National University of Computer and Emerging Sciences

Laboratory Manual #3

for

Data Structures Lab

(CL 2001)

Department of Computer Science
FAST-NU, Lahore, Pakistan

Introduction

Objectives

After performing this lab, students shall be able to:

- Overview of implementation of linked list
- Different techniques of how to add data in linked list.
- Different techniques of how to remove data from the linked list.

Problems

Question#1:

Implement a Struct 'Node' that contains two data members: An int variable 'data' and Node pointer 'next'.

Question#2:

Now implement a simple linked list class having two private data member Node pointer 'head' and Node pointer 'tail'. Please note that Node class is a nested class of linked list class. (Note that Struct Node is defined inside the List class)

Question#3:

Now implement the following operations for linked list class:

a. Insert at start void insertAtHead(T const element);

b. Insert at end void insertAtTail (T const element);

Question#4:

Now implement the following operations for linked list class:

a. Print void print() const;

b. Delete at Start void eraseAtHead ();

c. Delete at End void eraseAtTail();

d. Destructor

Question#5:

Create two simple linked lists and merge these two lists then perform sort operation.