In [4]:
```
# Q.1

#string
a="soham"
type(a)
```

Out[4]:
```
str
```

In [5]:
```
#list
b=[1,2,69,5]
type(b)
```

Out[5]:
```
list
```

In [6]:
```
#float
c=54.56
type(c)
```

Out[6]:
```
float
```

In [7]:
```
#tuple
d=(1,2,34.5,"apple",True)
type(d)
```

Out[7]:
```
tuple
```

In [ ]:
```
# Q.2

var1 = ‘ ‘
type(var1)
```

In [10]:
```
var2 = ‘[ DS , ML , Python]’
type(var2)
```

```
  Cell In[10], line 1
    var2 = ‘[ DS , ML , Python]’
           ^
SyntaxError: invalid character '‘' (U+2018)
```

In [14]:
```
var3 = [ ‘DS’ , ’ML’ , ‘Python’ ]
type(var3)
```

```
  Cell In[14], line 1
    var3 = [ ‘DS’ , ’ML’ , ‘Python’ ]
                         ^
SyntaxError: invalid character '‘' (U+2018)
```

In [15]:
```
var4 = 1.
type(var4)
```

Out[15]:
```
float
```

In [16]:
```
# Q.3

# i) / : It is a division operator
7/2
```

Out[16]:
```
3.5
```

In [17]:
```
# ii) % : It is a modulus operator, returns the remainder
4%3
```

Out[17]:
```
1
```

In [19]:
```
# iii) // : It is floor division operator
64//4
```

Out[19]:
```
16
```

In [20]:
```
# iv) ** : It is a exponentation oprator
2 ** 3
```

Out[20]:
```
8
```

In [23]:
```
# Q.4
l1=[10,20,'cherry',34.45,True,50,'parbhani',91.1,69,False]
for i in l1 :
    print(i)
    print(type(i))
```

```
10
<class 'int'>
20
<class 'int'>
cherry
<class 'str'>
34.45
<class 'float'>
True
<class 'bool'>
50
<class 'int'>
parbhani
<class 'str'>
91.1
<class 'float'>
69
<class 'int'>
False
<class 'bool'>
```

In [4]:
```
# Q.5

A=int(input("Enter a number"))
B=int(input("Enter a number"))
while(A%B==0):
     print("First number is purely divisible by second number")
     count=A//B
     print(count)
     break

else :
    print("Not divisible")
```

```
First number is purely divisible by second number
5
```

In [5]:
```
# Q.6

l=[1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,24,25]
for j in l :
    if j%3==0 :
        print("Element is divisible by 3")
        j+=1
    else :
        print("Element is not divisible by 3")
```

```
Element is not divisible by 3
Element is not divisible by 3
Element is divisible by 3
Element is not divisible by 3
Element is not divisible by 3
Element is divisible by 3
Element is not divisible by 3
Element is not divisible by 3
Element is divisible by 3
Element is not divisible by 3
Element is not divisible by 3
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Element is not divisible by 3
Element is not divisible by 3
Element is divisible by 3
Element is not divisible by 3
Element is not divisible by 3
Element is divisible by 3
Element is not divisible by 3
Element is not divisible by 3
```

In [8]:
```
#Q.7

#Mutable datatype : In this we can change a value for a particular index for a particular collection
l=[2,3,'cherry',4+3j]
l[3]='Maggi'
print(l)
```

```
[2, 3, 'cherry', 'Maggi']
```

In [7]:
```
#Imutable datatype : In this we can not change a value for a particular index for a particular collection
a="sudh"
a[2]="l"
a
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[7], line 3
      1 #Imutable datatype : In this we can not change a value for a particular index for a particular collection
      2 a="sudh"
```

```
----> 3 a[2]="l"
      4 a

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