In [1]:
```
# Live Quiz
```

In [5]:
```
lista = [1, 'xyz', True]
```

In [6]:
```
lista
```

Out[6]:
```
[1, 'xyz', True]
```

In [9]:
```
lista[::-1]
```

Out[9]:
```
[True, 'xyz', 1]
```

In [11]:
```
lista
```

Out[11]:
```
[1, 'xyz', True]
```

In [13]:
```
lista[:1],
```

Out[13]:
```
([1],)
```

In [14]:
```
lista[:2]
```

Out[14]:
```
[1, 'xyz']
```

In [15]:
```
l1 = [1,2,3]
```

In [16]:
```
li = tuple(l1)
```

In [18]:
```
li
```

Out[18]:
```
(1, 2, 3)
```

In [19]:
```
a = {1,2,4}
```

In [20]:
```
b = {1,4,6}
```

In [ ]:
```

```

In [23]:
```
# {1, 8, 8, 9} + (2, 88, 1)
```

In [25]:
```
# [2, 8, 1, 9] + 2
```

In [28]:
```
t1 = [(2,3,4),(2,3,4)]
```

In [29]:
```
t1
```

Out[29]:
```
[(2, 3, 4), (2, 3, 4)]
```

In [ ]:
```

```

In [38]:
```
s1 = {1, 7, 8, (2, 4)}
```

In [39]:
```
s1.add("xyz")
```

In [ ]:
```

```

In [46]:
```
s1 = {(2, 4), 1, 7, 8, 'xyz'}
```

In [47]:
```
s1.remove(8)
```

In [48]:
```
s1
```

Out[48]:
```
{(2, 4), 1, 7, 'xyz'}
```

In [ ]:
```

```

In [54]:
```
list1 = [3, 8, 1, 8]
```

In [55]:
```
s2 = set(list1)
```

In [56]:
```
s2
```

Out[56]:
```
{1, 3, 8}
```

In [ ]:
```

```

In [57]:
```
fs1 = frozenset({2, 7, 9})
```

In [58]:
```
# fs1.
```

In [ ]:
```

```

In [20]:
```
# 5 to -5
```

In [25]:
```
# r = range(5, -6, -1)
```

In [26]:
```
# list(r)
```

In [27]:
```
tt = tuple(range(5, -6, -1))
```

In [28]:
```
tt
```

Out[28]:
```
(5, 4, 3, 2, 1, 0, -1, -2, -3, -4, -5)
```

In [ ]:
```

```

In [30]:
```
# String, Array, List, Tuple, Set, Frozenset
```

In [33]:
```
# import collections
```

In [32]:
```
# collections.
```

In [ ]:
```

```

In [34]:
```
# List Constructor
```

In [43]:
```
# help(list)
```

In [38]:
```
ls = [2, 5, 7, 1]
```

In [46]:
```
data = list("xyz")
```

In [47]:
```
data
```

Out[47]:
```
['x', 'y', 'z']
```

In [ ]:
```

```

In [48]:
```
# Python

# Array
# List
```

In [ ]:
```

```

In [51]:
```
# import array
```

In [50]:
```
# array.array()
```

In [56]:
```
# x: int = 21474836473347234284
```

In [57]:
```
# type(x)
```

In [ ]:
```

```

In [ ]:
```

```

Python Dictionary

In [67]:
```
d1 = {}
```

In [69]:
```
d2 = dict({})
```

In [ ]:
```

```

In [76]:
```
product_info = {
    "Id": 5,
    "Name": "Laptop",
    "Brand": "Apple"
}
```

In [84]:
```
# print(end="\n")
```

In [87]:
```
# product_info = dict(
#     Id=5,
#     Name="Laptop",
#     Brand="Apple"
# )
```

In [88]:
```
product_info = {
    "Id": 5,
    "Name": "Laptop",
    "Brand": "Apple"
}
```

In [89]:
```
print(product_info)
```

```
{'Id': 5, 'Name': 'Laptop', 'Brand': 'Apple'}
```

In [93]:
```
product_info = {
    "Id": 5,
    "Name": "Laptop",
    "Brands": ["Apple", "Dell"]
}
```

In [96]:
```
# Nested Dict
product_info = {
    "Id": 5,
    "Name": "Laptop",
    "Brands": {
        "b1": "Apple",
        "b2": "Dell"
    }
}
```

In [ ]:
```

```

In [116]:
```
data = [["Id", 5], ["Name", "Laptop"], ["Brand", ["Apple", "Dell"]]]
```

In [117]:
```
# data[2]
```

In [118]:
```
# len(data)
```

In [119]:
```
# li = [3, 7, 8]
```

In [120]:
```
new_data = dict(data)
```

In [121]:
```
new_data
```

Out[121]:
```
{'Id': 5, 'Name': 'Laptop', 'Brand': ['Apple', 'Dell']}
```

In [97]:
```
product_info = {
    "Id": 5,
    "Name": "Laptop",
    "Brand": "Apple"
}
```

