

# **Data Structures Using C++**

## # Prerequisites:-

- ➤ Basic concept of C++
- > Function in C++
- > Array in C++
- > Structure & Union in C++
- > String in C++
- ➤ Pointers in C++

# **#Arrays:-**

- > Introduction to arrays.
- > Types of Arrays.
  - Linear Arrays
  - Multi-Dimensional Arrays
- > Insertion and Deletion.
- ➤ Advantages of Arrays.
- ➤ Limitations of Arrays.

#### **#Linked List:-**

- > Introduction to Linked List.
- > Implementation of Linked List in C++.

- > Types of Linked List.
  - Singly Linked List
  - ➤ Doubly Linked List
  - Circular Linked List
- Advantages and Disadvantages of Linked List.
- ➤ Linked Lists VS Arrays.

#### **#Stack:-**

- > Introduction to Stack.
- > Implementation of Stack in C++.
  - > Operations of Stack.
- > Applications of Stack.

#### **#Queue:-**

- > Introduction to Queue.
- ➤ Implementation of Queue in C++.
- > Operations of Queue.
- > Types of Queue.
  - Priority Queue
  - Double Ended Queue
  - Circular Queue
- > Applications of Queue.

#### **#Trees:-**

- > Introduction to Trees.
- > Types of Trees.
- ➤ General Tree
- Binary Tree
- Binary Search Tree
- > Tree Traversal Techniques.
- > InOrder Traversal
- ➤ PreOrder Traversal
- ➤ PostOrder Traversal

## #Graphs:-

- > Introduction to Graphs.
- > Implementation of Graphs in C++.
- > Types of Graphs.
- Directed Graph
- Undirected Graph

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