In [1]:
```
t1=()
```

In [2]:
```
t2=(10,30,60)
```

In [3]:
```
t3=(10.77,30.66,60.89)
```

In [4]:
```
t4=('one','two',"three")
```

In [5]:
```
t5=('Asif',25,(50,100),(150,90))
```

In [6]:
```
t6=(100,'Asif',17.765)
```

In [9]:
```
t7=('Asif',25,[50,100],[150,90],{'John','David'},(99,22,33))
```

In [10]:
```
len(t7)
```

Out[10]: 6

t2[0]

In [11]:
```
t2[0]
```

Out[11]: 10

In [12]:
```
t4[-1]
```

Out[12]: 'three'

In [13]:
```
t4[0][0]
```

Out[13]: 'o'

In [14]:
```
t4[-1][-1]
```

Out[14]: 'e'

t5[2][0]

In [15]:
```
t5[2][0]
```

Out[15]: 50

t5[2][0][0]

In [16]:
```
t5[2][0][0]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[16], line 1
----> 1 t5[2][0][0]

TypeError: 'int' object is not subscriptable
```

In [17]:
```
t5[0][0]
```

Out[17]:
```
'A'
```

In [18]:
```
t5[2][0][0]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[18], line 1
----> 1 t5[2][0][0]

TypeError: 'int' object is not subscriptable
```

t6[2]

In [19]:
```
t6[2]
```

Out[19]:
```
17.765
```

In [20]:
```
t6[2][0]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[20], line 1
----> 1 t6[2][0]

TypeError: 'float' object is not subscriptable
```

In [21]:
```
t7[4][0]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[21], line 1
----> 1 t7[4][0]

TypeError: 'set' object is not subscriptable
```

In [22]:
```
t7[4]
```

Out[22]:
```
{'David', 'John'}
```

In [23]:
```
t7[4][0]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[23], line 1
----> 1 t7[4][0]

TypeError: 'set' object is not subscriptable
```

In [24]:
```
t7[-1]
```

Out[24]:
```
(99, 22, 33)
```

In [25]:
```
t7[-1][-1]
```

Out[25]:
```
33
```

In [26]:
```
t7[-1][-1][0]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[26], line 1
----> 1 t7[-1][-1][0]

TypeError: 'int' object is not subscriptable
```

In [27]:
```
mytuple=('one','two','three','four','five','six','seven','eight')
```

In [28]:
```
mytuple[0:3]
```

Out[28]: ('one', 'two', 'three')

In [29]:
```
mytuple[2:5]
```

Out[29]: ('three', 'four', 'five')

In [30]:
```
mytuple[-3:]
```

Out[30]: ('six', 'seven', 'eight')

In [31]:
```
mytuple[-3:2]
```

Out[31]: ()

In [32]:
```
mytuple[-3:1]
```

Out[32]: ()

In [33]:
```
mytuple[-3:-1]
```

Out[33]: ('six', 'seven')

In [34]:
```
mytuple[-8:-2]
```

Out[34]: ('one', 'two', 'three', 'four', 'five', 'six')

In [35]:
```
mytuple[-8:6]
```

Out[35]: ('one', 'two', 'three', 'four', 'five', 'six')

In [36]:
```
mytuple[-3][9]
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[36], line 1
----> 1 mytuple[-3][9]

IndexError: string index out of range
```

In [37]:
```
mytuple[-3:7]
```

Out[37]: ('six', 'seven')

In [38]:
```
mytuple[1:-1]
```

Out[38]:
```
('two', 'three', 'four', 'five', 'six', 'seven')
```

In [39]:
```
mytuple[2:7:2]
```

Out[39]:
```
('three', 'five', 'seven')
```

In [40]:
```
mytuple[-7:7:3]
```

Out[40]:
```
('two', 'five')
```

In [41]:
```
mytuple[2:-2:3]
```

Out[41]:
```
('three', 'six')
```

In [42]:
```
mytuple[:]
```

Out[42]:
```
('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

In [43]:
```
mytuple
```

Out[43]:
```
('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

In [44]:
```
del mytuple[0]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[44], line 1
----> 1 del mytuple[0]

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

In [45]:
```
mytuple[0]=1
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[45], line 1
----> 1 mytuple[0]=1

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

In [46]:
```
del mytuple()
```

```
  Cell In[46], line 1
    del mytuple()
        ^
SyntaxError: cannot delete function call
```

