CSE2011 - Data Structures and Algorithms

Assignment – II

L57-58 slot – FALL 2021-221

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1. Create a linked list Swap two adjacent elements by

   (*a*) Interchanging the elements itself.

   (*b*) Adjusting only the pointers (and not data)

   In both cases, assume that elements are stored in single linked list and also with double linked list.

2. Given single circular linked list containing a set of data. Obtain the following from this data structure:

   (*a*) Reverse the direction of links

   (*b*) Forgiven two elements in the list, find the distance (number of nodes) between them.

3. It is required to maintain a library database using a number of lists as mentioned:

   The list BOOKS contains the information like title, accession number, and tag field (to indicate whether a book is issued or not) for all the books in a library. Note that each book can be there in multiple copies, but there accession numbers are different.

   Another list SUBSCRIBERS will contain the name, borrower number and the list of books (with date of issues) he has issued. Assume that a subscriber can issue up to five books at the most and no two copies of the same book.

   (*a*) Design a suitable data structure using single linked list.

   (*b*) Write a menu driven program using C for the following:

(*i*) To issue a book

(*ii*) Return a book

(*iii*) Show the list of books issued by a subscriber

(*iv*) Given a title, find out to whom it has issued.
