Dt: 16-12-25

Day - 13

Slicing :-

Slicing in Python is a powerful feature that allows you to extract specific portions of a sequence (like a string, list) without modifying the original data

The Basic Syntax :-

sequence [Start : Stop : step size]

start :- The index where the slice begins

stop :- The index where the slice ends

step size :- How many items to skip between extracted items

Example :-

```
L1 = [1, 2, 3, 4, 5]
L1 [0: LP: 1]
                L1 = [1, 2, 3, 4, 5]
```

2. Tuple:-

A Tuple in Python is a collection that is ordered & immutable, Allow duplicates

NOTE:-

Think of a tuple as a "read-only list". once you put data inside a tuple, you cannot add; remove, change any of the items. this makes them perfect for storing data that shouldn't be tampered with, like cordinates or configuration settings.

- Tuples are created by placing items inside parentheses (), separated by commas,

Example:-

```
profile = ("Alice", 25, "Engineer")
```

methods:-

Because tuples are immutable, they don't have methods like append(), remove(), sort(). they strictly have methods for looking up information:

- count(value): Returns the number of items a value appears
- index(value): Returns the index of the first occurence of value.

Example:-

```
t1 = (67, 'karan', 13.56, 'false', 23)
t2 = (1,2,3)
t3 = t1+t2
t3
o/p = (67, 'karan', 13.56, 'false', 23, 1,2,3)
```

3. Set:-

A set is an unordered collection of unique elements

key characteristics.

- No duplicate values
- unordered
- mutable (can add/remove items)
- Elements must be immutable.

Example:-

```
my set = {1, 2, 3, 4}

print (my set)
```

4. Dictionary:

A dictionary maps keys to values so you can quickly access data using the key.

features:-

- * stores data as key: value
- * key are unique.
- * values can be duplicated
- * ordered
- * mutable
- * key must be immutable

Example:-

```
my-dict = { "name": "john",
            "Age": 20,
            "city": "Banglore".
          }
```

Accessing values:-

```
Print (my_dict ["name"])   # John
```

Adding / updating items:-

```
my_dict ["age"] = 21   # update
my_dict ["country"] = "India"   # add
```

Removing items:-

```
my_dict.pop ("city")
del my_dict ["age"]
```