LIBRARY MANAGEMENT SYSTEM Application Development

ELF / HTD Training Programs

Java Full Stack – Use Cases

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1. INTRODUCTION

This document outlines a Project. The project is to develop Library Management System (LMS). This document contains the work flow of the system and gives guidelines on how to build the functionality gradually in each of the course modules.

1.1 Setup Checklist for Project

Minimum System Requirements

- Intel Pentium 90 or higher (P166 recommended)
- Microsoft Windows 95, 98, or NT 4.0, 2k, XP, Windows 7
- Memory: 32MB of RAM (64MB or more recommended)
- Internet Explorer 6.0 or higher

1.2 Instructions

- ➢ The code modules in the mini project should follow all the coding standards.
- ➢ You can refer to your course material
- ➢ The total time required to complete this project is 50 hrs.
- ➢ Since this project work will span over couple of months, you will need to take care of maintaining the code

2. PROBLEM STATEMENT

Presently, transaction of books in the institutional libraries have been done manually in most cases, thereby taking more time for transaction like borrowing of books or return of books and also searching of member and books. Series of problems occur as a result of this thereby resulting to inefficient library management. In most cases as a result of human error there maybe loss and damages of records due to not using a computerized system in the library.

2.1 Objective

2.1.1 General Objective

The main objective of this project is to develop a computerized system that will manage the activities in the library thereby providing easy access of library usage for librarian and users of the library, it will also help librarians keep track of library information etc. This system will also provide electronic means of storage and help librarians keep track of library information.

2.1.2 Specific Objective

The objectives are:

i. Designing a computerized library management system which would help evacuate the problem faced in manual library.
ii. Implementing the system.
iii. Evaluating and testing the performance of the system.

2.1.3 Scope of the Study

The Project to be produced is a Library Management System which will automate the major library operations. The first subsystem is the registration of the users to the system to keep track of authorized users to the system. The second subsystem is the registration of new books into the library management system to know when new

books are brought into the library. The third subsystem is a borrower and return of books which is the major area needed by the user.

2.2 Abstract of the Project

This project is aimed at developing Library Management System (LiMS) for the college library. This is an Intranet based application that can be accessed throughout the campus. This system can be used to search for books/magazines; reserve books, and issue/return books from the library. This is an integrated system that contains both the user component and the librarian component.

3. IMPLEMENTATION

3.1 Functional Requirements

Following is a list of functionalities of the system. Wherever, the description of functionality is not adequate; you can make appropriate assumptions and proceed.

There are two categories of people who would access the system viz. students & Librarian/Admin. Each one of them would have some exclusive privileges (for e.g. Students can just place the request for a book, but only the librarian has the right to issue the books and also track the return.)

1. Students should be able to
   - login to the system using his/her credentials
   - Place a request for a particular book

2. The librarian/Admin should be able to
   - login to the system using his/her credentials
   - include new books or remove some books from the inventory
   - manage return and issue book operations

