

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

In [2]: t1

Out[2]: ()

In [3]: t2 = (10,30,60)

In [4]: t3 = (10.77,30.66,60.89)

In [5]: t4 = ('one', 'two', 'three')

In [6]: t5 = ('Harsha', 25,(50,60),(45,79))

In [7]: t6 = (100,'Vardhan', 7.8)

In [8]: t7 = ('Harsha',25,[50,100],[150,90], {'Whisky','Leo'}, (99,22,23))

In [9]: len(t7)

Out[9]: 6
```

indexing

```
In [10]: t2[0]

Out[10]: 10

In [11]: t4[0][1]

Out[11]: 'n'

In [12]: t4[1][0]

Out[12]: 't'

In [13]: t4[2]

Out[13]: 'three'

In [14]: t5[-1]

Out[14]: (45, 79)

In [15]: t5

Out[15]: ('Harsha', 25, (50, 60), (45, 79))

In [16]: t5[-3]

Out[16]: 25
```

Slicing

```
In [17]: y = (2,4,4,8,95,3)
y

Out[17]: (2, 4, 4, 8, 95, 3)

In [18]: y[0:]

Out[18]: (2, 4, 4, 8, 95, 3)

In [19]: y[2:4]

Out[19]: (4, 8)

In [20]: len(y)

Out[20]: 6

In [21]: y[0:7:2] # 2,4,95
```

```
Out[21]: (2, 4, 95)
```

```
In [22]: y[:-2]
```

```
Out[22]: (2, 4, 4, 8)
```

```
In [23]: y[-8:]
```

```
Out[23]: (2, 4, 4, 8, 95, 3)
```

```
In [24]: y[-3:]
```

```
Out[24]: (8, 95, 3)
```

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

```
Out[25]: 3
```

```
In [26]: y2 = ('one', 'two', 'three', 'four', 'five', 'six')
y2
```

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

```
In [27]: y2[:]
```

```
Out[27]: ('one', 'two', 'three', 'four', 'five', 'six')
```

```
In [29]: y2[-1:]
```

```
Out[29]: ('six',)
```

```
In [30]: y2[-5:]
```

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

Remove or make changes

```
In [31]: y2
```

```
Out[31]: ('one', 'two', 'three', 'four', 'five', 'six')
```

```
In [32]: del y2[1]
```

```
-----
TypeError                                Traceback (most recent call last)
Cell In[32], line 1
----> 1 del y2[1]

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

```
In [33]: y2[0] = 20
```

```
-----
TypeError                                Traceback (most recent call last)
Cell In[33], line 1
----> 1 y2[0] = 20

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

```
In [34]: del y2
```

```
In [35]: y2
```

```
-----
NameError                                Traceback (most recent call last)
Cell In[35], line 1
----> 1 y2

NameError: name 'y2' is not defined
```

Loop

```
In [36]: y2 = ('one', 'two', 'three', 'four', 'five', 'six')
```

```
In [37]: for i in y2:
```

```
print(i)
```

```
one  
two  
three  
four  
five  
six
```

```
In [38]: for i in enumerate(y2):  
        print(i)
```

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

```
In [39]: y2
```

```
Out[39]: ('one', 'two', 'three', 'four', 'five', 'six')
```

```
In [40]: 'five' in y2
```

```
Out[40]: True
```

```
In [41]: 'Ten' in y2
```

```
Out[41]: False
```

```
In [43]: if 'one' in y2:  
        print('one is present in y2')  
        else:  
        print('one is not present in y2')
```

```
one is present in y2
```

```
In [45]: if 'ten' in y2:  
        print('ten is present in y2')  
        else:  
        print('ten is not present in y2')
```

```
ten is not present in y2
```

Sorting

```
In [46]: y3 = (2,4,45,6,6,33,4,4,6,7)
```

```
In [47]: sorted(y3)
```

```
Out[47]: [2, 4, 4, 4, 6, 6, 6, 7, 33, 45]
```

```
In [48]: sorted(y3,reverse = True)
```

```
Out[48]: [45, 33, 7, 6, 6, 6, 4, 4, 4, 2]
```

```
In [49]: sorted(y3,reverse = False)
```

```
Out[49]: [2, 4, 4, 4, 6, 6, 6, 7, 33, 45]
```

```
In [ ]:
```