In [2]:

```
print(dir(list))
```

```
['__add__', '__class__', '__contains__', '__delattr__', '__delitem__', '__di
r__', '__doc__', '__eq__', '__format__', '__ge__', '__getattribute__', '__ge
titem__', '__gt__', '__hash__', '__iadd__', '__imul__', '__init__', '__init_
subclass__', '__iter__', '__le__', '__len__', '__lt__', '__mul__', '__ne__',
'__new__', '__reduce__', '__reduce_ex__', '__repr__', '__reversed__', '__rmu
l__', '__setattr__', '__setitem__', '__sizeof__', '__str__', '__subclasshook
__', 'append', 'clear', 'copy', 'count', 'extend', 'index', 'insert', 'pop',
'remove', 'reverse', 'sort']
```

In [27]:

```
lst1 = [2, 7, 'cse', 9.0, 'mech', 8.5, 13, 17, 'civil']
lst1
```

Out[27]:

```
[2, 7, 'cse', 9.0, 'mech', 8.5, 13, 17, 'civil']
```

In [12]:

```
# remove()
lst1.remove('mech')
```

In [13]:

```
lst1
```

Out[13]:

```
[2, 7, 'cse', 9.0, 8.5, 13, 17, 'civil']
```

In [14]:

```
lst1.remove(7)
```

In [15]:

```
lst1
```

Out[15]:

```
[2, 'cse', 9.0, 8.5, 13, 17, 'civil']
```

In [8]:

```
lst1
```

Out[8]:

```
[2, 7, 'cse', 9.0, 8.5, 13, 17, 'civil']
```

In [9]:

```
# reverse()
lst1.reverse()
```

In [10]:

```
print(lst1)
```

```
['civil', 17, 13, 8.5, 9.0, 'cse', 7, 2]
```

In [16]:

```
lst2 = [4,8,3,1,6,10]
lst2
```

Out[16]:

```
[4, 8, 3, 1, 6, 10]
```

In [17]:

```
# sort()
lst2.sort() # ascending order
print(lst2)
```

```
[1, 3, 4, 6, 8, 10]
```

In [18]:

```
lst2.reverse() # descending order
print(lst2)
```

```
[10, 8, 6, 4, 3, 1]
```

In [26]:

```
lst1
```

Out[26]:

```
[]
```

In [20]:

```
# insert()
lst1.insert(2,'spmvv')
print(lst1)
```

```
[2, 'cse', 'spmvv', 9.0, 8.5, 13, 17, 'civil']
```

In [21]:

```
lst1.insert(4,34)
print(lst1)
```

```
[2, 'cse', 'spmvv', 9.0, 34, 8.5, 13, 17, 'civil']
```

In [23]:

```
# pop()
lst1.pop()
print(lst1)
```

```
[2, 'cse', 'spmvv', 9.0, 34, 8.5, 13]
```

In [24]:

```
# clear()
lst1.clear()
lst1
```

Out[24]:

```
[]
```

In [25]:

```
print(len(lst1))
```

```
0
```

In [28]:

```
lst1
```

Out[28]:

```
[2, 7, 'cse', 9.0, 'mech', 8.5, 13, 17, 'civil']
```

In [29]:

```
lst1.pop(7)
```

Out[29]:

```
17
```

In [30]:

```
lst1
```

Out[30]:

```
[2, 7, 'cse', 9.0, 'mech', 8.5, 13, 'civil']
```

In [33]:

```
lst1.remove(7)
```

In [34]:

```
lst1
```

Out[34]:

```
[2, 'cse', 9.0, 'mech', 8.5, 13, 'civil']
```

In [42]:

```
lst = [12,9.5,'cse','ece',15,8,5.3]
nlst = []
slst = []
flst = []
for item in lst: # item = 12, item =9.5, item= 'cse',
    if(type(item) == int):
        nlst.append(item) # nlst = [12,15,8]
    elif(type(item) == float):
        flst.append(item) #flst [9.5,5.3]
    else:
        slst.append(item) #slst = ['cse','ece']
print(nlst,'\n',slst,'\n',flst)
```

```
[12, 15, 8]
 ['cse', 'ece']
 [9.5, 5.3]
```

In [40]:

```
type(9.5)
```

Out[40]:

```
float
```

Tuple

- A tuple is a collection which is ordered and immutable.
- In python tuples are written with round brackets.
- Iteration in tuple is faster than list.

In [43]:

```
t = ('cse',7.8,'mech',6.5,23,76,'ece')
t
```

Out[43]:

```
('cse', 7.8, 'mech', 6.5, 23, 76, 'ece')
```

In [44]:

```
1 t[0]
```

Out[44]:

```
'cse'
```

In [45]:

```
1 t[-1]
```

Out[45]:

```
'ece'
```

In [46]:

```
1 t[-1::-1]
```

Out[46]:

```
('ece', 76, 23, 6.5, 'mech', 7.8, 'cse')
```

In [47]:

```
1 print(len(t))
```

```
7
```

In [48]:

```
1 # immutable
2 t['mech'] = 'civil'
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-48-ed137d13aa86> in <module>
      1 # immutable
----> 2 t['mech'] = 'civil'

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

In [49]:

```
1 del t[2]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-49-2d0f41a77003> in <module>
----> 1 del t[2]

TypeError: 'tuple' object doesn't support item deletion
```

In [63]:

```
tup = (1,2,3,(4,5,6,7,(8,9)),10,11)
tup
```

Out[63]:

```
(1, 2, 3, (4, 5, 6, 7, (8, 9)), 10, 11)
```

In [67]:

```
res1 = tup[3]
res1.count(5)
```

Out[67]:

```
1
```

In [51]:

```
print(len(tup))
```

```
6
```

In [52]:

```
tup[3]
```

Out[52]:

```
(4, 5, 6, 7, (8, 9))
```

In [53]:

```
tup[3][4]
```

Out[53]:

```
(8, 9)
```

In [54]:

```
tup[3][4][1]
```

Out[54]:

```
9
```

In [55]:

```
print(dir(tuple))
```

```
['__add__', '__class__', '__contains__', '__delattr__', '__dir__', '__doc_
_', '__eq__', '__format__', '__ge__', '__getattribute__', '__getitem__', '__
getnewargs__', '__gt__', '__hash__', '__init__', '__init_subclass__', '__ite
r__', '__le__', '__len__', '__lt__', '__mul__', '__ne__', '__new__', '__redu
ce__', '__reduce_ex__', '__repr__', '__rmul__', '__setattr__', '__sizeof__',
'__str__', '__subclasshook__', 'count', 'index']
```

In [59]:

```
t
```

Out[59]:

```
('cse', 7.8, 'mech', 6.5, 23, 76, 'ece')
```

In [57]:

```
# count()
t.count(23)
```

Out[57]:

```
1
```

In [58]:

```
# index()
t.index(23)
```

Out[58]:

```
4
```

In [60]:

```
t = ('cse', 7.8, 'mech', 6.5, 23, 76, 'ece',23)
```

In [61]:

```
t.index(23)
```

Out[61]:

```
4
```

In [62]:

```
t.count(13)
```

Out[62]:

```
0
```

In [ ]:

```
1
```