Assignment 2 Chap. 04 Linked List

Course code: SCSJ2013 - Section 09
Course name: Data Structures and Algorithms

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Problem: Create a Student Record Management system that can perform the following operations:

1) Insert student records
2) Delete student record
3) Show student record
4) Search student record

The student record should contain the following items

1) Name of Student
2) Student Matriculation ID number
3) Course in which the student is enrolled
4) Total marks of the student

Approach: With the basic knowledge of operations of Linked Lists like insertion, deletion of elements in linked list, the student record management can be created. Below are the functionalities explained that are to be implemented.

- Check Record: It is a utility function of creating a record it checks before insertion that the Record Already exist or not. It uses the concept of checking for a Node with given Data in a linked list.
- Create Record: It is as simple as creating a new node in the Empty Linked list or inserting a new node in a non-Empty linked list.
- Search Record: Search a Record is similar to searching for a key in the linked list. Here in the student record key is the id number as id number is unique for every student.
- Delete Record: Delete Record is similar to deleting a key from a linked list. Here the key is the id number. Delete record is an integer returning function it returns -1 if no such record with a given id number is found otherwise it deletes the node with the given key and returns 0.
- Show Record: It shows the record is similar to printing all the elements of the Linked list.