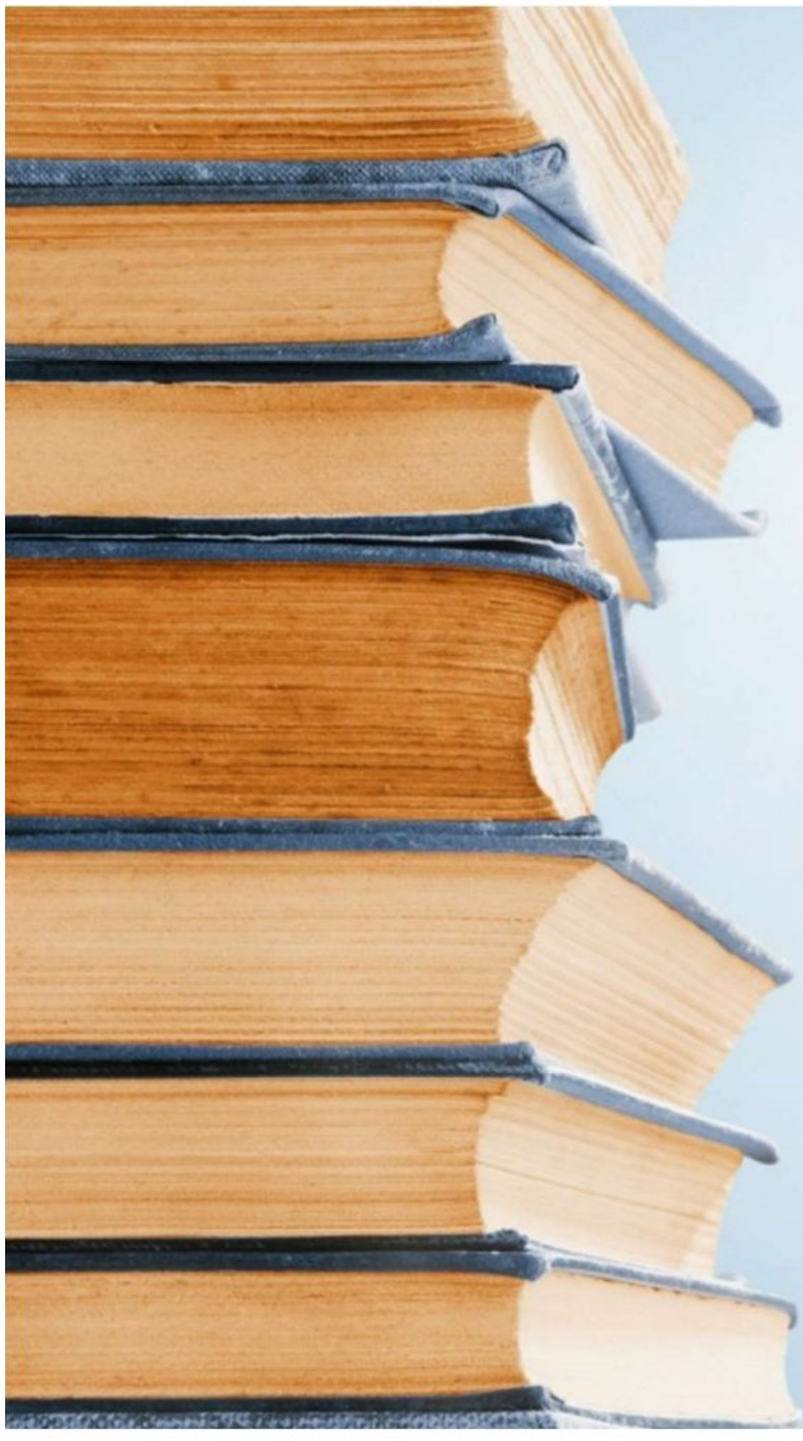

Tuple

A tuple is another sequence data type that is similar to the list. A tuple consists of a number of values separated by commas. Unlike lists, however, tuples are enclosed within parentheses.

