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**TASK 1**

**What is data ?**

Data is information that has been translated into a form that is efficient for movement or processing.Data is a collection of facts, such as numbers, words, measurements, observations or just descriptions of things. There are two types of data:

1. Qualitative data(descriptive information)
2. Quantitative data(numerical information)

**What are data structures ?**A data structure is a particular way of organizing data in a computer so that it can be used effectively. It also defines the relationship between data.

Different types of data structures:

1. Linear: arrays, lists
2. Tree
3. Hash
4. Graphs

**What are abstract data types ?**

Abstract Data type is a type for objects whose behaviour is defined by a set of values and a set of operations. ABT mentions only how operations are to be performed but not how these operations will be implemented. Different ADT are :

1. List ADT
2. Stack ADT
3. Queue ADT

**Need of data structures in real life**.

1. A simple question Paper is an array of numbered questions with each of them assigned to some marks.
2. Arrays can be used in speech processing where each speech signal is an array.
3. To keep the track of turns in a multiplayer game, a circular linked list is used.
4. Stacks can be used in maintaining call logs, E-mails, Google photos’ any gallery , YouTube downloads, Notifications ( latest appears first )
5. GPS navigation system uses the graph data structure.
6. Matrices are also used in representing real-world data like the population of people, infant mortality rate, etc.
7. Graphs can be used to find the shortest distance between the cities.