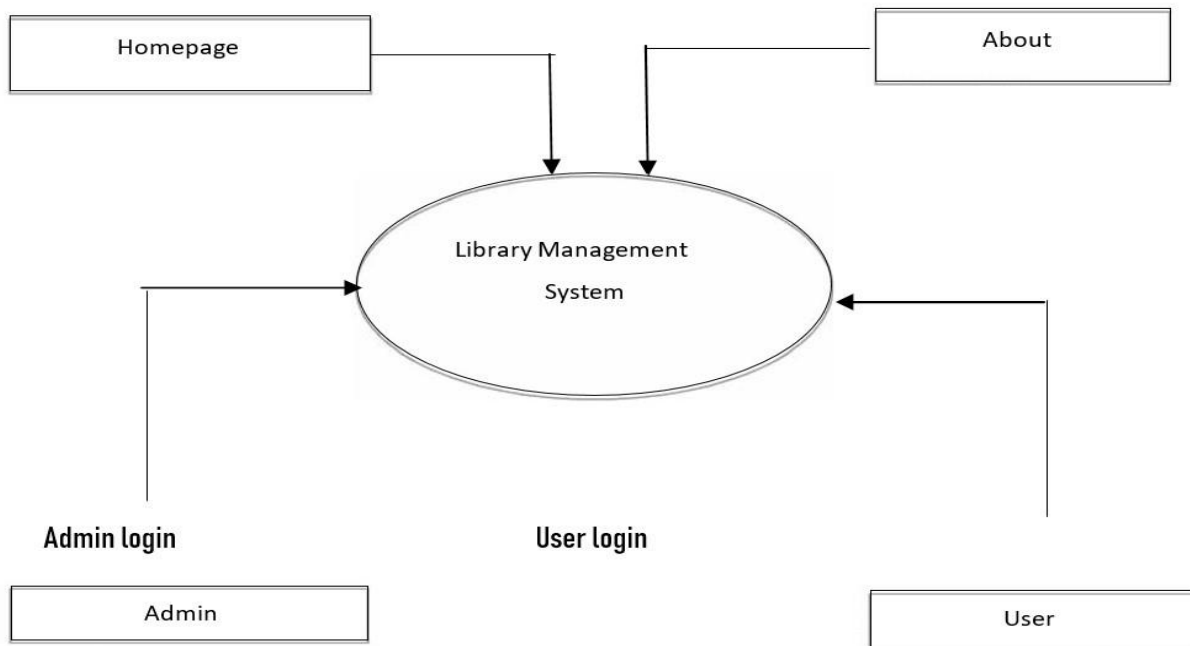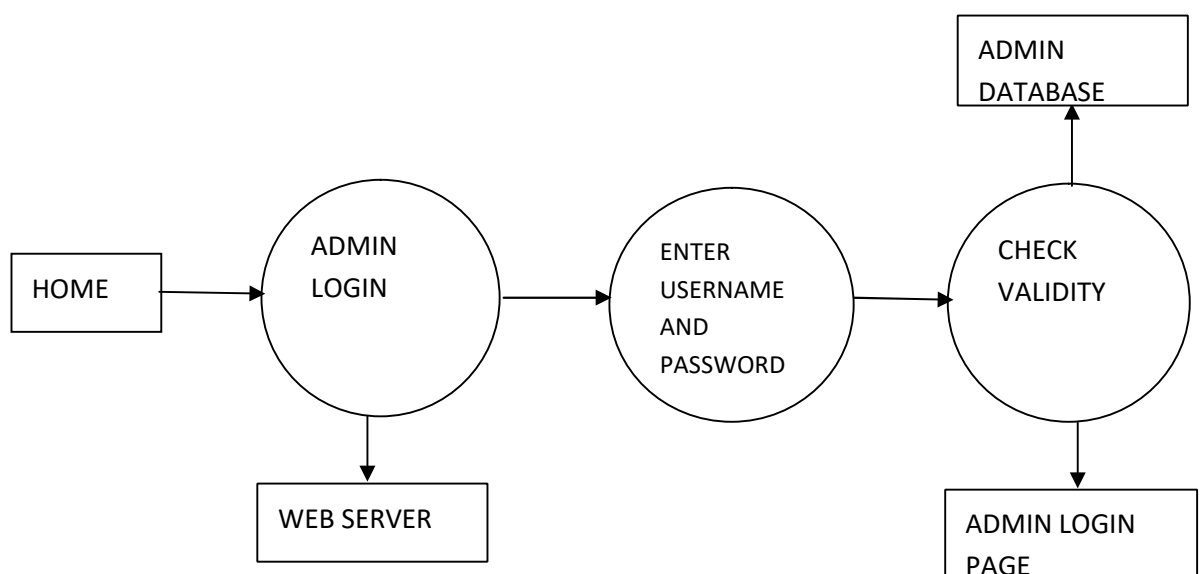## 3.2 Context Diagram for Library Management System

Figure: Context Diagram

4. System implementation

4.1 System Users Administration

(i) Admin Login

After entering to the home page of the website, librarian can choose the ADMIN LOGIN option where they are asked to enter username and password, and if he/she is a valid user then a login page will be displayed.

