

# Library Management System

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## Introduction

The Library Management System is an application to manage various tasks such as check out and check in of books, adding the borrowers and fine management of the books.

Functions:

1. Search Books based on keywords.
2. Select the book and checkout if available.
3. Check in the book.
4. Pay fines for books checked in after the due date.
5. Add borrowers.

## Architecture

To implement the system, various schemas were build which are described below:

1. Book  
The book table contains the isbn, title and availability of book. Here, isbn acts as the primary key of the table.
2. Book Authors  
The Book\_Authors table contains the Author\_id and isbn number of the book written by the author. Here, Author\_id and isbn act as the primary key.
3. Authors  
The Authors table contains the Author\_id and name of the author. Here, Author\_id is the primary key.
4. Borrower  
The Borrower table contains the card\_id, SSN, Name, Address and phone number of the Borrower. Here, card\_id is the primary key.
5. Book Loans  
The Book\_Loans table contains the Loan\_id, ISBN, Card\_Id, Date\_out, Due\_date and Date\_in of the book loans. Here, Loan\_id is the primary key.
6. Fines  
The Fines table contains the Loan\_id and Fine\_Amount of the book loans. Here, Loan\_id is the primary key.

The application is built on **MVC**(Model View Control) Architecture.

**Libraries and Software Used**

Software Used: Wamp(Apache, MySQL, php)

Database: MySQL

Language: php, JavaScript, HTML, CSS, SQL

Libraries: Bootstrap