In [ ]:
```

```

In [124]:
```
keys = ['a', 'b', 'c']
```

In [125]:
```
defualt_value = 0
```

In [126]:
```
d_data = dict.fromkeys(keys, defualt_value)
```

In [127]:
```
d_data
```

Out[127]:
```
{'a': 0, 'b': 0, 'c': 0}
```

In [ ]:

In [129]:
```
stds = ["s1", "s2", "s3"]
```

In [130]:
```
users = ["ali", "bilal", "anas"]
```

In [133]:
```
dict(zip(stds, users))
```

Out[133]:
```
{'s1': 'ali', 's2': 'bilal', 's3': 'anas'}
```

In [ ]:

In [136]:
```
product_info = {
    "Id": 5,
    "Name": "Laptop",
    "Brand": "Apple"
}
```

In [137]:
```
# Access
```

In [138]:
```
product_info["Name"]
```

Out[138]:
```
'Laptop'
```

In [142]:
```
keys_data = list(product_info.keys())
```

In [143]:
```
keys_data
```

Out[143]:
```
['Id', 'Name', 'Brand']
```

In [144]:
```
product_info.values()
```

Out[144]:
```
dict_values([5, 'Laptop', 'Apple'])
```

In [146]:
```
list(product_info.items())
```

Out[146]:
```
[('Id', 5), ('Name', 'Laptop'), ('Brand', 'Apple')]
```

In [ ]:

In [148]:
```
product_info = {
    "Id": 5,
    "Name": "Laptop",
    "Brand": "Apple",
    "Name": "Mobile"
}
```

In [149]:
```
product_info
```

Out[149]:
```
{'Id': 5, 'Name': 'Mobile', 'Brand': 'Apple'}
```

In [150]:
```
# Update
```

In [151]:
```
product_info["Brand"] = "Dell"
```

In [152]:
```
product_info
```

Out[152]:
```
{'Id': 5, 'Name': 'Mobile', 'Brand': 'Dell'}
```

In [ ]:
```

```

In [165]:
```
product_info = {
    "Id": 5,
    "Name": "Laptop",
    "Brand": "Apple",
    "Name": "Mobile"
}
```

In [167]:
```
# product_info.update
```

In [166]:
```
len(product_info)
```

Out[166]:
```
3
```

In [156]:
```
# product_info["Price"]  # Access
```

In [159]:
```
product_info.get("Price")  # Access
```

In [162]:
```
# product_info.clear()
```

In [163]:
```
# product_info
```

In [164]:
```
# del product_info
```

In [ ]:
```

```

In [168]:
```
product_info = {
    "Id": 5,
    "Name": "Laptop",
    "Brand": "Apple",
    "Name": "Mobile"
}
```

In [169]:
```
data = product_info.copy()
```

In [ ]:
```

```

In [181]:
```
d1 = {
    "Id": 5,
    "Brand": "Apple",
    "Name": "Mobile"
}
```

In [184]:
```
d2 = {
    "Price": 32345.245,
    "Brand": "Dell"
}
```

In [196]:
```
# d2
```

In [193]:
```
d1.update(d2)
```

In [194]:
```
d1
```

Out[194]:
```
{'Id': 5, 'Brand': 'Dell', 'Name': 'Mobile', 'Price': 32345.2
45}
```

In [191]:
```
d3 = {**d1, **d2}
```

In [192]:
```
d3
```

Out[192]:
```
{'Id': 5, 'Brand': 'Dell', 'Name': 'Mobile', 'Price': 32345.2
45}
```

In [188]:
```
# from collections import ChainMap
```

In [187]:
```
# ChainMap()
```

In [ ]:
```

```

In [197]:
```
product_info
```

Out[197]:
```
{'Id': 5, 'Name': 'Mobile', 'Brand': 'Apple'}
```

In [199]:
```
"Brand" in product_info.keys()
```

Out[199]:
```
True
```

In [200]:
```
product_info.pop("Brand")
```

Out[200]:
```
'Apple'
```

In [201]:
```
product_info
```

Out[201]:
```
{'Id': 5, 'Name': 'Mobile'}
```

In [ ]:
```

```

In [205]:
```
data = {'Id': 5, 'Name': 'Mobile', 'Brand': 'Apple'}
```

In [208]:
```
# data.popitem()
```

In [ ]:
```

```

In [209]:
```
data = {'Id': 5, 'Name': 'Mobile', 'Brand': 'Apple'}
```

In [210]:
```
# data.keys
```

In [ ]:
```

```

Happy Learning :)