Title: Exploring Basic Data Types of Python\n\nAim: To study and explore basic data types of Python

Objective: To introduce basic data types of Python

Theory:

Lists are just like dynamic-sized arrays, declared in other languages (vector in C++ and ArrayList in Java). Lists need not be homogeneous always, which makes them a most powerful tool in Python.\n\nTuples:\nA Tuple is a collection of Python objects separated by commas. In some ways, a tuple is similar to a list in terms of indexing, nested objects, and repetition, but a tuple is immutable unlike lists that are mutable.

Set:

A Set is an unordered collection data type that is iterable, mutable, and has no duplicate elements. Python’s set class represents the mathematical notion of a set.\n\nDictionary:\nin Python is an unordered collection of data values, used to store data values like a map, which unlike other Data Types that hold only single values as an element, Dictionary holds key:value pair.\n\nList, Tuple, Set, and Dictionary are the data structures in Python that are used to store and organize the data in an efficient manner.

List Tuple Set Dictionary

List is a non-homogeneous data structure which stores the elements in single row and multiple rows and columns\n\nTuple is also a non-homogeneous data structure which stores single row and multiple rows and columns

Set data structure is also non-homogeneous data structure but stores in single row

Dictionary is also a non-homogeneous data structure which stores key:value pairs

List can be represented by [ ]

Tuple can be represented by ( )

Set can be represented by { }

Dictionary can be represented by { }

List allows duplicate elements

Tuple allows duplicate elements

Set will not allow duplicate elements but keys are not duplicated\n\nList can use nested among all

Tuple can use nested among all

Set can use nested among all

Dictionary can use nested among all

Example:

List:

Tuple: (1, 2, 3, 4, 5)

Set: {1, 2, 3, 4, 5}

Set: {1, 2, 3, 4, 5}

List can be created using list() function

Tuple can be created using tuple() function.

Set can be created using set() function

Dictionary can be created using dict() function.\n\nList is mutable i.e., we can make any changes in list.

Tuple is immutable i.e., we can not make any changes in tuple

Set is mutable i.e., we can make any changes in set. But elements are not duplicated.

Dictionary is mutable. But Keys are not duplicated.\n\nList is ordered

Tuple is ordered

Set is unordered

Dictionary is ordered

Creating an empty

List: l = []

Tuple: t = ()

Set: a = set()

Set: b = set(a)

Code :

string\_example="Hello World !!!"

print(string\_example)

list\_example=[1,2,3,4,5]

print(list\_example)

dictionary\_example={"name":"Alice","age":25,"city":"Silicon Valley"}

print(dictionary\_example)

print(dictionary\_example["name"])

tuple\_example=(1,2,3,4,5)

print(tuple\_example)

Result :

Hello World !!!

[1, 2, 3, 4, 5]

{'name': 'Alice', 'age': 25, 'city': 'Silicon Valley'}

Alice

(1, 2, 3, 4, 5)

Conclusion:

Basic data types of Python have been studied and implemented.