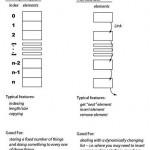
[**Linear Data Structure**](https://blog.oureducation.in/linear-data-structure/)

DEC 14 • [ENGINEERING NOTES](https://blog.oureducation.in/category/notes/engineering-notes/), [NOTES](https://blog.oureducation.in/category/notes/) • 2972 VIEWS • [1 COMMENT ON LINEAR DATA STRUCTURE](https://blog.oureducation.in/linear-data-structure/#comments)

A linear data structure simply means that it is a storage format of the data in the memory in which the data are arranged in contiguous blocks of memory. Like for example the array of characters is represented by one character after another. In the linear data structure, member elements form a sequence while storage. Such linear structures can be represented in memory by using one of the two basic strategies:-

a. array

b. Linked List

1.  By having the linear relationship between the elements represented by means of sequential memory locations. These types of linear structures are called arrays.

2.  By having relationship between the elements represented by pointers. These types of structures are called linked lists.

The arrays are very useful when the number of elements to be stored is fixed. On the other hand, linked lists are very useful when the number of data items in the collection are likely to change. Basically the linear data structure is fully dependent on the array & the linked list. The linear data structure is a primitive data type and it is the sub part of the data type. It is a continual memory data structure. And all the element must be of similar type (i.e., integer, char, etc). Following are the basic operations that can be done upon the linear data structures:

**1.) Traversing:** It means passing through the every element one by one which is stored in that particular data structure.

**2.) Insertion:** It means to insert an element in a particular place of that data structure.

**3.) Deletion:** It means to deletion of an element from a particular place of that data structure.

**4.) Searching:** It means to find the desired element which is stored in that particular  data structure.

**5.) Sorting:** It means to arrange the elements of that particular data structure in ascending / descending order.

2 – Dimensional array, though seems to be non-linear, is actually a linear data structure. This is because the memory reserved to store the data is single dimensional and when it is stored in the memory it is stored contiguously as a single dimension array in either row – major or column – major format. Similarly all the multi – dimensional arrays are also linear, for the same reason.