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TUPLES

ZOOMING

Tuples

- It is a collection of object much like a list.

- The main different between tuple and list is that tuples are immutable.

- It represent as ( ).

- Values of a tuple are syntactically separated by commas.

- Tuple elements cannot be changes.

Tuples - Create

```
Tuple1 = () //empty tuple

Tuple2 = ('zooming', 'For') //tuple with strings

list1 = [1, 2, 4, 5, 6]
Tuple3 = tuple (list1) //tuple with the use of list

Tuple4 = ('zooming',) * 3 //tuple with repetition

Tuple5 = (5, 'Welcome', 7, 'zooming') //tuple with mixed datatypes
```

Tuples - Concatenation

- Concatenation of tuple is the process of joining of two or more Tuples.

- Concatenation is done by the use of '+' operator.

- Concatenation of tuples is done always from the end of the original tuple.

- Other arithmetic operations do not apply on Tuples.

```python
# Concatenaton of tuples
Tuple1 = (0, 1, 2, 3)
Tuple2 = ('Zooming', 'For', 'stud')

Tuple3 = Tuple1 + Tuple2

print("\nTuples after Concatenaton: ")
print(Tuple3
```

```
Tuples after Concatenaton:
(0, 1, 2, 3, 'Zooming', 'For', 'stud')
```

Tuples - Slicing

```python
# with Numbers
Tuple1 = tuple('ZOOMING')

# From First element
print(Tuple1[1:])

# Reversing the Tuple
print(Tuple1[::-1])

# Printing elements of a Range
print(Tuple1[2:5])
```

('O','O','M','I','N','G')

('G','N','I','M','O','O','Z')

('O','M','I')

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<u>Tuples</u> - Deleting

- Tuples are immutable and hence they do not allow deletion of a part of it.
- Entire tuple gets deleted by the use of del() method.
- **Note-** Printing of Tuple after deletion results to an Error.

```python
# Deleting a Tuple

Tuple1 = (0, 1, 2, 3, 4)
del Tuple1

print(Tuple1)
```

NameError: name 'Tuple1' is not defined

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Tuple – Built-in-Methods

BUILT-IN FUNCTION	DESCRIPTION
all()	Returns true if all element are true or if tuple is empty
any()	return true if any element of the tuple is true. if tuple is empty, return false
len()	Returns length of the tuple or size of the tuple
enumerate()	Returns enumerate object of tuple
max()	return maximum element of given tuple
min()	return minimum element of given tuple
sum()	Sums up the numbers in the tuple
sorted()	input elements in the tuple and return a new sorted list
tuple()	Convert an iterable to a tuple.

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