TUPLE

```
In [40]: tup1=()
         print(tup1)
```

```
()
```

tuple with set of integers

```
In [41]: tup2=(10,2,30,40)
         tup2
```

```
Out[41]: (10, 2, 30, 40)
```

tuple with float numbers

```
In [42]: tup3=(3.4,4.5,6.7,7.8)
         tup3
```

```
Out[42]: (3.4, 4.5, 6.7, 7.8)
```

tuple with boolean

```
In [43]: tup4=True
         tup4
```

```
Out[43]: True
```

```
In [44]: tup5=1
         type(tup5)
```

```
Out[44]: int
```

tuple with strings

```
In [45]: tup6=('manasa','kishore','sathwik','saakshar')
         tup6
```

```
Out[45]: ('manasa', 'kishore', 'sathwik', 'saakshar')
```

```
In [46]: tup7=(10,True,9.7,'manasa')
         tup7
```

```
Out[46]:  (10, True, 9.7, 'manasa')
```

nested tuple

```
In [47]:  tup8=(10,'manasa',(10,20),(30,40))
          tup8
```

```
Out[47]:  (10, 'manasa', (10, 20), (30, 40))
```

```
In [48]:  tup8[0]
```

```
Out[48]:  10
```

```
In [49]:  len(tup8())
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[49], line 1
----> 1 len(tup8())

TypeError: 'tuple' object is not callable
```

```
In [100…  len(tup7())
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[100], line 1
----> 1 len(tup7())

TypeError: 'tuple' object is not callable
```

```
In [101…  len(tup8)
```

```
Out[101…  4
```

```
In [102…  len(tup7)
```

```
Out[102…  4
```

```
In [103…  tup9=(19,30.5,[37,69],[89,76],{'manasa','kishore'})
          tup9
```

```
Out[103…  (19, 30.5, [37, 69], [89, 76], {'kishore', 'manasa'})
```

```
In [104…  tup9[0]
```

```
Out[104…  19
```

```
In [105…  tup8
```

```
Out[105…  (10, 'manasa', (10, 20), (30, 40))
```

```
In [106…    tup8[2]=30
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[106], line 1
----> 1 tup8[2]=30

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

we cannot assign object to tuple

TUPLE INDEXING

```
In [51]:    tup2[0]
```

```
Out[51]:    10
```

```
In [52]:    tup8[0]
```

```
Out[52]:    10
```

```
In [53]:    tup8(0)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[53], line 1
----> 1 tup8(0)

TypeError: 'tuple' object is not callable
```

```
In [54]:    tup8()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[54], line 1
----> 1 tup8()

TypeError: 'tuple' object is not callable
```

```
In [55]:    tup8
```

```
Out[55]:    (10, 'manasa', (10, 20), (30, 40))
```

```
In [56]:    tup8
```

```
Out[56]:    (10, 'manasa', (10, 20), (30, 40))
```

```
In [57]:    tup8[2]
```

```
Out[57]:    (10, 20)
```

```
In [58]: tup8[-1]
```

Out[58]: (30, 40)

```
In [59]: tup8[-4]
```

Out[59]: 10

```
In [64]: tup8[0][0]
         print(tup8)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[64], line 1
----> 1 tup8[0][0]
      2 print(tup8)

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

```
In [65]: tup8[1][1]
```

Out[65]: 'a'

```
In [62]: tup8[0]
```

Out[62]: 10

```
In [63]: tup8(0)(0)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[63], line 1
----> 1 tup8(0)(0)

TypeError: 'tuple' object is not callable
```

TUPLE SLICING

```
In [66]: mytuple=('one','two','three','four','five','six','seven','eight')
         mytuple[0:3]
```

Out[66]: ('one', 'two', 'three')

```
mytuple[2:5]
```

```
In [67]: mytuple[2:5]
```

Out[67]: ('three', 'four', 'five')

```
In [68]: mytuple[:3]
```

```
Out[68]:  ('one', 'two', 'three')
```

```
In [69]:  mytuple[3:]
```

```
Out[69]:  ('four', 'five', 'six', 'seven', 'eight')
```

```
In [70]:  mytuple[-3:]
```

```
Out[70]:  ('six', 'seven', 'eight')
```

```
In [71]:  mytuple[-2:]
```

```
Out[71]:  ('seven', 'eight')
```

```
In [72]:  mytuple[:-2]
```

```
Out[72]:  ('one', 'two', 'three', 'four', 'five', 'six')
```

```
In [73]:  mytuple[:-3]
```

```
Out[73]:  ('one', 'two', 'three', 'four', 'five')
```

```
In [74]:  mytuple[-3:]
```

```
Out[74]:  ('six', 'seven', 'eight')
```

```
In [75]:  mytuple[0:0]
```

```
Out[75]:  ()
```

```
In [76]:  mytuple[:]
```

```
Out[76]:  ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

REMOVE AND CHANGE ITEMS

```
In [77]:  mytuple
```

```
Out[77]:  ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [78]:  mytuple()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[78], line 1
----> 1 mytuple()

TypeError: 'tuple' object is not callable
```

```
In [79]:  mytuple[1]
```

```
Out[79]:    'two'
```

```
In [80]:    mytuple.remove[0]
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[80], line 1
----> 1 mytuple.remove[0]

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

```
In [81]:    del mytuple[0]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[81], line 1
----> 1 del mytuple[0]

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

```
In [82]:    mytuple
```

```
Out[82]:    ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [83]:    mytuple
```

```
Out[83]:    ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [84]:    mytuple
```

```
Out[84]:    ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

LOOP THROUGH TUPLE

```
In [87]:    for i in mytuple:
                print(i)
```

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

```
In [88]:    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

In [89]: `mytuple`

Out[89]: `('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')`

In [91]: `'one' in mytuple`

Out[91]: `True`

In [92]: `'ten' in mytuple`

Out[92]: `False`

INDEX POSITION

In [94]: `mytuple.index('one')`

Out[94]: `0`

In [95]: `mytuple.index('eight')`

Out[95]: `7`

SORTING

In [96]: `mytuple`

Out[96]: `('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')`

In [98]:
```
mytuple1=(98,76,74,88,34,65,72)
sorted(mytuple1)
```

Out[98]: `[34, 65, 72, 74, 76, 88, 98]`

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: