**FDSL List of Assignments**

1. Represent matrix using two-dimensional arrays and perform the following operations with pointers: i. Addition ii. multiplication iii. transpose iv. Saddle point
2. Department of Information Technology has a student's club named 'Pinnacle Club'. Students of the Second, third and final year of the department can be granted membership on request. Similarly, one may cancel the membership of the club. The first node is reserved for the president of the club and the last node is reserved for the secretary of the club. Write C program to maintain club member‟s information using a singly linked list. Store student PRN and Name. Write functions to a) Add and delete the members as well as the president or even secretary. b) Compute the total number of members of the club c) Display members of the club d) Display list in reverse order using recursion
3. Implement any database using a doubly-linked list with the following options a) Insert a record b) delete a record c) modify a record d) Display list forward e) Display list backward
4. Implement stack as an abstract data type using linked list and use this ADT for conversion of infix expression to postfix, prefix, and evaluation of postfix and prefix expression
5. Implement Circular Queue using Array. Perform following operations on it. a) Insertion (Enqueue) b) Deletion (Dequeue) c) Display
6. Implement binary search tree and perform following operations: a. Insert b. Delete c. Search d. Mirror image e. Display f. Display level wise (algorithmic analysis)
7. Construct and expression tree from postfix/prefix expression and perform recursive and nonrecursive In-order, pre-order and post-order traversals.
8. Represent any real-world graph using adjacency list /adjacency matrix find minimum spanning tree using Prim‟s algorithm.