# Tuples

Chapter 04e

# List-like data types: Tuple

- **Lists** are mutable.
  - It can have values added, removed or changed.
- A tuple is a collection which is ordered and **unchangeable**.
- Tuples are **not immutable**.
  - Values cannot be modified, appended or removed.
- Tuples are similar to list, except uses ( ) instead of [ ].
- If values are to change, use a list, otherwise use a tuple.

# Tuple – Examples

my_tuple = ()                                   #Empty Tuple

my_tuple = (1, 2, 3)                            #Tuple with Integers

my_tuple = ("apple", "banana", "cherry")

                                                #Tuple with Strings

my_tuple = (1, "Hello", 3.4)

                                                #Tuple with Mixed Data Types

# Tuple – Examples

my_tuple = ("Hello",)

#Tuple with 1 element needs to end with , to indicate that it is a tuple.

# Tuple – Mixed data types

- A tuple can have any number of items and they may be of different types (integer, float, list, string etc.)

my_tuple = ("mouse", [8, 4, 6], (1, 2, 3))

# METHOD 1: Iterate over a Tuple

**thistuple = ("apple", "banana", "cherry")**

**for item in thistuple:**

    **print(item)**

| item |
|:----:|
| apple |
| banana |
| cherry |

# Access Items in a Tuple – Index number

**thistuple = ("apple", "banana", "cherry")**

**print(thistuple[1])**

| item |
|------|
| apple |
| banana |
| cherry |

# Tuple Operations

- Creating a Tuple

- Indexing, Negative Indexing

- Slicing

- Changing **(cannot**, tuples are **not immutable (unchangeable).**

- Deleting (entire tuple only, not elements)

- **in** Keyword

# Tuple Methods

- count()
- index()

# Access Items in a Nested Tuple

**n_tuple = ("mouse", [8, 4, 6], (1, 2, 3))**

```
print(n_tuple[1][1])                    # Output: 4
```

# Check if Item Exists in a Tuple – in keyword

```
thistuple = ("apple", "banana", "cherry")


if "apple" in thistuple:
  print("Yes, 'apple' is in the fruits tuple")
```

# Built-In Functions with Tuple

- len()
- max()
- min()
- sorted()
- sum()
- tuple()

# Tuples are <span style="color:red">not immutable</span>

- Cannot Change, Add, Remove

# Online Resources

- W3Schools – Python Tuple Exercises
- Python by Programiz -