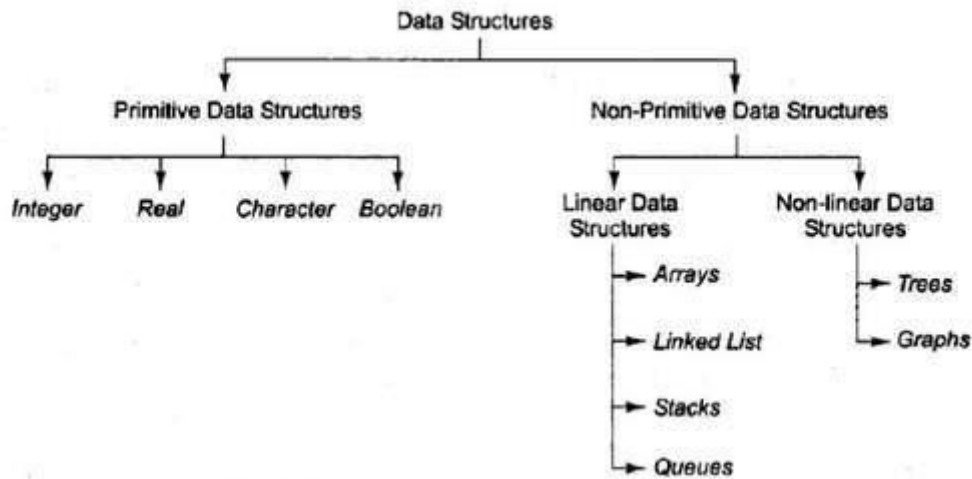


INTRODUCTION TO DATA STRUCTURES

Data Structure is defined as the way in which data is organized in the memory location.

There are 2 types of data structures:



Linear Data Structure:

In linear data structure all the data are stored linearly or contiguously in the memory. All the data are saved in continuously memory locations and hence all data elements are saved in one boundary. A linear data structure is one in which we can reach directly only one element from another while travelling sequentially. The main advantage, we find the first element, and then it's easy to find the next data elements. The disadvantage, the size of the array must be known before allocating the memory.

The different types of linear data structures are:

- Array
- Stack
- Queue
- Linked List

Non-Linear Data Structure:

Every data item is attached to several other data items in a way that is specific for reflecting relationships. The data items are not arranged in a sequential structure.

The various types of non linear data structures are:

- Trees
- Graphs

EXPERIMENT - 01

Design, Develop and Implement a menu driven program in C for the following Array operations

- a. Creating Array of N Integer elements.
- b. Display of Array elements with suitable headings.
- c. Inserting an element (**ELEM**) at a given valid position (**POS**).
- d. Deleting an element at a given valid position (**POS**).
- e. Exit.

Support the program with functions for each of the above operations.

ABOUT THE EXPERIMENT:

An **Array** is a collection of similar / same elements. In this experiment the array can be represented as one / single dimensional elements.

Menu driven program in c - language to perform various array operations are implemented with the help of user defined functions as followings;

- a. create()
- b. display()
- c. insert()
- d. del ()
- e. exit()

ALGORITHM:

Step 1: Start.

Step 2: Read N value.

Step 3: Read Array of N integer elements

Step 4: Print array of N integer elements.

Step 5: Insert an element at given valid position in an array.

Step 6: Delete an element at given valid position from an array.

Step 7: Stop.