Tuples

- A tuple in python is similar to a list
- The difference between the two is that we cannot change the elements of a tuple
- Once it is assigned whereas we can change the elements of a list

In [29]:
```
my_tuple=()
print(my_tuple)
```

```
()
```

In [30]:
```
teju=("hello how are you")
print(teju)
```

```
hello how are you
```

Index

- We can use index operator [] to access an item in a tuple,where the index starts from 0

In [31]:
```
teju=("h","i","m","e","s","h")
```

In [32]:
```
print(teju[0])
print(teju[1])
print(teju[2])
print(teju[3])
print(teju[4])
print(teju[5])
```

```
h
i
m
e
s
h
```

Negative Index

- Python allows negative indexing for its sequences.

In [34]:
```
teju=("h","i","m","e","s","h")
```

In [36]:
```
print(teju[-2])
```

```
s
```

In [37]:
```
print(teju[-0])
print(teju[-4])
print(teju[-5])
print(teju[-3])
print(teju[-2])
print(teju[-1])
```

```
h
m
i
e
s
h
```

Slicing

We can access a range of items in a tuple by using the slicing operator colon

In [38]:
```
teju=("h","i","m","e","s","h")
```

In [42]:
```
print(teju[1:3])
```

```
('i', 'm')
```

In [43]:
```
print(teju[3:6])
```

```
('e', 's', 'h')
```

In [44]:
```
print(teju[0:4])
```

```
('h', 'i', 'm', 'e')
```

In [45]:
```
print(teju[0:6])
```

```
('h', 'i', 'm', 'e', 's', 'h')
```

Count

The count() method returns the number of times a specified value appears in the tuple

In [55]:
```
teju=(9,0,5,2,8,0,3,1,2,9)
g=teju.count(2)
print(g)
```

```
2
```

In [56]:
```
teju=(9,0,5,2,8,0,3,1,2,9)
p = teju.count(9)
print(p)
```

```
2
```

Len

Return the number of elements in a tuple

In [57]:
```
teju=(9,0,5,2,8,0,3,1,2,9)
print(len(teju))
```

```
10
```

In [58]:
```
teju=("p","a","p","p","a")
print(len(teju))
```

```
5
```

Min

returns the elements from the tuple with minimum values

In [65]:
```
teju=("h","i","m","e","s","h")
min(teju)
```

Out[65]:
```
'e'
```

Max

returns the elements from the tuple with minimum value

In [64]:
```
teju=("h","i","m","e","s","h")
max(teju)
```

Out[64]:
```
's'
```

Sum

- Python sum () function that returns the sum of all numerical values provided in a iterate
- The numerical values that are passed in the function can be integer and floating-point numbers as well
- In python one of the most used functions is the sum

In [66]:
```
teju=(9,0,5,2,8,0,3,1,2,9)
result= sum(teju)
print(result)
```

```
39
```

Sort

The sort() method sorts the items of a list in ascending or descending order

In [67]:
```
def teju(p):
    return p['year']

cars =[
    {'car':'ford','year': 2005},
    {'car': 'mitsubishi','year':2000},
    {'car':'BMW','year':2019},
    {'car':'vw','year':2011}
]

cars.sort(key=teju)
print(cars)
```

```
[{'car': 'mitsubishi', 'year': 2000}, {'car': 'ford', 'year': 2005}, {'car': 'vw', 'year': 2011}, {'car': 'BMW', 'year': 2019}]
```

In [ ]:
```
```