LIBRARY MANAGEMENT SYSTEM

PROBLEM DEFINITION

❒ A **library management software** is a project that manages and stores books information electronically according to students needs. The system helps both students and library manager to keep a constant track of all the books available in the library.

❒ It allows both the **admin** and the **student** to search for the desired book. It becomes necessary for colleges to keep a continuous check on the books issued and returned and even calculate fine. This task if carried out manually will be tedious and includes chances of mistakes

❒ These **errors are avoided** by allowing the system to keep track of information such as issue date, last date to return the book and even fine information and thus there is no need to keep manual track of this information which thereby avoids chances of mistakes.

❒ Thus this system **reduces manual work** to a great extent allows smooth flow of library activities by removing chances of errors in the details.

❒ The objective of this project is to develop a library database system in which a user can supply a specific book or keyword(s) within a book given a continuously expanding library. **Efficiency** requires that the processing time should stay relatively the same as the library content increases.

❐ This program is interactive and convenient to use for the user. The user can make the desired choice and the output will be executed accordingly.

The user is allowed to do the following things:

i. **Register an account** to get a unique Customer ID

ii. **Search for a desired book** in accordance to the Author Name, Book name, Genre, language, edition and price.

iii. **Check the availability** of the book and lend or buy the book.

iv. **Return a book**; if late to return, then fine has to be paid.

❐ The manual system of managing library has now become little slow and inefficient. The chances of making an error is more and it is also time consuming to write records in a register manually. As the size of the library increases, it almost becomes impossible to manually handle all the records.

IMPACT AND BENEFITS:

➢ This tool provides **increased efficiency** to librarians and library customers alike.

➢ This project allows a user to **fluidly build a customised library**. They can continue to add or remove content as desired over time without limitations.

➢ The query function will allow the users to access desired books and content in the **most efficient manner** possible.

BASIC PROBLEM ANALYSIS

➤ This application will be done with the help of Python interface with MySQL.

➤ The objective of this program is to allow the user to access the library database system and lend books in the most convenient way.

➤ It also provides the admin of the library to modify the database and manage all the books and accounts of each customer.

➤ The program first allows the user to choose between Admin and Customer.

If the user is an Admin:

1. He/she will be asked for the **admin id and password**.

2. If the password is correct, then the user will be allowed access to the complete library database.

3. The admin will now have the option to **DELETE, MODIFY or ADD new records** into the database.

4. The admin can also check the customer record and find out how many books are currently lent and how many customers are late to return the book.

5. The admin can also **add discount** to the price of the books.

6. The admin can also **check the history** of the customer.

7. The admin can check **how many books are borrowed** on that particular day and how often a particular book is being borrowed.

8. The admin can also check the **customer demand** for a particular book.

9. The admin can check the list of all books to be returned anytime and he/she can also access the **list of damaged or lost books**.

If the user is a customer:

He/she will be asked for **customer id**. If the user doesn't already have a customer id, he/she will be asked to register the mobile number to obtain a unique customer id. Once the user has a customer id, he/she can login.

1. He/she can **search for the required books**.

2. He/she can use certain conditions to search as well such as Author Name, Genre, Edition, price etc.

3. The customer has the choice to **buy or lend** the book from the library.

4. The user will also be shown some other **suggestions** based on his/her search.

5. He/she will be given the **date to return** the book if it is lent.

If the user is a customer and he/she wants to return a lent book:

1. He/she can check **whether the return date is due or not**.

2. If the return date is due, then the customer will be **asked to pay fine**.

3. If return date is not due then the book will be returned and the database will be updated.

HARDWARE AND SOFTWARE REQUIREMENT

- OS - Microsoft Windows 10

- System type- X64-64bit based processor

- Processor- Intel® core™ i5-6006U

- CPU - 2.00 GHz

- Memory (RAM) - 4.00GB

- Front end - Python v3.8.2:7b3ab59, MSCv.1916 64-bit

- Back End - MySQL Version 8.0