LIBRARY MANAGEMENT SYSTEM

UNDER THE GUIDANCE OF

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REPORT BY

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This project (Library Management System) is a general purpose project , which satisfies all the needs of a typical library system. The project involves the creation of a database host application that interfaces with a SQL database that implements a Library Management System.

The package (Library Management System) is fully menu driven and provides quick and accurate information about all the books present in the library, the members who have lent the book, issued and return status of book and the availability of the book.

The whole project has been divided into the following modules :-

1) GUI

2) Book Search and Availability

3) Book Loans

a) Checking out books

b) Checking in books

4)Add Borrower

5)Pay Fines & Show Fines

User Instructions for librarians

1) Initially we open the command prompt and run mysql.

2) The data set has been given which consists of .csv files.

2) A databaseLoad.sql file has been provided which contains the sql commands needed for the creation of the Library Database. This file creates the database according to the schema provided.

3) The path to the databaseLoad.sql file has to be given in the mysql command prompt and thus the database is loaded.

4) A gui interface using java has been provided for a user friendly experience.

5) We open the gui java file and run the code. This connects the gui to the database.

6) Now the gui is pretty much self explanatory and the user can perform the various desired actions.

7) The Gui consists of book search, book loans, borrow management, show fines and pay fines buttons. The user can click the buttons and perform the desired operation.

Design decisions and justifications

1) In the gui eclipse I have used a JFrame with a card layout. The design consists of main JFrame containing a card layout having 5 cards. The alternative is to make use of tabbed panes in a JFrame or make use of internal frames in a JFrame.

2) The five cards contain the book search, book loans ,the add new borrower functionality, show fines and pay fines.

2) If an error occurs because of the user's false input it is displayed on a screen.

3) In the Database, the table book has a book\_id which has been made the primary key .

4) In the book\_authors table , the book\_id and author\_name form the primary key together. Also here we have splitted the author\_name to Fname, Mname & Lname so that a user can search according to his convenience.

5)The table library\_branch has branch\_id as its primary key.

6)The table book\_copies has book\_id as well as branch\_id as its primary key.

7) The table fines has loan\_id as its primary key.

8) The table borrower has card\_no as its primary key. No borrower can have two cards. Also the card\_no is auto incremented so that when we add a new borrower we give him a unique card\_no everytime.

9) The book\_loans has loan\_id as its primary key. This is also auto incremented so that each time a book is checked out from the library a new loan\_id is generated.

10) Search, Reset and update buttons have been provided and been used as per need.

11) In the Gui show fines and pay fines have been created. The show fines shows all the fines , paid and unpaid together as well as individually.

12) The pay fines table has a facility to be clicked upon and pay the fine.

Scope of Enhancement

1) Accepting the information from user by the hit of an "enter key".

2) Running the mysql command prompt directly from the gui interface.

3) Displaying more error messages for various reasons and limiting the user so that he inputs the correct information.

4) Dividing the phone tab in this format :- ( ) [ ]-[ ] and placing the cursor into next box automatically after entering the digits.

Technical Dependencies

1) Front end - JAVA GUI ECLIPSE

2) Back end - MYSQL

3)Mysql Connector/J 5.1.30