joined together.'

In [33]:
```
prefix = 'py'
prefix 'thon'
```

```
File"<stdin>", line 1
prefix 'thon'
```

```
  Cell In[33], line 2
    prefix 'thon'
           ^
SyntaxError: invalid syntax
```

In [34]:
```
('un' * 3) 'ium'
File"<stdin>", line 1
('un' * 3) 'ium'
```

```
  Cell In[34], line 1
    ('un' * 3) 'ium'
               ^
SyntaxError: invalid syntax
```

In [36]:
```
prefix = 'py'
prefix + 'thon'
```

Out[36]: 'python'

In [37]:
```
word = 'python'
word[0]
```

Out[37]: 'p'

In [38]:
```
word[5]
```

Out[38]: 'n'

In [39]:
```
word[-1]
```

Out[39]: 'n'

In [40]:
```
word[-2]
```

Out[40]: 'o'

In [41]:
```
word[-6]
```

Out[41]: 'p'

In [42]:
```
word[0:2]
```

Out[42]: 'py'

In [43]:
```
word[2:5]
```

Out[43]: 'tho'

In [44]:
```
word[:2]
```

Out[44]: 'py'

In [45]:
```
word[4:]
```

Out[45]: 'on'

In [46]:
```
word[-2:]
```

Out[46]: 'on'

In [47]:
```
word[:2] + word[2:]
```

Out[47]: 'python'

In [48]:
```
word[:4] + word[4:]
```

Out[48]: 'python'

In [49]:
```
word[42]
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[49], line 1
----> 1 word[42]

IndexError: string index out of range
```

In [50]:
```
word[0] = 'j'
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[50], line 1
----> 1 word[0] = 'j'

TypeError: 'str' object does not support item assignment
```

In [51]:
```
word[2:] = 'py'
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[51], line 1
----> 1 word[2:] = 'py'

TypeError: 'str' object does not support item assignment
```

In [52]:
```
'j' + word[1:]
```

Out[52]: 'jython'

In [53]:
```
word[:2] + 'py'
```

Out[53]: 'pypy'

In [54]:
```
s='supercalifragilisticexpialidocious'
len(s)
```

Out[54]: 34

In [55]:
```
squares=[1,4,9,16,25]
squares
```

Out[55]: [1, 4, 9, 16, 25]

In [56]:
```
squares[0]
```

Out[56]: 1

In [57]:
```
squares[-1]
```

Out[57]: 25

In [58]:
```
squares[-3:]
```

Out[58]: [9, 16, 25]

In [59]:
```
squares+[36,49,4,81,100]
```

Out[59]: [1, 4, 9, 16, 25, 36, 49, 4, 81, 100]

In [60]:
```
cubes=[1,8,27,65,125]
4**3
```

Out[60]: 64

In [61]:
```
cubes[3]=64
cubes
```

Out[61]: [1, 8, 27, 64, 125]

In [62]:
```
cubes.append(216)
cubes.append(7**3)
cubes
```

Out[62]: [1, 8, 27, 64, 125, 216, 343]

In [63]:
```
rgb=["Red","Green","Blue"]
rgba=rgb
id(rgb)==id(rgba)
```

Out[63]: True

In [64]:
```
rgb=["Red","Green","Blue"]
rgba=rgb
id(rgb)==id(rgba)
rgba.append("Alph")
rgb
```

Out[64]: ['Red', 'Green', 'Blue', 'Alph']

In [65]:
```
correct_rgba=rgba[:]
correct_rgba[-1]="Alpha"
correct_rgba
```

Out[65]: ['Red', 'Green', 'Blue', 'Alpha']

In [66]:
```
rgba
```

Out[66]: ['Red', 'Green', 'Blue', 'Alph']

In [67]:
```
letters=['a','b','c','d','e','f','g']
letters
```

Out[67]: ['a', 'b', 'c', 'd', 'e', 'f', 'g']

In [68]:
```
letters[2:5]=['C','D','E']
letters
```

Out[68]: ['a', 'b', 'C', 'D', 'E', 'f', 'g']

In [69]:
```
letters[2:5]=[]
letters
```

Out[69]: ['a', 'b', 'f', 'g']

In [70]:
```
letters[:]=[]
letters
```

Out[70]: []

In [71]:
```
letters=['a','b','c','d']
len(letters)
```

Out[71]: 4

In [72]:
```
a=['a','b','c','d']
n=[1,2,3]
x=[a,n]
x
```

Out[72]: [['a', 'b', 'c', 'd'], [1, 2, 3]]

In [73]:
```
x[0]
```

Out[73]: ['a', 'b', 'c', 'd']

In [74]:
```
x[0][1]
```

Out[74]: 'b'

In [75]:
```
a,b=0,1
while a< 10:
    print(a)
    a,b=b,a+b
```

```
0
1
1
2
3
5
8
```

In [76]:
```
i=256*256
print('the value of i is',i)
```

```
the value of i is 65536
```

In [77]:
```
a,b=0,1
while a<1000:
  print(a,end=',')
  a,b=b, a+b
```

```
0,1,1,2,3,5,8,13,21,34,55,89,144,233,377,610,987,
```

In [ ]:
```

```