Tuple

- Tuples are used to store multiple items in a single variable.
- A tuple is a collection which is ordered and unchangeable.
- Tuples are written with round brackets.

In [3]:

```
AI_Tuple=('Machine learning', 'Deep learning','Natural Language Processing','Computer Vision',4)
```

In [6]:

```
#Lenght tuple
print(len(AI_Tuple))
```

```
5
```

In [7]:

```
# type()
type(AI_Tuple)
```

Out[7]:

```
tuple
```

In [8]:

```
#Access Tuple Items
print(AI_Tuple[0])
```

```
Machine learning
```

In [11]:

```
print(AI_Tuple[3])
```

```
Computer Vision
```

In [13]:

```
#Negative Indexing
print(AI_Tuple[-1])
```

```
4
```

In [15]:

```
print(AI_Tuple[-2])
```

```
Computer Vision
```

In [20]:

```
# Range of Indexes
print(AI_Tuple[0:len(AI_Tuple)])
```

```
('Machine learning', 'Deep learning', 'Natural Language Processing', 'Computer Vision', 4)
```

In [21]:

```
print(AI_Tuple[len(AI_Tuple):0:-1])
```

```
(4, 'Computer Vision', 'Natural Language Processing', 'Deep learning')
```

In [27]:

```
# Change Tuple Values
tuple_list=list(AI_Tuple)
tuple_list[-1]='Robotics'
list_tuple=tuple(tuple_list)
print(list_tuple)
type(list_tuple)
```

```
('Machine learning', 'Deep learning', 'Natural Language Processing', 'Computer Vision', 'Robotics')
```

Out[27]:

```
tuple
```

In [28]:

```
#Join Two Tuples
tuple1 = ("a", "b" , "c")
tuple2 = (1, 2, 3)

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

```
('a', 'b', 'c', 1, 2, 3)
```

In [30]:

```
# Multiply the fruits tuple by 2:
fruits = ("apple", "banana", "cherry")
mytuple = fruits * 2

print(mytuple)
```

```
('apple', 'banana', 'cherry', 'apple', 'banana', 'cherry')
```

Set

- Sets are used to store multiple items in a single variable.
- A set is a collection which is unordered, unchangeable*, and unindexed.
- Sets are written with curly brackets.

In [34]:

```
AI_set={'Machine learning', 'Deep learning','Natural Language Processing','Computer Vision',4}

'''
Note: Sets are unordered, so you cannot be sure in which order the items will appear.
'''
print(AI_set)
```

```
{4, 'Deep learning', 'Natural Language Processing', 'Machine learning', 'Computer Vision'}
```

In [35]:

```
#Duplicate Value
'''
Duplicate values will be ignored:
'''
thisset = {"apple", "banana", "cherry", "apple"}

print(thisset)
```

```
{'cherry', 'banana', 'apple'}
```

In [36]:

```
#Lenght of set

print(len(thisset))
```

```
3
```

In [37]:

```
#Type()
type(thisset)
```

Out[37]:

```
set
```

In [44]:

```
# Access Items
'''You cannot access items in a set by referring to an index or a key But you can used for loop and in keyword'''
for x in AI_set:
    print(x)
```

```
4
Deep learning
Natural Language Processing
Machine learning
Computer Vision
```

In [47]:

```
# Check if "Deep learning" is present in the set:
print('Deep learning' in AI_set)
```

```
True
```

In [52]:

```
# Add Sets
AI_set_1={'Machine learning', 'Deep learning','Natural Language Processing','Computer Vision'}
AI_set_2={'ML','DL','NLP','CV'}
AI_set_1.update(AI_set_2)
print(AI_set_1)
```

```
{'NLP', 'Deep learning', 'Natural Language Processing', 'Machine learning', 'Computer Vision', 'CV',
'DL', 'ML'}
```

In [55]:

```
#Remove Item
AI_set_1.remove('ML')
AI_set_1
```

Out[55]:

```
{'CV',
 'Computer Vision',
 'DL',
 'Deep learning',
 'NLP',
 'Natural Language Processing'}
```

In [56]:

```
#clear
AI_set_2.clear()
print(AI_set_2)
```

```
set()
```

In [57]:

```
#del
del AI_set_2
```

In [ ]:

```
#To learn more methods on a set visit this site
#https://www.programiz.com/python-programming/methods/set
```