

9. LISTS, TUPLES, SETS AND DICTIONARY

Learning Objectives

After studying this chapter, students will be able to:

- Understand the basic concepts of various collection data types in python such as List, Tuples, sets and Dictionary.
- Work with List, Tuples, sets and Dictionaries using variety of functions.
- Writing Python programs using List, Tuples, sets and Dictionaries.
- Understand the relationship between List, Tuples and Dictionaries.

Important Notes and Points

- ❖ A list in Python is known as a “**sequence data type**” like strings.
- ❖ Nested list is a list containing another list as an element.
- ❖ A negative index can be used to access an element in reverse order.
- ❖ The len() function in Python is used to find the length of a list. (i.e., the number of elements in a list).
- ❖ In Python, the lists are mutable, which means they can be changed.
- ❖ The clear() function removes only the elements and retains the list.
- ❖ The range() is a function used to generate a series of values in Python.
- ❖ The list () function is all so used to create list in python.

- ❖ The term Tuple is originated from the Latin word represents an abstraction of the sequence of numbers: single(1), double(2), triple(3), quadruple(4), quintuple(5), sextuple(6), septuple(7), octuple(8), ..., n-tuple, ...,
- ❖ The elements of a list are changeable (mutable) whereas the elements of a tuple are unchangeable (immutable), this is the key difference between tuples and list.
- ❖ The elements of a list are enclosed within square brackets. But, the elements of a tuple are enclosed by paranthesis.
- ❖ Iterating tuples is faster than list.
- ❖ Type () function is used to know the data type of a python object.
- ❖ All the functions used in List can be applicable even for tuples.
- ❖ In python, a set is another type of collection data type. A Set is a mutable and an unordered collection of elements without duplicates. That means the elements within a set cannot be repeated.
- ❖ When you print the elements from a set, python shows the values in different order.
- ❖ A Python dictionary is separated by a colon (:) while the commas work as a separator for the elements.