Python Programming

Presented by

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Tuple

Python Tuple is used to store the sequence of immutable python objects. Tuple is similar to lists since the value of the items stored in the list can be changed whereas the tuple is immutable and the value of the items stored in the tuple can not be changed.

A tuple can be written as the collection of comma-separated values enclosed with the small brackets.

Ex:-**Creation of a tuple:**

tuple name= (element1,element2,….element)

- T1 = (101, "Ayush", 22)

empty tuple can be created as follows.

T3 = ( )

The tuple with a single value must include a comma

T4=(3,) // if you write T=(3) a is considered as a integer element

Example

```
tuple1 = tuple(input("Enter the tuple elements ..."))
print(tuple1)
count = 0
for i in tuple1:
    print("tuple1[%d] = %s"%(count, i));
```

if we try to reassign the items of a tuple, we would get an error as the tuple object doesn't support the item assignment.

Update a tuple:

We can’t update but we can join this tuple and assign it to a new tuple.

```
 a=(1,2,3,4)  # a can’t be change
 b=(5,6,7,8) # b can’t be changed
 c=a+b
 print(c)
o/p: (1,2,3,4,5,6,7,8)
```

Example

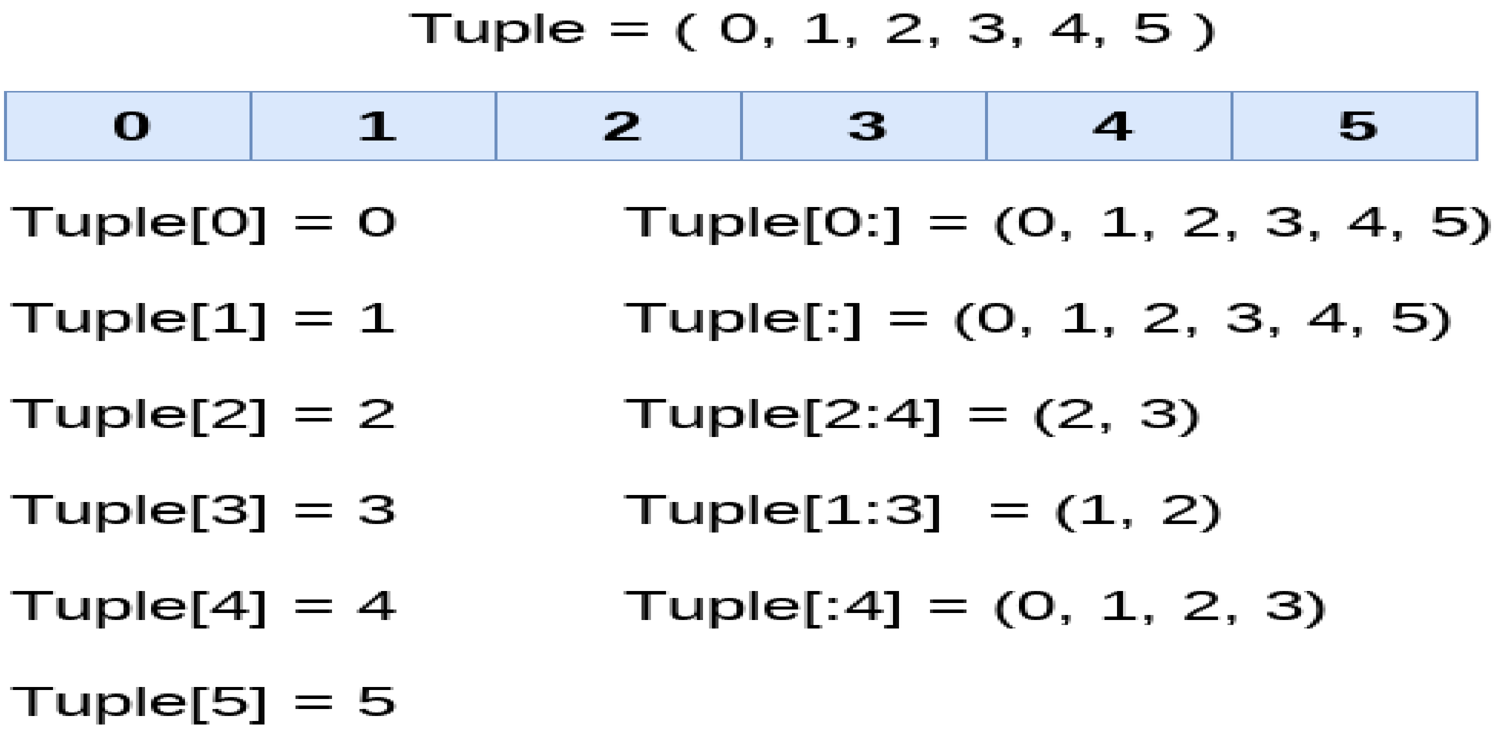
Deletion an element f a tuple(del,pop,remove can’t use with tuple)

a=(1,2,3,4,5)

del a [1] can’t possible

del(a) # it is possible we delete full tuple

Accessing elements



Tuple = (0, 1, 2, 3, 4, 5)

0	1	2	3	4	5

Tuple[0] = 0

Tuple[1] = 1

Tuple[2] = 2

Tuple[3] = 3

Tuple[4] = 4

Tuple[5] = 5

Tuple[0:] = (0, 1, 2, 3, 4, 5)

Tuple[:] = (0, 1, 2, 3, 4, 5)

Tuple[2:4] = (2, 3)

Tuple[1:3] = (1, 2)

Tuple[:4] = (0, 1, 2, 3)

Tuple operations

Operator	Description	Example

Repetition	The repetition operator enables the tuple elements to be repeated multiple times.	T1=(1,2,3,4,5)
		T2=(6,7,8,9)
		T1*2 = (1, 2, 3, 4, 5, 1, 2, 3, 4, 5)

Concatenation	It concatenates the tuple mentioned on either side of the operator.	T1+T2 = (1, 2, 3, 4, 5, 6, 7, 8, 9)
Membership(in or not in)	It returns true if a particular item exists in the tuple otherwise false.	print (2 in T1) prints True.
Iteration	The for loop is used to iterate over the tuple elements.	for i in T1: print(i)**Output**1 2 3 4 5
len	It is used to get the length of the tuple.	len(T1) = 5

Inbuilt functions

SN	Function	Description
1	cmp (tuple1, tuple2)	It compares two tuples and returns true if tuple1 is greater than tuple2 otherwise false.
2	len(tuple)	It calculates the length of the tuple.
3	max(tuple)	It returns the maximum element of the tuple.
4	min(tuple)	It returns the minimum element of the tuple.
5	tuple(seq)	It converts the specified sequence to the tuple. string to tuple or list to tuple

Comparison b/w list and tuple

SN	List	Tuple
1	T1.index(10)	It gives the index value of the corresponding element in the tuple.
2	T1.count(5)	It returns the number of times the element occurred in the tuple

3	tuple(List)=(1,2,3,4)
	tuple(“hello”)
		List=[1,2,3,4]
		(‘h’,’e’,’l’,’l’,’o’)

Comparison b/w list and tuple

SN	List	Tuple
1	The literal syntax of list is shown by the [].	The literal syntax of the tuple is shown by the ().
2	The List is mutable.	The tuple is immutable.
3	The List has the variable length.	The tuple has the fixed length.
4	The list provides more functionality than tuple.	The tuple provides less functionality than the list.
5	The list Is used in the scenario in which we need to store the simple collections with no constraints where the value of the items can be changed.	The tuple is used in the cases where we need to store the read-only collections i.e., the value of the items can not be changed. It can be used as the key inside the dictionary.

Thank you!