DATA STRUCTURES (15B11CI311)

TOPIC:-

LIBRARY MANAGEMENT SYSTEM

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Introduction

AIM: To provide a comprehensive solution for the *"library management system."*

As we all know, people have been relying on the library directory for many years to get basic info such as book name, book issuer, Author name. However, this method is not so efficient since users may not get the desired results.

This calls for a better design of a system wherein people can easily retrieve info without wasting much time.

Library Management System has been designed to overcome this problem

About the project

This system is developed keeping in view the general need required by the user while using the library directory book. To keep the library directory updated, the user will have the authority to add and delete as well as modify the existing records within the library directory. The users of the directory will have the authority to search any particular record and list details of all available records. The users can perform various operations such as adding book records, searching any particular record, deleting records, modifying existing records etc. To provide the search result within a short interval of time, optimized search algorithm code has been incorporated which will provide the results within seconds. To make all operations as much easy as possible, a user-

friendly approach has been taken into account by which users have to only give the relevant inputs during final confirmation to make their operations successful. The background processing system will take care of all processing tasks and maintain data integrity to reduce the redundancy of data. For searching operations, users will be able to get any particular record using the book name, book ID and various sorting techniques have also been added for the ease of the user. If no such record is available, a proper error message will be displayed as per input provided to the system.

<u>Project Objectives</u>

- To create a library management system that is user friendly. The software is capable enough to allow the concerned person to store and retrieve any type of book record.
- User Interface environment where even standalone users can work very comfortably and easily. All the data pertaining to book information is kept at a central database from where it can be easily retrieved, viewed or updated. But, such kind of technical details are hidden from the standalone user. He just needs to select the relevant option from the given menu-driven interface. However, the central repository of data can be easily accessed if required.
- Data Redundancy is no longer the problem now. The data modified from one particular data entry form will reflect at the central **database** as well. The software ensures that all duplicate contacts are efficiently eliminated.
- Effective search measures are present in the software from which by just entering a unique book-name or book ID for that data, its whole record can be readily accessed within microseconds. Moreover, the facility of updating and deletion of data is also available.

- The software provides the facility of storing new records and also displays the existing ones in many orders.

Features of the project

"Library Management System" has been designed to computerize the following functions that are performed by the system:

- **Combine Same Book** - In order to avoid repetition of the book data in an ideal library management system and reduce data redundancy there will be an omission command used for that particularly.
- **Search for a given book** -Various search methods will be introduced in which users can search for the data using different categories.
- **Display Books** - Different sorting methods will be used in order to attain sorting in all the possible fields like book name, book ID, publisher name, etc.
- **Update details -** Methods will be available to update the following details.

> A) Quantity of the book
> B) Book edition
> C) Book issuer
> D) Book Price

- **Add New Book:**
  Adding a new book to the database and its quantity and authors.

Data Structures and Algorithm techniques used:

- Linked lists

- Sorting

- Searching