# System description

```
INDEX
|------ CHECK OUT
|          |----- BOOK SEARCH
|          |----- CHECK OUT
|------ CHECK IN
|          |----- LOAN SEARCH
|          |----- CHECK IN
|------ BORROWERS
|          |----- BORROWER SEARCH
|          |----- ADD BORROWER
|------ FINES
           |------ FINE SEARCH
           |------ FINE UPDATE AND VIEW
```
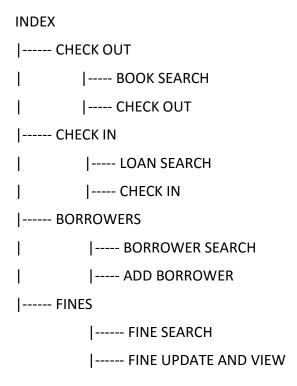
This simple library management system is made up of several PHP pages and a css style sheet.
The main organization and functions are shown in the diagram above.
The following are the descriptions of each page or file:

## config.php
This page contains the preferences to connect to the database, and the code that creates the connection. In other PHP pages whenever a connection needed, we simply use the code "include('config.php')" to connect to the database. In practical use, admin user should change the preferences in this page before use, and during use, this file should be kept invisible and inaccessible from general users to keep the system safe.

## index.php and nav.php and welcome.php
These three pages are actually html pages. They form the system's homepage.

index page is composed of two iframes: one contains the nav.php as the navigation bar consistently appearing on the left part of the system, the other contains a "body" iframe, and shows the required page when we click the proper link.

The default index contains the navigation bar and a welcome page.

The welcome page shows some simple instructions of the system. When the user has an uncertainty of how to do, he/she can come back to these instructions by clicking the "WELCOME" link of the navigation bar.

## search.php and checkout.php

These two pages allow users to search for a book and then check it out.

The "CHECK OUT" link in the navigation bar will link to search.php page. This page contains a search form. We can enter any or any combination of Isbn13, Isbn10, Book Title or Author Name information to look for a book. Items can be partially entered.

If results exist, a result table with "CHECK OUT" button for each book will be shown. If the book is available, we can click the button and go to the page checkout.php. If there is no available copy, the "CHECK OUT" button is disabled.

In the checkout page we'll have to enter the borrower's ID to check out the book.

A message will be shown if the book is successfully check out. A due date will be given too. The checkout process will insert a loan record in the BOOK_LOANS table. The Loan_id is auto-incremented. The Due_date is 14 dates after the current Date_out. And the Date_in is set to "0000-00-00" until the book is returned.

## checkin.php

This page allows users to search for a loan record and then check a book in.

The "CHECK IN" link in the navigation bar will link to chekin.php page. This page also contains a search form. We can enter any or any combination of Card ID, Borrower's Name, Isbn13 and Book Title information to look for a loan record. Items can be partially entered.

If results exist, a result table with "CHECK IN" button for each book will be shown. By clicking the CHECK IN button, we directly return the book.

A message will be shown if the book is successfully returned. The check in process will update the appropriate loan record to set the Date_in value into the current date.

**borrower.php** and **addborrower.php**

These two pages allow users to search and add borrowers.

The "BORROWERS" link in the navigation bar will link to borrower.php page. This page contains a small search form. We can enter any or any combination of Card ID, Borrower's Name information to search for a borrower. Items can be partially entered. To reduce the number of searching results we should enter the exact searching keyword. The search result will provide us with the borrower's information.

The "ADD" button links to addborrower.php page which contains a registration form of new borrower. The items with stars * are obligatory items and can't be left blank. Registration won't be completed and prompts will be shown if there are left blank. What's more, every borrower must have a unique Ssn number. If we enter an Ssn number that already exists, the registration won't be done neither. A message will be shown if we successfully add a new borrower. The add process will insert a new record in the table BORROWER in the database. Card_id is auto-incremented.

**fine.php** and **updatefine.php**

These two pages allow users to search for fines, view them and pay the fines.

The "FINES" link in the navigation bar will link to fine.php page.

Before enter a card id and search fines, we should click the button "UPDATE AND VIEW RECORDS" to update the FINES table or the data will be out-of-date. This button will lead to updatefine.php page which contains the code that updates the records in the FINES table. A table of unpaid fines will be shown too. (by setting Paid value to 0 ) And the fines are shown by card ID. On this page, we also have another button "FINES HISTORY" which allow user to see all the fine records, including the fines paid. And all the results are shown by loan ID.

Once we update the FINES information, we can click "BACK TO SEARCH" button on the update page to go back to search for the fine unpaid for a certain user by using the card ID. A total amount to pay and the details will be shown. By click "PAY NOW" button, we directly pay the

fines. This process will update the Paid value to "1" (paid)  in the FINES table. Borrowers should return the books before they pay the fines.

**mycss.css**

This css style sheet contains the css code that determines how the pages look like: font, color, indentation, button style, etc.