Indexing

In [30]:
```
# make a string
a = "Samosa Pakora"
a
```

Out[30]:
```
'Samosa Pakora'
```

In [31]:
```
a[0]
```

Out[31]:
```
'S'
```

In [32]:
```
a[7]
```

Out[32]:
```
'P'
```

In [33]:
```
a[6]
```

Out[33]:
```
' '
```

In [34]:
```
# Length of indeces
len(a)
```

Out[34]:
```
13
```

In [35]:
```
# Last index is inclusive
a[0:6]
```

Out[35]:
```
'Samosa'
```

In [36]:
```
a[-1]
```

Out[36]:
```
'a'
```

In [37]:
```
a[-6:13]
```

Out[37]:
```
'Pakora'
```

In [38]:
```
food = "biryani"
food
```

Out[38]:
```
'biryani'
```

String methods

In [39]:
```
len(food)
```

Out[39]: 7

In [40]:
```
food.capitalize()
```

Out[40]: 'Biryani'

In [41]:
```
food.upper()
```

Out[41]: 'BIRYANI'

In [42]:
```
food.lower()
```

Out[42]: 'biryani'

In [43]:
```
food.replace("b","sh")
```

Out[43]: 'shiryani'

In [44]:
```
# counting a specific alphabet in a string
name = "baba_aammar with dr Aammar tufail"
name
```

Out[44]: 'baba_aammar with dr Aammar tufail'

In [45]:
```
name.count("m")
```

Out[45]: 4

How to find index number in string

In [46]:
```
name.find("t")
```

Out[46]: 14

In [47]:
```
# How to split a string
name.split(" ")
name
```

Out[47]: 'baba_aammar with dr Aammar tufail'

In [48]:
```
name.split(" ")
```

Out[48]:
```
['baba_aammar', 'with', 'dr', 'Aammar', 'tufail']
```

Basic Data Structures in Python

1- Tuple 2- List 3- Dictionaries 4- Set

1- Tuple

In [49]:
```
tup1 = (1, "python", True, 2.5)
tup1
```

Out[49]:
```
(1, 'python', True, 2.5)
```

In [50]:
```
#type of tuple
type(tup1)
```

Out[50]:
```
tuple
```

Indexing of tuple

In [51]:
```
tup1[0]
```

Out[51]:
```
1
```

In [52]:
```
tup1[2]
```

Out[52]:
```
True
```

In [53]:
```
tup1[0:4]
```

Out[53]:
```
(1, 'python', True, 2.5)
```

In [54]:
```
len(tup1)
```

Out[54]:
```
4
```

In [55]:
```
tup2 = (2, "Aammar", 3.5, False)
#Cancatinate
tup1+tup2
```

Out[55]:
```
(1, 'python', True, 2.5, 2, 'Aammar', 3.5, False)
```

In [56]:
```
#Concatinate + repeat
tup1*2 +tup2
```

Out[56]:
```
(1, 'python', True, 2.5, 1, 'python', True, 2.5, 2, 'Aammar', 3.5, False)
```

In [57]:
```
tup3=(25, 31, 46,10)
min(tup3)
```

Out[57]:
```
10
```

In [58]:
```
max(tup3)
```

Out[58]:
```
46
```

2- List

-ordered collection of elements -enclosed in [] square brackets -Mutatable,

In [59]:
```
list1 = [1, "python", True, 2.5]
```

In [60]:
```
type(list1)
```

Out[60]:
```
list
```

In [61]:
```
len(list1)
```

Out[61]:
```
4
```

In [62]:
```
list1[2]
```

Out[62]:
```
True
```

In [63]:
```
list2 = [3, 5, "Aammar", "Codanics", 478, 53.2, False]
list2
```

Out[63]:
```
[3, 5, 'Aammar', 'Codanics', 478, 53.2, False]
```

In [64]:
```
list1+list2
```

Out[64]:
```
[1, 'python', True, 2.5, 3, 5, 'Aammar', 'Codanics', 478, 53.2, False]
```

In [65]:
```
list1 * 2
```

Out[65]:
```
[1, 'python', True, 2.5, 1, 'python', True, 2.5]
```

In [66]:
```
list1.reverse()
```

In [67]:
```
list1
```

Out[67]:
```
[2.5, True, 'python', 1]
```

In [68]:
```
list1.append("Codanics youtube channel")
list1
```

Out[68]:
```
[2.5, True, 'python', 1, 'Codanics youtube channel']
```

In [69]:
```
list1.count()
#How to useb
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
~\AppData\Local\Temp/ipykernel_9792/1858276072.py in <module>
----> 1 list1.count()
      2 #How to useb

TypeError: list.count() takes exactly one argument (0 given)
```

In [ ]:
```
list3 = [12, 12, 34, 56, 86]
list3
```

In [ ]:
```
list3.sort()
list3
```

3- Dictionaries

- Key and value
- {}
- Mutatable

In [ ]:
```
#Food and thier prices
food1 = {"Samosa":30, "Pakora": 100, "Raita":20, "Salad":50}
food1
```

In [ ]:
```
type(food1)
```

In [ ]:
```
# Extract data
keys1 = food1.keys()
keys1
```

In [ ]:

```
values1 = food1.values()
values1
```

In [ ]:
```
food1["Tikki"]=10
food1
```

In [ ]:
```
food2={"Dates":50, "Choclates":150}
food2
```

In [ ]:
```
# Concatinate
food1.update(food2)
food1
```

4- Sets

- Unordered and unidexed -{}
- No duplicates allowed

In [ ]:
```
s1 = {1,2,3,6,7,"Aammar","Codanics","Faisalabad"}
s1
```

In [ ]:
```
s1.add("Aammar")
s1
```

In [ ]:
```
s1.add("Aammar1")
s1
```