What is a Data Structure?

A data structure is a way of organizing the data so that the data can be used efficiently. Different kinds of data structures are suited to different kinds of applications, and some are highly specialized to specific tasks. For example, B-trees are particularly well-suited for the implementation of databases, while compiler implementations usually use hash tables to look up identifiers.

What are linear and non-linear data Structures?

- **Linear:** A data structure is said to be linear if its elements form a sequence or a linear list. Examples: Array. Linked List, Stacks and Queues
- **Non-Linear:** A data structure is said to be non-linear if the traversal of nodes is nonlinear in nature. Example: Graph and Trees.

What are the various operations that can be performed on different Data Structures?

- **Insertion**: Add a new data item in the given collection of data items.
- **Deletion**: Delete an existing data item from the given collection of data items.
- **Traversal**: Access each data item exactly once so that it can be processed.
- **Searching**: Find out the location of the data item if it exists in the given collection of data items.
- **Sorting**: Arranging the data items in some order i.e. in ascending or descending order in case of numerical data and in dictionary order in case of alphanumeric data.