Python Collections Type

There are four collection data types in the Python programming language:

- **List** is a collection which is ordered and changeable. Allows duplicate members.
- **Tuple** is a collection which is ordered and unchangeable. Allows duplicate members.
- **Set** is a collection which is unordered and unindexed. No duplicate members.
- **Dictionary** is a collection which is unordered, changeable and indexed. No duplicate members.

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List

thislist = ["iOS", "Android", "JAVA"]

print(thislist)

print(thislist[-1]) //Negative InA list is a collection which is ordered and changeable. In Python lists are written with square brackets.
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print(thislist[2:5]) // Range of Indexes

print(thislist[:4])   //items from the beginning

print(thislist[2:])   //and to the end:

thislist[1] = "PHP"   //Change Item Value

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Loop Through a List

```
for x in thislist:
  print(x)
```

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Check if Item Exists

```
if "iOS" in thislist:
  print("Yes, 'iOS' is in the list")
```

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List Length

```
print(len(thislist))
```

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Add Items

```
thislist.append("C")
thislist.insert(1, "C++")
thislist.remove("PHP")
thislist.pop()
del thislist[0]
del thislist
thislist.clear()
```

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Copy a List

```
mylist = thislist.copy()
```

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Two Lists

```
list1 = ["a", "b" , "c"]
list2 = [1, 2, 3]

# list3 = list1 + list2
print(list3)

list1 = ["a", "b" , "c"]
list2 = [1, 2, 3]

# list1.extend(list2)
print(list1)
```

Tuple

A tuple is a collection which is ordered and unchangeable. In Python tuples are written with round brackets.

```
thistuple = ("iOS", "Android", "JAVA")

print(thistuple[1])
print(thistuple[-1])
print(thistuple[2:5])
```

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Loop Through a Tuple

```
for x in thistuple:

  print(x)
```

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Check if Item Exists

```
if "iOS" in thistuple:
  print("Yes, ‘iOS’is in the tuple")
```

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```
print(len(thistuple))
```

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Add Items

Once a tuple is created, you cannot add items to it. Tuples are **unchangeable**.

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Remove Items

```
del thistuple
```

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Join Two Tuples

```
tuple1 = ("a", "b" , "c")
tuple2 = (1, 2, 3)

tuple3 = tuple1 + tuple2
print(tuple3)
```

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Dictionary

A dictionary is a collection which is unordered, changeable and indexed. In Python dictionaries are written with curly brackets, and they have keys and values.

```
thisdict =	{
  "id": "1",
  "name": "Sanket",
  "age": 29
}
print(thisdict)
```

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Accessing Items

```
x = thisdict["id"]
x = thisdict.get("id")
```

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Change Values

```
thisdict =	{
  "id": "1",
  "name": "Sanket",
  "age": 29
}
thisdict["age"] = 20
```

Loop Through a Dictionary

```
# for x in thisdict:
  print(x)
```

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```
# for x in thisdict.values():
  print(x)
```

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Loop through both keys and values, by using the items() method:

```
for x, y in thisdict.items():
  print(x, y)
```

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Check if Key Exists

```
thisdict =        {
  "id": "1",
  "name": "Sanket",
  "age": 29
}
if "age" in thisdict:
  print("Yes, ‘age’ is one of the keys in the thisdict dictionary")
```

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Dictionary Length

```
print(len(thisdict))
```

Adding Items

```
thisdict =        {
  "id": "1",
  "name": "Sanket",
  "age": 29
}
thisdict["sub"] = "Python"
```

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Removing Items

```
thisdict.pop("age")
del thisdict["age"]
thisdict.clear()
```

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Copy a Dictionary

```
mydict = thisdict.copy()
```