Basic of data structure

1- Tuple

2- list

3- Dictnary

4- Set

Tuple

All types of elements can be store

round perenthesis are use ()

you can't change them when data store

these are some rules for tuple data structure

In [ ]:
```
#for example
tuple = ("ijaz", 2.3, 5, True )
tuple
```

Out[ ]:
```
('ijaz', 2.3, 5, True)
```

indexing in tuple

In [ ]:
```
tuple[3]
```

Out[ ]:
```
True
```

In [ ]:
```
#in python tuple last element are exlclussive becouse it start form 0.
tuple[0:3]
```

Out[ ]:
```
('ijaz', 2.3, 5)
```

In [ ]:
```
tuple1 =(23.4, 4, True, "ali")
tuple1
```

Out[ ]:
```
(23.4, 4, True, 'ali')
```

In [ ]:
```
#adding of two tuple called in python language concatinate

tuple+tuple1
```

Out[ ]:
```
('ijaz', 2.3, 5, True, 23.4, 4, True, 'ali')
```

---

2 type of python data structure

2- LIST

-enclosed in [] square baracket

-mutatable you can change the value

In [ ]:
```
list =[ 4, False, "ali"]
list
```

Out[ ]:
```
[4, False, 'ali']
```

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

Out[ ]:
```
list
```

In [ ]:
```
list[2]
```

Out[ ]:
```
'ali'
```

In [ ]:
```
list2 = [ "ijaz",3,65,44556, False]
list2
```

Out[ ]:
```
['ijaz', 3, 65, 44556, False]
```

In [ ]:
```
list2*2
```

Out[ ]:
```
['ijaz', 3, 65, 44556, False, 'ijaz', 3, 65, 44556, False]
```

In [ ]:
```
list2.append(54)
list2
```

Out[ ]:
```
['ijaz', 3, 65, 44556, False, 54, 54, 54]
```

In [ ]:
```
list3 =[34,34,2,234,2423,523,432,423,2,45,252,32]
list3
```

Out[ ]:
```
[34, 34, 2, 234, 2423, 523, 432, 423, 2, 45, 252, 32]
```

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

In [ ]:
```
list3
```

Out[ ]:
```
[2, 2, 32, 34, 34, 45, 234, 252, 423, 432, 523, 2423]
```

3- Dictnary 3rd type of data structure in python

-unorderd collection of element

-key and values or present

-{ } curly bracket are used

-mutatable change the value

In [ ]:
```
food = {"samosa": 30, "pakorai": 10, "rayta":20, "salad":50}
food
```

Out[ ]:
```
{'samosa': 30, 'pakorai': 10, 'rayta': 20, 'salad': 50}
```

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

Out[ ]:
```
dict
```

In [ ]:
```
#how to extract data
keys1 =food.keys()
keys1
```

Out[ ]:
```
dict_keys(['samosa', 'pakorai', 'rayta', 'salad'])
```

In [ ]:
```
value=food.values()
value
```

Out[ ]:
```
dict_values([30, 10, 20, 50])
```

In [ ]:
```
#update the vlaues
food["samosa"]=50
```

In [ ]:
```
food
```

Out[ ]:
```
{'samosa': 50, 'pakorai': 10, 'rayta': 20, 'salad': 50}
```

4- Set

-unordered and on indexed

-use as {} bracers

-no dublicated allowed

In [ ]:
```
set1 = {1,2,3,4,5,23, "ijaz", "ali", "swat"}
set1
```

Out[ ]:
```
{1, 2, 23, 3, 4, 5, 'ali', 'ijaz', 'swat'}
```

In [ ]:
```
type(set1)
```

Out[ ]:
```
set
```

In [ ]:
```

```