Python Tuple: Operators and Functions

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Tuple functions

marks = (34, 45, 23, 37, 48, 42)

- len(*tupleobject*)

```
>>> len(marks)
6
```

- max(*tupleobject*)

```
>>> max(marks)
48
```

- min(*tupleobject*)

```
>>> min(marks)
23
```

- sum(*tupleobject*)

```
>>> sum(marks)
229
```

Tuple functions

- tuple(seq) – turns a sequence into a tuple

```
>>> tuple([1,2,3,4])
(1, 2, 3, 4)
```

- any(*tupleobject*) – returns True if any of the tuple element is true.

```
>>> tp = (1,0,3,5)
>>> any(tp)
True
```

- all(*tupleobject*) - returns True only if all the tuple elements are true.

```
>>> all(tp)
False
```

Tuple functions

- sorted(*tupleobject*) - sorts the tuple values and return sorted values as a list

```
>>> marks = (34, 45, 23, 37, 48, 42)
>>> ascSorted = sorted(marks)
>>> print(ascSorted)
[23, 34, 37, 42, 45, 48]
>>> type(ascSorted)
<class 'list'>
```

- No change in the original tuple

```
>>> marks
(34, 45, 23, 37, 48, 42)
```

Tuple methods

- A method modifies the construct
- Usage – *tupleobject.methodname*

- index() – takes a single argument and return the index of the argument in the tuple

```
>>> marks = (34, 45, 23, 37, 48, 42)
>>> marks.index(37)
3
```

Tuple methods

- count() – accepts an item and returns the number of occurrences of the item in the tuple

```
>>> numbers = (1,3,5,7,3,6,1)
>>> numbers.count(3)
2
```

Operators allowed on Tuple

- Concatenation
- Repetition
- Membership
- Identity
- Logical

Concatenation of tuples

```
>>> tuple1 =(1,2,3)
>>> tuple2 = (4,5,6)
>>> tuple3 = tuple1+tuple2
>>> tuple3
(1, 2, 3, 4, 5, 6)
```

Repetition of tuples

```
>>> tuple1 =(1,2,3)
>>> tuple1*2
(1, 2, 3, 1, 2, 3)
```

- Returns a replicated object.
- Original tuple remains the same.

```
>>> tuple1
(1, 2, 3)
```

Member ship on Tuple

```
>>> tuple1 = (1,2,3)
>>> 1 in tuple1
True
>>> 3 not in tuple1
False
```

Identity operator on tuple

```
>>> tuple1 = (1,2,3)
>>> tuple2 = (1,2,3)
>>> tuple1 is tuple2
False
```

- Identity operator compares the objects w.r.t their identity.
- No two tuple objects have the same identity in Python.

Logical operators on tuple

- All the logical operators are allowed on a tuple

```
>>> tuple1 =(1,2,3)
>>> tuple2 = (1,2,3)
>>> tuple1 == tuple2
True
>>> tuple1 > tuple2
False
>>> tuple1 < (4,5)
True
```