CAP282:DATA STRUCTURES-LABORATORY

L:0 T:0 P:3 Credits:2

Course Outcomes: Through this course students should be able to

- understand the basics and representation of data structures
- implement the various data structures
- evaluate the performance of various algorithms
- apply the suitable data structures to solve real life problems

List of Practicals / Experiments:

Arrays

- Traversal of linear arrays
- Insertion in array
- Deletion in array
- Reverse of array
- Merging of two arrays

Linked Lists

- Traversal of one way linked list
- Insertion in one way linked list
- Deletion in one way linked list
- Operations on two way linked list
- Operations on circular linked list

Stacks and Queues

- Implementation of push and pop operations in stack
- Insertion in circular queues
- Deletion in circular queues
- Implementation of priority queues

Trees

- Operations on binary search trees
- Preorder traversal
- Inorder traversal
- Postorder traversal
- Binary heap operations
- Heap sort

Searching and sorting

- Linear search
- Binary search
- Bubble sort
- Selection sort
- Insertion sort
- Merge sort

Text Books:

1. DATA STRUCTURES by SEYMOUR LIPSCHUTZ, MCGRAW HILL EDUCATION

References:

1. DATA STRUCTURES AND ALGORITHMS by ALFRED V. AHO, JEFFREY D. ULLMAN AND JOHN E. HOPCROFT, PEARSON

2. DATA STRUCTURES AND ALGORITHM ANALYSIS IN C by MARK ALLEN WEISS, PEARSON