In [47]:
```
del mytuple
```

In [48]:
```
mytuple
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[48], line 1
----> 1 mytuple

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

In [49]:
```
mytuple=('one','two','three','four','five','six','seven','eight')
```

In [50]:
```
mytuple
```

Out[50]: ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')

In [51]:
```
for i in mytuple:
    print(i)
```

```
one
two
three
four
five
six
seven
eight
```

In [52]:
```
for i in enumerate(mytuple):
    print(i)
```

```
(0, 'one')
(1, 'two')
(2, 'three')
(3, 'four')
(4, 'five')
(5, 'six')
(6, 'seven')
(7, 'eight')
```

Tuple membership

Tuple Membership

In [53]:
```
mytuple
```

Out[53]: ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')

In [54]:
```
'one' in mytuple
```

Out[54]: True

In [55]:
```
'nine' in mytuple
```

Out[55]: False

In [56]:
```
if 'three' in mytuple:
    print("Three is present in mytuple")
```

```
else:
    print("Three is not present in mytuple")
```

```
Three is present in mytuple
```

In [57]:
```
if 'eleven' in mytuple:
    print("Eleven is present in mytuple")
else:
    print("Eleven is not present in mytuple")
```

```
Eleven is not present in mytuple
```

In [58]:
```
mytuple
```

Out[58]:
```
('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

In [59]:
```
mytuple.index('one')
```

Out[59]:
```
0
```

In [60]:
```
mytuple[0]
```

Out[60]:
```
'one'
```

In [61]:
```
mytuple.index('five')
```

Out[61]:
```
4
```

In [62]:
```
mytuple1
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[62], line 1
----> 1 mytuple1

NameError: name 'mytuple1' is not defined
```

In [63]:
```
mytuple1=('one','two','three','four','one','one','two','three')
```

In [64]:
```
mytuple1
```

Out[64]:
```
('one', 'two', 'three', 'four', 'one', 'one', 'two', 'three')
```

In [65]:
```
mytuple1.sort()
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[65], line 1
----> 1 mytuple1.sort()

AttributeError: 'tuple' object has no attribute 'sort'
```

In [66]:
```
sorted(mytuple1)
```

Out[66]:
```
['four', 'one', 'one', 'one', 'three', 'three', 'two', 'two']
```

In [67]:
```
sorted(mytuple1 reverse=False)
```

```
  Cell In[67], line 1
    sorted(mytuple1 reverse=False)
           ^
SyntaxError: invalid syntax. Perhaps you forgot a comma?
```

In [68]:
```
sorted(mytuple1, reverse=False)
```

Out[68]:
```
['four', 'one', 'one', 'one', 'three', 'three', 'two', 'two']
```

In [69]:
```
sorted(mytuple1.reverse=False)
```

```
  Cell In[69], line 1
    sorted(mytuple1.reverse=False)
           ^
SyntaxError: expression cannot contain assignment, perhaps you meant "=="?
```

In [70]:
```
sorted(mytuple1.reverse==False)
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[70], line 1
----> 1 sorted(mytuple1.reverse==False)

AttributeError: 'tuple' object has no attribute 'reverse'
```

In [75]:
```
sorted(mytuple1,reverse=True)
```

Out[75]:
```
['two', 'two', 'three', 'three', 'one', 'one', 'one', 'four']
```

In [72]:
```
mytuple2=(43,67,99,12,6,90,67)
```

In [73]:
```
mytuple2
```

Out[73]:
```
(43, 67, 99, 12, 6, 90, 67)
```

In [74]:
```
sorted(mytuple2)
```

Out[74]:
```
[6, 12, 43, 67, 67, 90, 99]
```

In [76]:
```
sorted(mytuple2,reverse=True)
```

Out[76]:
```
[99, 90, 67, 67, 43, 12, 6]
```

In [77]:
```
mytuple2
```

Out[77]:
```
(43, 67, 99, 12, 6, 90, 67)
```

In [78]:
```
mytuple2.sort
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[78], line 1
----> 1 mytuple2.sort

AttributeError: 'tuple' object has no attribute 'sort'
```

In [79]:
```
mytuple2.sort()
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[79], line 1
----> 1 mytuple2.sort()

AttributeError: 'tuple' object has no attribute 'sort'
```

In [80]:
```
sorted(mytuple2,reverse=True)
```

Out[80]:
```
[99, 90, 67, 67, 43, 12, 6]
```

In [81]:
```
sorted(mytuple2)
```

Out[81]:
```
[6, 12, 43, 67, 67, 90, 99]
```

In [82]:
```
mytuple2
```

Out[82]:
```
(43, 67, 99, 12, 6, 90, 67)
```

In [ ]:
```

```