



QEEE COURSES

LINEAR DATA STRUCTURES AND APPLICATIONS - DATA STRUCTURES AND ALGORITHMS

COURSE CONTENT:

Introduction to stack and queue data structures. Basic operations on these data structures; array implementation; problem solving using these structures.

- Linear list data structure, basic operations on a singly linked list: traversal(), length(), insertion(), deletion(), merge(); search(); sort(); time complexity of each operation.
- Dynamic memory based implementation : concepts of pointer, array of pointers, structure, class and dynamic memory allocation. Designing programs in C and C++ for representation and manipulation of stack, queue and list using singly linked data structure.

Applications of stacks, queues and lists in problem solving – (a) balanced parentheses, (b) expression evaluation, (c) scheduling of processes, (d) sparse polynomial manipulation : addition and multiplication, and (e) arithmetic with long positive integers.