Tuple

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

Out[1]: ()

```
In [2]: type(t)
```

Out[2]: tuple

```
In [5]: t1 = (10,20,30)
        t1
```

Out[5]: (10, 20, 30)

```
In [7]: t1.count(10)
```

Out[7]: 1

```
In [8]: t1
```

Out[8]: (10, 20, 30)

```
In [9]: for i in t1:
            print(i)
```

```
10
20
30
```

```
In [11]: for i in enumerate(t1):
             print(i)
```

```
(0, 10)
(1, 20)
(2, 30)
```

```
In [13]: t2 = t1 * 3
         t2
```

Out[13]: (10, 20, 30, 10, 20, 30, 10, 20, 30)

```
In [14]: t2
```

Out[14]: (10, 20, 30, 10, 20, 30, 10, 20, 30)

```
In [15]: t2[2:6]
```

Out[15]: (30, 10, 20, 30)

```
In [16]:  t1
```

Out[16]: (10, 20, 30)

```
In [17]:  t2
```

Out[17]: (10, 20, 30, 10, 20, 30, 10, 20, 30)

Tuple Creation

```
In [34]:  tup1 =()
```

```
In [35]:  tup2 = (10,30,60)
```

```
In [36]:  tup3 = (10.77,30.66,60.89)
```

```
In [37]:  tup4 = ('one','two',"three")
```

```
In [38]:  tup5 =('Janhavi', 25,(50,100),(130,69))
```

```
In [39]:  tup6 =(100,'Janhavi',17.65)
```

```
In [40]:  tup7 = ('Janhavi',25,[30.100],[130,89],{'ketki','krutika'},(99,22,50))
```

```
In [41]:  len(tup7)
```

Out[41]: 6

Tuple Indexing

```
In [42]:  tup2[0]
```

Out[42]: 10

```
In [43]:  tup4[2]
```

Out[43]: 'three'

```
In [44]:  tup4[0][0]
```

Out[44]: 'o'

```
In [45]:  tup4[-1]
```

Out[45]: 'three'

In [46]: `tup5[-1]`

Out[46]: `(130, 69)`

Tuple slicing

In [47]: `mytuple = ('one','two','three','four','five','six','seven','eight')`

In [48]: `mytuple[0:4]`

Out[48]: `('one', 'two', 'three', 'four')`

In [49]: `mytuple[2:5]`

Out[49]: `('three', 'four', 'five')`

In [50]: `mytuple[:6]`

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

In [51]: `mytuple[:3]`

Out[51]: `('one', 'two', 'three')`

In [52]: `mytuple[-3:]`

Out[52]: `('six', 'seven', 'eight')`

In [53]: `mytuple[-5:]`

Out[53]: `('four', 'five', 'six', 'seven', 'eight')`

In [54]: `mytuple[-1]`

Out[54]: `'eight'`

In [55]: `mytuple[:]`

Out[55]: `('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')`

Remove & Change Items

In [56]: `mytuple`

Out[56]: `('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')`

```
In [59]: del mytuple[0]  # Tuples are immutable which means we can't DELETE tuple items
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[59], line 1
----> 1 del mytuple[0]

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

```
In [60]: mytuple[0] = 1 # Tuples are immutable which means we can't CHANGE tuple items
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[60], line 1
----> 1 mytuple[0] = 1

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

```
In [61]: del mytuple
```

Loop Through a Tuple

```
In [62]: mytuple = ('one','two','three','four','five','six','seven','eight')
```

```
In [66]: for i in mytuple:
             print(i)
```

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

```
In [68]: 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 [69]: `mytuple`

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

In [70]: `'one' in mytuple`

Out[70]: `True`

In [71]: `'ten' in mytuple`

Out[71]: `False`

In [73]:
```python
if 'three' in mytuple: # Check if 'three' exist in the list
    print('Three is present in the tuple')
else:
    print('Three is not present in the tuple')
```

`Three is present in the tuple`

In [74]:
```python
if 'eleven' in mytuple: # Check if 'three' exist in the list
        print('eleven is present in the tuple')
else:
        print('eleven is not present in the tuple')
```

`eleven is not present in the tuple`

Index Position

In [75]: `mytuple`

Out[75]: `('one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight')`

In [76]: `mytuple.index('one')`

Out[76]: `0`

In [77]: `mytuple.index('two')`

Out[77]: `1`

In [78]: `mytuple1 = ('one','two','three','four','five','six','seven')`

In [79]: `mytuple1.index('one')`

Out[79]: `0`

Sorting

In [80]: `mytuple2 =(43,45,43,23,45,76,56,13)`

In [81]: `sorted(mytuple2) # Returns a new sorted list and doesn't change original tuple`

Out[81]: `[13, 23, 43, 43, 45, 45, 56, 76]`

In [82]: `sorted(mytuple2, reverse=True) # Sort in descending order`

Out[82]: `[76, 56, 45, 45, 43, 43, 23, 13]`

In [ ]: