Data Structures (IT205) (July-November, 2012): Assignment 1 Due:10^{st} August, 2012

1. Write code for creating a linked list, adding elements to the linked list at the tail, searching for an element with a particular key and also deleting an element with a particular key if it exists.

2. Write a code for implementing a stack, a queue, and a queue simulated by two stacks and a stack simulated by two queues, all using prespecified size arrays. You need to implement the push, pop, enqueue, dequeue operations and error checks.

3. Implement stacks and queues using the linked list data-structure.

4. Write code for reversing a singly linked list.

5. (a) Implement routines for exchanging two elements of a stack. You may use two extra stacks for temporary storage.

   (b) Implement a routine for reversing a contiguous subsequence of a stack of elements. Again you may use two auxilliary stacks for temporary storage.

   (c) Write a routine for exchanging two elements of a queue using two extra queues for temporary storage.

   (d) Write routine for reversing a subsequence of contiguous elements of a queue, using two auxilliary queues.