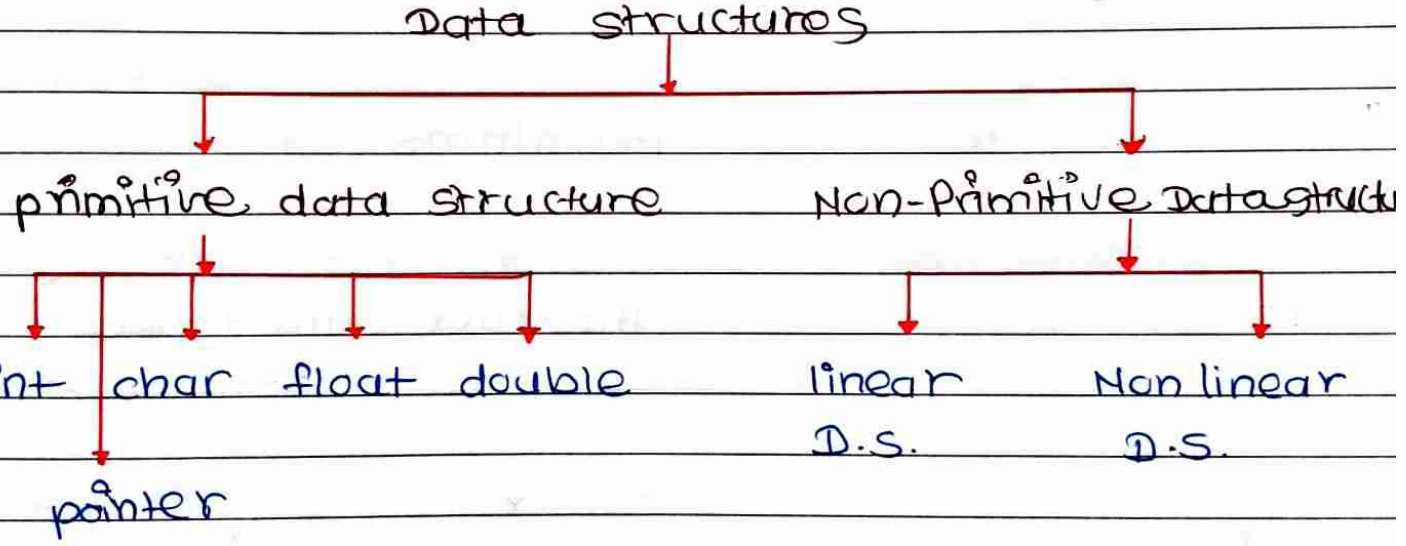
INDEX

What is Data Structure ?

→ Data structure is a way to store and organize data so that it can be used efficiently.

As per name indicates itself that organizing the data in memory.

The data structure is not any programming language like c, c++, Java etc. It is set of algorithms that we can use in any programming language to structure data in memory.



Linear Data structure :-

The arrangement of data in the sequential manner is known as linear data structure. The data structure used for this purpose are Arrays, linked list, Stacks and queues.

In this data structures, one element is connected to only one another element in a

linear form.

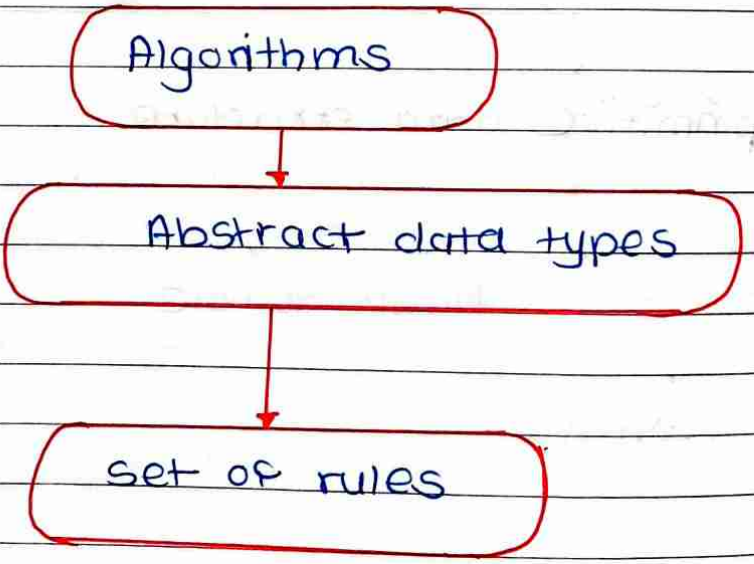
Non-linear data structure :-

When one element is connected to the 'n' number of elements known as non-linear data structures.

Example :- trees and graphs.

In this case, elements are arranged in a random manner.

Algorithms and Abstract Data types ??



Why →

To structure the data in memory, 'n' number of algorithms are proposed, and all these algorithms are knowns as Abstract Data Types.

An Abstract Data Type tells what is to be done and data structure tells how is to be done ?

ADT gives us the blueprint while data structure provides the implementation part.

What is Data ?

Data can be defined as the elementary value / collection of values.
forexample :- student's name and its id are the data about student.

What is Record ?

Record can be defined as collection of various data items
example :- student entity → name, address, course and marks can be grouped together to form record.

What is File ?

File is a collection of various records of one type of entity
example :- if there are 50 employees in class, then there will be 20 records in related file where record contains info of employee

What is Attribute and Entity ?

An entity represents class of certain objects. it contains various attributes. each attribute represents particular property of that entity.