▾ tuple

tuple is immutable

tuple is a sequence

tuple is iterable

tuple can store any datatype value or item

tuple can store any number of values or items

tuple can store duplicate values or items

tuple supports indexing(+ve and -ve)

tuple supports slicing

tuple is ordered

tuple items enclosed within(, , , ,)

Empty tuple : ( ), tuple( )

```
t = (1,2,3,4,5)
print(t)
print(len(t))
print(id(t))
print(type(t))
```

```
    (1, 2, 3, 4, 5)
    5
    140013216880736
    <class 'tuple'>
```

```
t = (1,2,3,4,5)
for i in t:
  print(i,end=' ')
```

```
    1 2 3 4 5
```

```
t = (1,2,3,4,5)
print(t[0])
```

```
    1
```

```
t[0] = 20
```

```
    ---------------------------------------------------------------------
    TypeError                               Traceback (most recent call last)
    <ipython-input-4-c4877d781a3b> in <module>
    ----> 1 t[0] = 20

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

SEARCH STACK OVERFLOW

```
t = (1,2,3,4,5)
print(t[3])
```

```
    4
```

```
t = (1,2,3,4,5)
print(t[-2])
```

     4

```
t = (1,2,3,4,5)
print(t[0:len(t)])
```

     (1, 2, 3, 4, 5)

```
t = (1,2,3,4,5)
print(t[::-1])
```

     (5, 4, 3, 2, 1)

```
t = ()
print(t)
```

     ()

```
t = ()
print(len(t))
```

     0

```
t = tuple()
print(t)
print(len(t))
```

     ()
     0

▾ tuple.count( )

```
t = (1,2,3,4,1,2,3,65,8)
print(t.count(1))
```

     2

```
t = (1,2,3,4,1,2,3,65,8)
print(t.count(100))
```

     0

▾ tuple.index( )

```
t = (1,2,3,4,5)
print(t.index(5))
```

     4

```
t = (1,1,1,15,2,2,2,5)
print(t.index(5))
```

     7

```
t = (1,1,1,15,2,2,2,5)
print(t.index(1))
```

     0

```
t = (1,2,3,4,5)
t.reverse()
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
<ipython-input-17-e36c56aa63cc> in <module>
      1 t = (1,2,3,4,5)
----> 2 t.reverse()

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

SEARCH STACK OVERFLOW

```
t = ()
print(t)
print(type(t))
```

```
()
<class 'tuple'>
```

```
t = (10)
print(t)
print(type(t))
print(len(t))
```

```
10
<class 'int'>
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-19-23709a4a29c6> in <module>
      2 print(t)
      3 print(type(t))
----> 4 print(len(t))

TypeError: object of type 'int' has no len()
```

SEARCH STACK OVERFLOW

```
t = ('python')
print(t)
print(type(t))
```

```
python
<class 'str'>
```

```
t = (10,)
print(t)
print(type(t))
print(len(t))
```

```
(10,)
<class 'tuple'>
1
```

```
t = (1,2,3,4,5)
print(t)
print(type(t))
print(len(t))
```

```
(1, 2, 3, 4, 5)
<class 'tuple'>
5
```

```
t = 1,2,3,4,5,6
print(t)
print(type(t))
print(len(t))
```

```
(1, 2, 3, 4, 5, 6)
<class 'tuple'>
6
```

```python
x = 10
print(x)
print(type(x))
```

```
10
<class 'int'>
```

```python
x = 10,20
print(x)
print(type(x))
```

```
(10, 20)
<class 'tuple'>
```

```python
x = 10,
print(x)
print(type(x))
```

```
(10,)
<class 'tuple'>
```

multi-variable definition

```python
a,b,c = 10,20,30
print(a,b,c)
print(type(a))
print(type(b))
print(type(c))
```

```
10 20 30
<class 'int'>
<class 'int'>
<class 'int'>
```

```python
a = 10
b = 20
print('a =',a,' , b =',b)
print(id(a),id(b))
a,b = b,a  # swap logic
print('a =',a,' , b =',b)
print(id(a),id(b))
```

```
a = 10  , b = 20
9793376 9793696
a = 20  , b = 10
9793696 9793376
```

```python
t = (1,2,3,4,5)
print(t)
print(type(t))
t = list(t)
print(t)
print(type(t))
t[2] = 300
print(t)
print(type(t))
t = tuple(t)
print(t)
print(type(t))
```

```
(1, 2, 3, 4, 5)
<class 'tuple'>
[1, 2, 3, 4, 5]
<class 'list'>
[1, 2, 300, 4, 5]
<class 'list'>
(1, 2, 300, 4, 5)
<class 'tuple'>
```

```python
t = (1,2,3,4,5)
print(t)
```

```
(1, 2, 3, 4, 5)
```

```python
t = (1,2,3,4,5)
print(t,sep='***')
```

```
(1, 2, 3, 4, 5)
```

```python
s = 'python'
print(s,s,sep='***')
```

```
python***python
```

```python
t = (1,2,3,4,5)
print(*t,sep='***')
```

```
1***2***3***4***5
```

```python
s = 'python'
print(s,sep='|')
```

```
python
```

```python
s = 'python'
print(*s,sep='|')
```

```
p|y|t|h|o|n
```

```python
l = [1,2,3,4,5]
print(*l,sep='@')
```

```
1@2@3@4@5
```

```python
t = 1,2,3,4,5
a,b,c,d,e = t
print(a)
print(b)
print(c)
print(d)
print(e)
```

```
1
2
3
4
5
```

```python
l = [1,6,20]
x,y,z = l
print(x)
print(y)
print(z)
```

```
1
6
20
```

```python
s = 'python'
x1,x2,x3,x4,x5,x6 = s
print(x1)
print(x2)
print(x3)
print(x4)
```

```python
print(x5)
print(x6)
```

```
    p
    y
    t
    h
    o
    n
```

```python
s = range(5)
print(*s,sep='|')
```

```
    0|1|2|3|4
```

```python
print(type(s))
```

```
    <class 'range'>
```

```python
s = 'venkat'
#  ---v|e|n|k|a|t---
s1 = '|'.join(s)
print(s1.center(len(s1)+6,'-'))
```

```
    ---v|e|n|k|a|t---
```

```python
s = 'venkat'
# ---|||venkat|||---
s1 = s.center((len(s)*2),'|')
print(s1.center((len(s1)+6),'-'))
```

```
    ---|||venkat|||---
```

```python
s = 'venkat'
# venkat
#  venkat
#   venkat
#    venkat
#     venkat
#      venkat
for i in range(len(s)):
  print(' '*i,s)
```

```
    venkat
     venkat
      venkat
       venkat
        venkat
         venkat
```

```python
s = 'venkat'
# v
#  e
#   n
#    k
#     a
#      t
for i in range(len(s)):
  print(' '*i,s[i])
```

```
    v
     e
      n
       k
        a
         t
```

```python
l = [1,2,3,4,5,6,7,8,9,10]
```

✓ 0s   completed at 1:55 PM   ● ✕