

What is Data?

Data is a set of values of qualitative or quantitative variables.
Qualitative data is descriptive information (it describes something)
Quantitative data, is numerical information (numbers).

What is Information?

If we arrange some data in an appropriate sequence, then it forms a Structure and gives us meaning. We found two things in Information: One is Data and the other is Structure.

Define Data Structure?

A data structure is a specialized format for organizing and storing data.

A data structure is classified into two categories:

- 1 Linear data structures
- 2 Non-Linear data structures

Linear data structure:

A data structure which is sequential and continues in nature.
Example: array, linked list, stack and queue.

Non Linear data structures

These are arranged in random manner. It can be used to hierarchical relationship among data elements.
Example: Tree, Hash tree, Binary tree, Heap and graph.

Data Structures/Collections in PYTHON:

In PYTHON builtin Data Structures are Four types:

- 1 List is a collection which is ordered and changeable. Allows duplicate members. enclosed []
- 2 Tuple is a collection which is ordered and unchangeable. Allows duplicate members. enclosed in parentheses()
- 3 Set is a collection which is unordered and unindexed. No duplicate members. enclosed in curly brackets {,}
- 4 Dictionary is a collection which is unordered, changeable and indexed. No duplicate members. Enclosed with curly brackets {}

For Data Structures in PYTHON:

Hashable is ==> Immutable (Readonly)
Unhashable is ==> Mutable (Read&Write)
LIST is Unhashable ==> Mutable (Read&Write)
TUPLE is Hashable ==> Immutable (Readonly)
SET is Unhashable ==> Mutable (Read&Write)
FROZENSET is Hashable==>Immutable(Readonly)
DICTIONARY :
KEY ==> Hashable(Readonly)
Value ==> Unhashable(Read&Write)