Tuple creation

```
In [3]:  t1 = ()
```

```
In [5]:  t1
```

```
Out[5]:  ()
```

```
In [7]:  t2 = (10,20,30)
         t2
```

```
Out[7]:  (10, 20, 30)
```

```
In [9]:  t3 = (10.55,20.33,15.25)
         t3
```

```
Out[9]:  (10.55, 20.33, 15.25)
```

```
In [11]:  t4 = ('one','two','three')
          t4
```

```
Out[11]:  ('one', 'two', 'three')
```

```
In [13]:  t5 = ('Rohit',20,(25,50),(150,99))
          t5
```

```
Out[13]:  ('Rohit', 20, (25, 50), (150, 99))
```

```
In [15]:  t6 = (100,'Rohit',22.45)
          t6
```

```
Out[15]:  (100, 'Rohit', 22.45)
```

```
In [17]:  t7 = ('Rohit', 25, [25,50],[150,99], {'Peter', 'Parker'}, (99,25,33))
          t7
```

```
Out[17]:  ('Rohit', 25, [25, 50], [150, 99], {'Parker', 'Peter'}, (99, 25, 33))
```

```
In [19]:  len(t7)
```

```
Out[19]:  6
```

Tuple Indexing

```
In [22]:  t2[0]
```

```
Out[22]:  10
```

```
In [24]:  t4[2]
```

```
Out[24]:  'three'
```

```
In [26]: t4[0][0]
```

Out[26]: 'o'

```
In [28]: t4[0][1]
```

Out[28]: 'n'

```
In [30]: t4[1][2]
```

Out[30]: 'o'

```
In [32]: t5[-1]
```

Out[32]: (150, 99)

```
In [34]: t6[-2]
```

Out[34]: 'Rohit'

Tuple Slicing

```
In [95]: mytuple = ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [97]: mytuple
```

Out[97]: ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')

```
In [41]: mytuple[0:3]
```

Out[41]: ('one', 'two', 'three')

```
In [43]: mytuple[0:4]
```

Out[43]: ('one', 'two', 'three', 'four')

```
In [45]: mytuple[:3]
```

Out[45]: ('one', 'two', 'three')

```
In [47]: mytuple[-3:]
```

Out[47]: ('six', 'seven', 'eight')

```
In [63]: mytuple[-4:]
```

Out[63]: ('five', 'six', 'seven', 'eight')

```
In [65]: mytuple[-2]
```

Out[65]: 'seven'

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

```
Out[67]:  ('one', 'three', 'five', 'seven')
```

```
In [71]:  mytuple[:]
```

```
Out[71]:  ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

Remove & Change items

```
In [74]:  mytuple
```

```
Out[74]:  ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [80]:  mytuple.remove('three')
```

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

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

```
In [82]:  del mytuple[0]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[82], line 1
----> 1 del mytuple[0]

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

```
In [84]:  mytuple[0] = 1
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[84], line 1
----> 1 mytuple[0] = 1

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

```
In [99]:  del mytuple
```

Loop through a tuple

```
In [104…  mytuple = ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [106…  mytuple
```

```
Out[106…  ('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

```
In [110…  for i in mytuple:
              print(i)
```

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

In [112…
```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 [115…
```python
mytuple
```

Out[115…
```
('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

In [117…
```python
'one' in mytuple
```

Out[117…
```
True
```

In [119…
```python
'nine' in mytuple
```

Out[119…
```
False
```

In [121…
```python
if 'three' in mytuple:
    print('Three is present in the tuple')
else:
    print('Three is not present in the tuple')
```

```
Three is present in the tuple
```

In [123…
```python
if 'ten' in mytuple:
    print('Ten is present in the tuple')
else:
    print('Ten is not present in the tuple')
```

```
Ten is not present in the tuple
```

Index Position

In [128…
```python
mytuple
```

Out[128…
```
('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')
```

In [130…
```python
mytuple.index('one')
```

Out[130…   0

In [134…   ```
mytuple.index('eight')
```

Out[134…    7

In [138…    ```
mytuple1 = (1,2,3,4,5,6,7,8)
```

In [140…   ```
mytuple1
```

Out[140…    (1, 2, 3, 4, 5, 6, 7, 8)

In [144…    ```
mytuple1.index(5)
```

Out[144…   4

In [146…   ```
mytuple1.index(6)
```

Out[146…    5

# Sorting

In [153…    ```
mytuple2 = (11,2,33,4,55,9,66)
```

In [155…   ```
mytuple2
```

Out[155…    (11, 2, 33, 4, 55, 9, 66)

In [157…    ```
sorted(mytuple2)
```

Out[157…   [2, 4, 9, 11, 33, 55, 66]

In [163…   ```
sorted(mytuple2, reverse=True)
```

Out[163…    [66, 55, 33, 11, 9, 4, 2]

In [ ]: