DATA STRUCTURE & ALGORITHM

Duration: 3 Months

Object-Oriented Programming And Concepts
Introduction to Data Structure
Arrays
- Introduction To Array
- One Dimensional Primitive And Non-primitive Array
- Multidimensional Primitive And Non-primitive Array

Linked List
- Introduction To Linkedlist
- Implementation Of Linked List
- Different Operation On Linked List
- Traversing
- Searching
- Insertion
- Deletion
- Reverse
- Circular Linked List And It's Implementation
- Doubly Linked List And It's Implementation

Stack
- Stack Introduction
- Array Implementation Of Stack
- Push And Pop Operations On Stack
- Linked Implementation Of Stack
- Applications Of Stack
- Reversal Of String
- Balanced Bracket Problem
- Infix To Postfix Conversion
  Evaluating The Postfix Expression

Queue
- Introduction To Queue
- Array Implementation Of Queue
- Linked Implementation Of Queue
- Types Of Queues
- Circular Queue
- Priority Queue
- Dequeue

Tree
- Introduction To Various Tree
- Binary Tree
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- Binary Search Tree
- Strict Binary Tree
- Complete Binary Tree
- Extended Binary Tree
- Balanced Tree
- Implementation of Binary search tree
- Traversal in Binary Search Tree
- Preorder Traversal
- Inorder Traversal
- Postorder Traversal
- Spanning tree
- Minimum spanning tree
- Prim’s Algorithm

Graph

- Introduction to Graph
- Undirected Graph
- Directed Graph
- Implementation of Graph
- Traversal in Graph
- Breadth First Search
- Depth First Search
- Shortest Path Algorithm (Dijkstra)

Sorting

- Various sorting Techniques and algorithms
- Bubble Sort
- Selection sort
- insertion sort
- quick sort
- merge sort

Searching

- Linear Search
- Binary Search
- Hashing