

Syllabus

Data Structures and its Implementation

Introduction to Data Structures

Why you should learn data structure?

use case of data structure

Why product based companies focus on data structure

All About Arrays

Down side of using conventional arrays

Array data structure

Dynamic Arrays

Linked List

~~Singly Linked List~~

~~Doubly Linked List~~

~~Circular Linked List~~

Circular Doubly Linked List

Various Problems on Linked Lists

Stack and Queue

Stack Introduction

Implementation of Stack using arrays

Implementation of Stack using Linked List

Queue Introduction

Implementation of Queue using arrays

Implementation of Queue using Linked List

Deque – Double Ended Queue

Priority Queue

Recursion and Backtracking

Recursion Basics

Approach to solve recursive problems

Recursion vs iteration

Types of recursion

Sorting

Bubble Sort

Modified Bubble Sort

Selection Sort

Insertion Sort

Quick Sort

Merge Sort

Searching and Hashing

Linear Search

Binary Search

Hashing

Tree

Binary Tree

Types of Binary Tree

Binary Search Tree

Implementation of Binary Search Tree

Heap

Heap Introduction

Implementation of Heap

Heap Sort

Graph

Graph Concept

Graph Representation

BFS and DFS

Types of Algorithms

Divide and Conquer

Greedy Method

Dynamic Programming