Tuple

tuple creation

```
In [44]: tup1 = ()
```

```
In [45]: tup2 = (10,30,60)
         tup3 = (10.77,30.66,60.89)
         tup4 = ('one','two',"three")
         tup5 = ('Asif', 25,(50,100),(150,90))
         tup6 = (100, 'Asif', 17.765)
         tup7 = ('Asif',25,[50,100],[150,90],{'John','David'},(99,22,33))
```

```
In [46]: len(tup7)
```

```
Out[46]: 6
```

Tuple Indexing

```
In [7]: tup2[0]
```

```
Out[7]: 10
```

```
In [8]: tup7[2][1]
```

```
Out[8]: 100
```

```
In [9]: tup4[0][0]
```

```
Out[9]: 'o'
```

```
In [10]: tup4[-1]
```

```
Out[10]: 'three'
```

```
In [11]: tup5[-1]
```

```
Out[11]: (150, 90)
```

tuple slicing

```
In [12]: mytuple = ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [13]: mytuple[0:3]
```

```
Out[13]: ('one', 'two', 'three')
```

```
In [5]:  mytuple = ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [6]:  mytuple[:6]
```

```
Out[6]:  ('one', 'two', 'three', 'four', 'five', 'six')
```

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

```
Out[7]:  ('one', 'two')
```

```
In [8]:  mytuple[-3:]
```

```
Out[8]:  ('six', 'seven', 'eight')
```

```
In [9]:  mytuple[:-2]
```

```
Out[9]:  ('one', 'two', 'three', 'four', 'five', 'six')
```

remove & change items

```
In [11]:  mytuple
```

```
Out[11]:  ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [12]:  del mytuple[0] #we cant delete immutable which means we cant delete tuple items
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[12], line 1
----> 1 del mytuple[0]

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

```
In [13]:  mytuple[0] = 1 #we cant change the values of tuple which are immutable
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[13], line 1
----> 1 mytuple[0] = 1

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

```
In [14]:  del mytuple
```

Looping through a tuple

```
In [16]:  mytuple = ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [17]:  for i in mytuple:
              print(i)
```

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

In [18]:
```python
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 [19]:
```python
mytuple
```

Out[19]: `('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')`

In [20]:
```python
'ONE' in mytuple
```

Out[20]: False

In [21]:
```python
'one' in mytuple
```

Out[21]: True

In [22]:
```python
'nine' not in mytuple
```

Out[22]: True

In [23]:
```python
'eight' not in mytuple
```

Out[23]: False

In [24]:
```python
if 'three' in mytuple:
    print('three is in mytuple')
else:
    print('Not in mytuple')
```

```
three is in mytuple
```

In [25]:
```python
if 'nine' in mytuple:
    print('nine is in mytuple')
else:
    print('Not in mytuple')
```

```
Not in mytuple
```

index position

```
In [26]:  mytuple
```

```
Out[26]:  ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [28]:  mytuple.index('one')
```

```
Out[28]:  0
```

```
In [29]:  mytuple.index('eight')
```

```
Out[29]:  7
```

```
In [30]:  mytuple1 = mytuple
          mytuple1
```

```
Out[30]:  ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [39]:  mytuple1.index('one')
```

```
Out[39]:  0
```

```
In [40]:  mytuple1.index('nine')
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
Cell In[40], line 1
----> 1 mytuple1.index('nine')

ValueError: tuple.index(x): x not in tuple
```

Sorting

```
In [34]:  mytuple = (66,22,44,77,55,33)
```

```
In [35]:  mytuple
```

```
Out[35]:  (66, 22, 44, 77, 55, 33)
```

```
In [36]:  sorted(mytuple)
```

```
Out[36]:  [22, 33, 44, 55, 66, 77]
```

```
In [37]:  sorted(mytuple,reverse=True)
```

```
Out[37]:  [77, 66, 55, 44, 33, 22]
```

```
In [38]:  sorted(mytuple,reverse=False)
```

```
Out[38]:  [22, 33, 44, 55, 66, 77]
```

In [ ]: