

## # Indexing || Index

string1 = "duhan"

↑  
0 1 2 3 4

list1 = ["Kiwi", "Pineapple", "mango"]

↑  
0

↑  
1

↑  
2

tuple1 = [1000, 2000, -40000]

↑  
0

↑  
1

↑  
2

? with 0.

string1[3]

Index

list1[2]

Square  
brackets

tuple1[1]

Index in Python starts with 0.

$\chi = \text{"Kanishk Singh"}$

The diagram illustrates the mapping of characters in the string "Kanishk Singh" to their respective indices. The string is written in green at the top. Below it, the indices 0 through 9 are listed in orange. Orange arrows point from each character to its corresponding index. The index 9 is circled in orange, pointing to the character 'g'.

Index	Character
0	K
1	a
2	n
3	i
4	s
5	h
6	K
7	S
8	i
9	g

$\chi[9] \Rightarrow i$

$\chi[7] \Rightarrow -$

```
fruitsTuple = ('kiwi', 'apple', 'mango', 'grapes', 'oranges')
print(fruitsTuple[5])
```

0 1 2 3 4  
5th index is not there

```
IndexError Traceback (most recent call last)
<ipython-input-45-49913642e1b0> in <module>
      1 fruitsTuple = ('kiwi', 'apple', 'mango', 'grapes', 'oranges')
----> 2 print(fruitsTuple[5])
```

IndexError: tuple index out of range

✓ -5

```
fruitsTuple = ('kiwi', 'apple', 'mango', 'grapes', 'oranges')
```

```
print(fruitsTuple[-1])
```

```
print(fruitsTuple[-3])
```

oranges

mango

-4      -3      -2      -1

1 2 ③ ④ 5 6  
↑

'Kiwi'  $\Rightarrow$  0 8 -5

add  $\Rightarrow \frac{n}{2} + 1$

fruitsTuple(0) // Kiwi

even  $\Rightarrow \frac{n}{2}, \frac{n}{2} + 1$

fruitsTuple(-5) // Kiwi

```
AdityaSet = {'Python', 'Java', 'C++', 'HTML', "JavaScript", "C#", 'Apex', 'Python', 'Python'}
```

```
print(AdityaSet)
```

```
{'C++', 'JavaScript', 'Python', 'HTML', 'Java', 'C#', 'Apex'}
```

SETS ARE UNORDERED.

WILL INDEXING HAVE A MEANING?

```
AdityaSet[0]
```

SETS DOES  
NOT CONTAIN  
DUPPLICATES

**TypeError**

```
<ipython-input-61-f6b1ec72080e> in <module>
----> 1 AdityaSet[0]
```

Traceback (most recent call last)

**TypeError:** 'set' object is not subscriptable

```
VinaySoni_Dict = {'Python':3,"Java":8,"Pandas":1,"Numpy":1,'VitaraBreeza':2021  
                  'Python':5}
```

```
print(VinaySoni_Dict)
```

```
{'Python': 5, 'Java': 11, 'Pandas': 1, 'Numpy': 1, 'VitaraBreeza': 2021}
```

Python Keys are Unique.

NOTE: FROM PYTHON 3.5+ ONWARDS DICT ARE INSERTION ORDERED.

```
VinaySoni_Dict[0]
```

No Indexing  
It wants a key.  
No need.

Not properly ordered.  
They can change their order in other operations

```
KeyError
```

```
<ipython-input-63-0a737eec9cbf> in <module>  
----> 1 VinaySoni_Dict[0]
```

Traceback (most recent call last)

```
KeyError: 0
```