What is data structures?

A data structure is a specialized format for organizing and storing data. General data structure types include the array, the file, the record, the table, the tree, and so on. Any data structure is designed to organize data to suit a specific purpose so that it can be accessed and worked with in appropriate ways. In computer programming, a data structure may be selected or designed to store data for the purpose of working on it with various algorithms.

**Data** Definition defines a particular data with the following characteristics.

* Atomic − Definition should define a single concept.
* Traceable − Definition should be able to be mapped to some data element.
* Accurate − Definition should be unambiguous.
* Clear and Concise − Definition should be understandable.

Data Object

Data Object represents an object having a data.

Data Type

Data type is a way to classify various types of data such as integer, string, etc. which determines the values that can be used with the corresponding type of data, the type of operations that can be performed on the corresponding type of data. There are two data types

1.Built-in Data Type

2.Derived Data Type

Built-in Data Type

Those data types for which a language has built-in support are known as Built-in Data types. For example, most of the languages provide the following built-in data types.

Integers

Boolean (true, false)

Floating (Decimal numbers)

Character and Strings

Derived Data Type

Those data types which are implementation independent as they can be implemented in one or the other way are known as derived data types. These data types are normally built by the combination of primary or built-in data types and associated operations on them. For example

List

Array

Stack

Queue

Basic Operations

The data in the data structures are processed by certain operations. The particular data structure chosen largely depends on the frequency of the operation that needs to be performed on the data structure.

Traversing

Searching

Insertion

Deletion

Sorting

Merging