**DATA STRUCTURE**

**PROJECT – BASED LEARNIND**

**PROJECT SYNOPSIS**

**PROJECT NAME**: STUDENT MANAGEMNT SYSTEM

**SUBJECT**: DATA STRUCTURE USING C LAB

**TOPIC ON WHICH PROJECT IS BASED**

SINGLY LINKED LIST

**TEAM MEMBERS**:

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**OBJECTIVE**

The main objective of the Student Management System is to manage the details of profiles , exams marks and percentage .

It manages all the information about profiles, student, exam marks. The project is totally built at administrative end and thus only the administrator is guaranteed the access.

**TECHNOLOGY USED**

We use a technologies to create a student management system a single linked list. We learn the basics of the programming language by using, as well as the fundamentals of linked lists and data structures

**DESCRIPTION**

**A Student Management System is also known as a Student Information System (SIS). These systems work to coordinate scheduling and communications between faculty regarding students. This system exists to simplify information tracking for both parents and administrative staff.**It helps you manage all the student-related data in a well-organized manner. A Student Management System gives you a unique ID against every student. And using that ID, you can easily track the fee status, assignments, exam results, grades, parent info within seconds.

**PROBLEM**

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

* Insert Student record
* Delete student record
* Show student record
* Search student record

**PROPOSED SOLUTION**

We provide a code for storing the data of student by using linked list. Since linked list is linear data structure so we can insert and delete and display the record very easily.

**EXPECTED OUTCOMES**

This system helps in maintain the information of students of the institution. It can be easily accessed by the everyone and kept safe for a long period of time without any changes.

**FUNCTION ARE REQUIRED**

With the basic knowledge of [operations on Linked Lists](https://www.geeksforgeeks.org/data-structures/linked-list/) like insertion, [deletion of elements in the Linked list](https://www.geeksforgeeks.org/linked-list-set-3-deleting-node/), the student record management system 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 whether the Record Already Exists or not. It uses the concept of [checking for a Node with given Data in a linked list](https://www.geeksforgeeks.org/search-an-element-in-a-linked-list-iterative-and-recursive/).
* **Create Record:**It is as simple as [creating a new node in the Empty Linked list](https://www.geeksforgeeks.org/linked-list-set-2-inserting-a-node/) 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](https://www.geeksforgeeks.org/search-an-element-in-a-linked-list-iterative-and-recursive/). Here in the student record key is the roll number as the roll number is unique for every student.
* **Delete Record:**Delete Record is similar to [deleting a key from a linked list](https://www.geeksforgeeks.org/delete-occurrences-given-key-linked-list/). Here the key is the roll number. Delete record is an integer returning function it returns **-1** if no such record with a given roll 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](https://www.geeksforgeeks.org/print-nodes-of-linked-list-at-given-indexes/).