NIRMA UNIVERSITY
INSTITUTE OF TECHNOLOGY
CSE DEPARTMENT
SEMESTER: IV, CE/IT
CE403- DATA STRUCTURES
Practical List

Sr. No.	Practical title	Hour (s)	Mapped CLO's
1.	**Array and Structures** a) Create a two dimensional array and perform insertion, deletion and update operation using pointer. b) Create an array of structure and perform insertion, deletion and update operation using pointers. c) Implement a matrix multiplication of two matrices stored in row major/ column major order.	04	CLO2, CLO4
2.	**Stack** a) Implement the basic stack operations using an array. b) Implement a program to convert fully parenthesized infix expression to postfix expression.	04	CLO2, CLO4
3.	**Queue** a) Implement circular queue with all operations b) Implement priority queue using an array.	04	CLO2, CLO4
4.	**Singly Linked List** a) Implement Traversal, Insertion and Deletion operations on singly linked list. b) Implement a program to reverse a singly linked list.*	02	CLO4
5.	**Doubly Linked List** a) Implement Traversal, Insertion and Deletion operations on doubly linked list. b) Implement an addition of two polynomial equations using linked list.	04	CLO4
6.	**Sorting** a) Implement Quick/merge sort for sorting a given set of integers in ascending order. b) Implement Heap sort algorithm for sorting a given set of integers in ascending order.	04	CLO3

	c) Implement merge sort for sorting a given set of integers in descending order. *		
7.	**Searching** Implement Binary search operation on a given set of integers.	02	CLO3
8.	**Binary Search Tree** Implement the following operations on given binary search tree : Insert a node, Delete a node & Traverse the tree (Inorder, Preorder, Postorder)	02	CLO3
9.	**Tree** Implement AVL tree insertion, deletion and display operations.	04	CLO4
10.	**Graph** Implement an algorithm to obtain a spanning tree of a connected undirected graph using appropriate data structure.	02	CLO2, CLO4
	Total	32	

* indicates extra exercises for practice