Tuple manipulations and operations.

tuples.py - D:\Documents\Python\tuples.py (3.6.4)

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```
# Tuple manipulation and operations
x= ( 3,5,1,"Python",12.5,'\u0915')
print ( x)
# Iteration
for i in x:
    print ( i)
# Indexing
print ( x[2])
# Concatenation
y= ( 10,21.02)
print ( x+y)
# Length of tuple
print ( len ( x) )
# Address of tuple
print ( id ( x) )
print ( id ( x+y) )
```

Python 3.6.4 Shell

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```
Python 3.6.4 ( v3.6.4:d48eceb, Dec 19 2017, 06:04:45)  [MSC v.1900
Type "copyright", "credits" or "license ()  " for more information.
>>>
========== RESTART: D:\Documents\Python\tuples.py ==
 ( 3, 5, 1, 'Python', 12.5, 'क')
3
5
1
Python
12.5
क
1
 ( 3, 5, 1, 'Python', 12.5, 'क', 10, 21.02)
6
64920408
67423856
```

***Tuple is a immutable data type. So it does not support all the operations like list or other muttable data types**

Program to unpack a tuple in variables.

Tuple_unpacking_values.py - D:/Documents/Python/Tuple_unpacking_values.py (3.6.4)

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```
# Progrma to unpack values of a tuples into variables
a= ( 5,4,3)
k,l,m=a
print ( k,l,m, sep="\n")
```

Python 3.6.4 Shell

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```
Python 3.6.4 ( v3.6.4:d48eceb, Dec 19 2017, 06:04:45
Type "copyright", "credits" or "license ()  " for more info
>>>
========== RESTART: D:/Documents/Python/Tuple_
5
4
3
```

Program to create a tuple and sort it.

List_from_user_input.py - D:/Documents/Python/List_from_user_input.py (3.6.4)

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```
n=int ( input ( "How many no you want to insert: ") )
for i in range ( n)  :
    x=int ( input ( "Enter an integer value: ") )
    tup=tup+ ( x,)
print ( "Type=",type ( tup)  ,"Elements=",tup)
# Sorting a tuple using sorted function
sorttup=sorted ( tup)
print ( "Type=",type ( sorttup)  ,"Elements=",sorttup)
# Sorting a tuple using self code
# TUPLE is immutable so we need to first convert it in list
tup=list ( tup)
for i in range ( len ( tup) ) :
    for j in range  ( i+1,len ( tup) ) :
        if tup[i] >tup[j]:
            a=tup[i]
            b=tup[j]
            tup[i]=b
            tup[j]=a
print ( "Type: ",type ( tup)  ,"Element: ", tup)
# Convert list into tuple
tup=tuple ( tup)
print ( "Type: ",type ( tup)  ,"Element: ", tup)
```

Python 3.6.4 Shell

File Edit Shell Debug Options Window Help

```
Python 3.6.4  ( v3.6.4:d48eceb, Dec 19 2017, 06:04:45)
Type "copyright", "credits" or "license ()  " for more infor
>>>
========== RESTART: D:/Documents/Python/List_
How many no you want to insert: 4
Enter an integer value: 3
Enter an integer value: 2
Enter an integer value: 4
Enter an integer value: 5
Type= <class 'tuple'> Elements=  ( 3, 2, 4, 5)
Type= <class 'list'> Elements= [2, 3, 4, 5]
Type:  <class 'list'> Element:  [2, 3, 4, 5]
Type:  <class 'tuple'> Element:  ( 2, 3, 4, 5)
>>>
```

Program to count element based on data type

Tuple_count_value_of_similar_data_type.py - D:\Documents\Python\Tuple_count_value_of_similar_

File Edit Format Run Options Window Help

```
# Program to count element with different data types in a tuple
tup= (12,"Rajat",10,5.2,6,True,6.51,3,"Hello",False)
string=0
integer=0
flot=0
ui =0
boolean=0
for i in tup:
    if type (i) ==int:
        integer+=1
    elif type (i) == str:
        string+=1
    elif type (i) ==float:
        flot+=1
    elif type (i) ==bool:
        boolean+=1
    else:
        ui+=1
print (tup)
print ("Integer elements: ",integer)
print ("Float elements: ",flot)
print ("Boolean elements: ",boolean)
print ("String elements: ",string)
if ui>0:
    print ("Unidentify elements: ",ui)
```

Python 3.6.4 Shell

File Edit Shell Debug Options Window Help

```
Python 3.6.4 (v3.6.4:d48eceb, Dec 19 2017, 06:04:45
Type "copyright", "credits" or "license () " for more info
>>>
=== RESTART: D:\Documents\Python\Tuple__count__va
 (12, 'Rajat', 10, 5.2, 6, True, 6.51, 3, 'Hello', False)
Integer elements:  4
Float elements:  2
Boolean elements:  2
String elements:  2
>>>
```