PYTHON TUPLE

TUPLE:

- A **tuple** is a sequence of immutable **Python** objects.
- **Tuples** are sequences, just like lists.
- The differences between **tuples** and lists are, the **tuples** cannot be changed unlike lists and **tuples** use parentheses (), whereas lists use square brackets [ ].
- Creating a **tuple** is as simple as putting different comma-separated values.
- It supports negative index.

TUPLE EXAMPLE:

```
>>> tuple= (“omega ”,”mue” ,”gamma”)

>>>print(tuple)
```

Output:

```
(‘omega’,’mue’,’gamma’)
```

Python Single Object Tuple Example:

- For a single valued tuple .

Example:

```
>>> tuple= (25)

>>>tuple

25
```

S.NO.	OPERATION	DESCRIPTION	SYNTAX
1.	sum	The sum() method adds the items of an iterable and returns the sum.	sum(tuple)
2.	max	The max() method returns the largest element in an iterable or largest of two or more parameters.	max(tuple)
3.	min	The min() method returns the smallest element in an iterable or smallest of two or more parameters.	min(tuple)
4.	all	The all() method returns true when all elements in the given iterable are true .if not ,it returns false.	all(tuple)
5.	any	The any() method returns true if any element of an iterable is true.if not,any() returns false.	any(tuple)
6.	reversed	The reversed() method returns the reversed iterator of the given sequence.	list(reversed(tuple))
7.	sorted	The sorted method returns a sorted list from the given iterable.	sorted(tuple)
8.	index	The index() method finds the first occurrence of the specified value.	tuple.index()
9.	count	The count() method returns the number of times a specified value occurs in a tuple.	tuple.count
10.	del	The del() method is used to delete the tuple	del tuple
11.	len	The len() method is used to count the total number of elements in a tuple.	len(tuple)
12.	slice	The slice() constructor creates a slice object representing the set of indices specified by range (start,stop,step).	tuple[start:stop]
13.	concatenation	The concatenation is used to add two or more tuples.	tuple1+tuple2
14.	membership	Membership is defined by boolean operation (in,not in)which will be defined as true or false.	In not in

15.	Nested tuple	The nested tuple is used to create a tuple with in the tuple.	tuple2=tuple1,()

Example programs for the given tuple operations :

1.python program to find the sum of elements in a tuple.

```
>>>tuple= (2,3,4,5,6,7)
>>>sum(tuple)
```

Output:

27

2.python program to find the largest element in a tuple.

```
>>> tuple= (2,3,4,5,6,7)
>>>max(tuple)
```

Output:

7

3.python program to find the smallest element in a tuple.

```
>>> tuple= (2,3,4,5,6,7)
>>>min(tuple)
```

Output:

2

4.python program if all elements in a tuple are true or false.

```
>>> tuple= (2,3,4,5,6,7)
```

```
>>>all(tuple)
```

Output:

True

5.python program if any of the element is true or false.

Ex-1 :-

```
>>> tuple= (2,3,4,5,6,7)
>>>any(tuple)
```

Output:

True

Ex-2 :-

```
>>> tuple= ()
>>>any(tuple)
```

Output:

False

6.python program to reverse the elements in tuple.

```
>>> tuple=('p','y','t','h','o','n')
>>> list(reversed(tuple))
```

Output:

['n', 'o', 'h', 't', 'y', 'p']

7.python program to write the elements in ascending order.

```
>>> tuple=('p','y','t','h','o','n')
>>>sorted(tuple)
```

Output:

```
['h', 'n', 'o', 'p', 't', 'y']
```

8.python program to find the position of element in the tuple.

```
>>> tuple= (2,3,4,5,6,7)
>>>tuple.index(4)
```

Output:

```
2
```

9.python program to count the repeated element in a tuple.

Ex-1:

```
>>> tuple=(3,3,4,5,6,6)
>>> tuple.count(6)
```

Output:

```
2
```

Ex-2:

```
>>> tuple= (2,3,4,5,6,7)
>>> tuple.count(9)
```

Output:

```
0
```

10.*python program to delete a given tuple.*

```
>>>tuple=(1,2,3,4)
>>>del tuple
```

Output:

11.python program to find the total number of elements in tuple.

```
>>> tuple= (2,3,4,5,6,7)
>>> len(tuple)
```

Output:

6

12.python program for slicing a tuple.

Ex-1:-

```
>>>tuple=(2,3,4,5,6,7)
>>> tuple[0:5]
```

Output:

(2, 3, 4, 5, 6)

Ex-2:-

```
>>>tuple=(2,3,4,5,6,7)
>>>tuple[0:5+1]
```

Output:

(2, 3, 4, 5, 6,7)

Ex-3:-

```
>>>tuple=(2,3,4,5,6,7)
```

```
>>> tuple[-4:-1]
```

Output:

(4, 5, 6)

13.python program for adding the two tuples(concatination).

```
>>>tuple1=(1,2,3,4,5)
>>>tuple2=(6,7,8,9,10)
>>>tuple1+tuple2
```

Output:

(1,2,3,4,5,6,7,8,9,10)

14.python program for using membership operations in a tuple.

Ex-1:

```
>>>tuple=(1,2,3,4,5)
>>>2 in tuple
```

Output:

True

Ex-2:

```
>>>tuple=(1,2,3,4,5)
>>>2 not in tuple
```

Output:

False

15.python program to create a nested tuple.

```
>>>tuple1=(1,2,3,4,5)
```

```
>>>tuple2=tuple1,("iiit  sklm")
>>>tuple2
```

Output:

```
((1, 2, 3), 'iiit sklm')
```

...The end...

....Thank you....