

tuple-ds

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1 Tuple

1. Tuple is one among the data collections in python which is used for storing multiple values onto a single variable.
2. Tuple is created using round brackets and can have elements of any type.
3. Characteristic of a tuple is,
 1. Ordered
 2. Indexable
 3. Countable
 4. Immutable
 5. Allows duplicate values
 6. Empty tuple is possible
 7. Used in places where heterogenous data set with immutable property is required.

2 Basic Operation

1. len
2. type
3. Check for a sequence
4. Accessing
5. Looping

```
[ ]: # Tuple  
  
a=('apple','mango','banana','kiwi','mango','chickoo','apple','plum','peach')
```

```
[ ]: # Length  
  
print(len(a))
```

9

```
[ ]: # Type  
  
print(type(a))
```

<class 'tuple'>

```
[ ]: # Check for a sequence
```

```
if 'mango' in a:
    print("Yes")
else:
    print("No")
```

Yes

```
[ ]: # Accessing
```

```
a[4]
```

```
[ ]: 'mango'
```

```
[ ]: a[2:7]
```

```
[ ]: ('banana', 'kiwi', 'mango', 'chickoo', 'apple')
```

```
[ ]: a[-5:-1]
```

```
[ ]: ('mango', 'chickoo', 'apple', 'plum')
```

3 Looping

```
[ ]: for i in a:
    print("It's a",i)
```

```
It's a apple
It's a mango
It's a banana
It's a kiwi
It's a mango
It's a chickoo
It's a apple
It's a plum
It's a peach
```

```
[ ]: for i in range(len(a)):
    print("The fruit is",a[i])
```

```
The fruit is apple
The fruit is mango
The fruit is banana
The fruit is kiwi
The fruit is mango
The fruit is chickoo
The fruit is apple
```

The fruit is plum
The fruit is peach

```
[ ]: i=0
      while i<len(a):
          print(a[i])
          i+=1
```

apple
mango
banana
kiwi
mango
chickoo
apple
plum
peach

4 Advanced Operations

- Once after creating a tuple, we cannot do any changes like adding, removing items from it, since it is immutable.
- We need to convert it to list and do all the changes and back again to tuple.

```
[ ]: # Unpacking a tuple

b=['mango','apple','mulberry','kiwi','peach','carrot','cucumber']
c,d,e,f,g,h,i=b
print(c)
print(d)
print(e)
print(f)
print(g)
print(h)
print(i)
```

mango
apple
mulberry
kiwi
peach
carrot
cucumber

```
[ ]: z,*v,m=b
      print(z)
      print(v)
```

```
print(m)
```

```
mango  
['apple', 'mulberry', 'kiwi', 'peach', 'carrot']  
cucumber
```

5 Joining

```
[ ]: c=(1,2,3,4)  
     d=(7,4,7,8)  
     e=c+d  
     print(e)
```

```
(1, 2, 3, 4, 7, 4, 7, 8)
```

6 Tuple Methods

```
[ ]: e.count(7)
```

```
[ ]: 2
```

```
[ ]: e.index(4)
```

```
[ ]: 3
```