

Introduction to Data Structures

From this presentation onwards,, we will study a new subject that is, data structures. and in this presentation., I will introduce what data structure is and some real-life examples of data structure. you can think of a data as quantities,, characters or symbols on which operations are performed by a computer.. This is what data is. a data structure structure is the systematic way to organize data so that it can be used efficiently.. data structure gives us the way to structure the data, to appropriately manage the data. and not only that, we can use it whenever required in an efficient way.. This is the reason, why companies are preferring this subject over other subjects because this is very important subject.. did you know that stack data structure is used in implementing Redo and undo feature.. You know that this is the famous. that this is the famous feature which we are using many number of times in our applications.. one such application is Google Docs,, or power, Point, or microsoft word.. That is why, it is a very useful data structure for Us. now, let 's discuss some real-life examples of data structures..

The primary goal of Neso Academy is to give quality education to " actually, I want to write everyone but accidentally, I have written ebery instead of every. I press control Z, this element gets selected and you know, it will get popped out of the stack and will get placed within this redo stack. and you can see here., stack is our data structure now, let 's see another example.. data structures are useful in day to day life and we using them more frequently, and that is why, it is so hot in it industry. you can guess that, which data structure is used to store this information. we can use graph data structure to store information like this. and now, you can understand why data structures are so important.

Data Types vs. Abstract Data Types

In our journey towards learning data structures , we first have to understand the difference between data types and abstract data types. A data type defines a certain domain of values but also defines what operations are allowed on those values. In contrast to primitive data types, there is a concept of user defined data types which is not pre defined in the language itself. ADTs are like user defined data types which defines operations on values using functions without specifying what is there inside the function and how the operations are performed. Think of ADT as a black box which hides the inner structure and design of the data type from the user. There are multiple ways to implement an ADT. A stack ADT can be implemented using arrays or linked lists. The program which uses data structure is called a client program. It has access to the interface only and nothing inside. The implementation can go on without affecting the stack program. This is one of the biggest advantages of using abstract data types.