(ii) User login

After entering to the home page of the website, user can choose the USER LOGIN option where they are asked to enter username and password, and if he/she is a valid user then a user login page will be displayed.
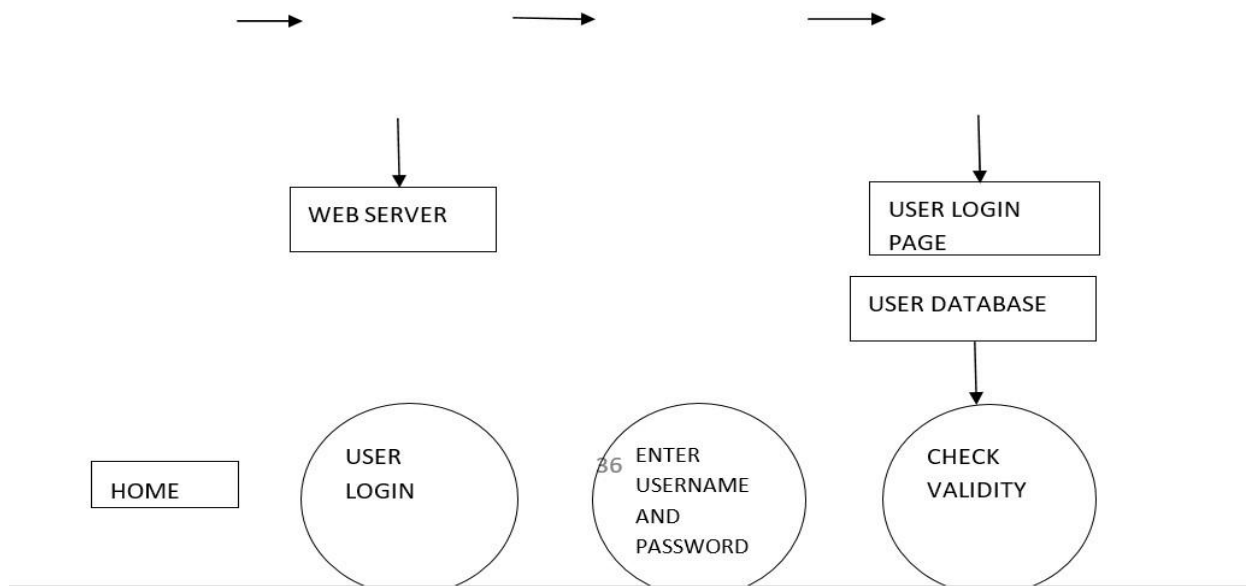

(iii) Book borrow

The book borrow Data Flow Diagram is the one where after entering USER LOGIN page he/she can select a book borrow option where after entering the book detail, he/she can select the book borrow option and if the maximum no of books borrowed limit is not crossed then a book can be borrowed. A certain user is entitled to borrow three maximum books at a time else the user cannot borrow more than. In the borrowing of books, a user will be prompt with the due date.
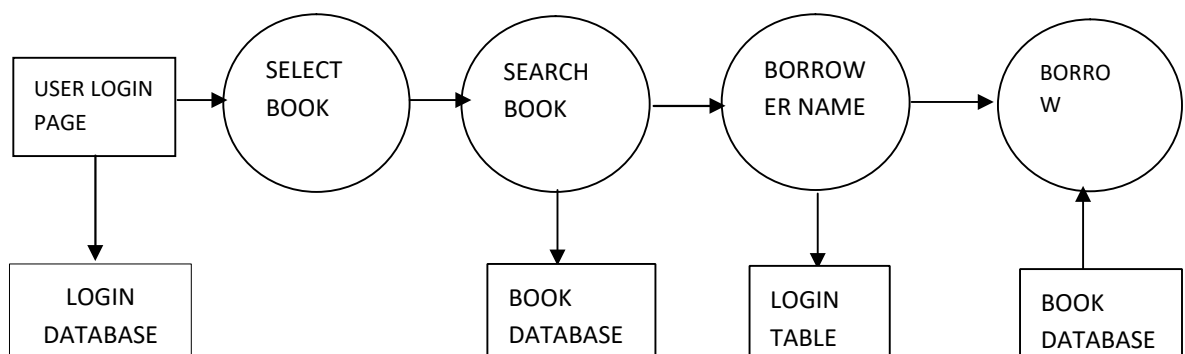

(iv) Book search

After the home page login there will be an option of the book search where after entering book detail like author name, publication, book name etc. book details will be displayed.
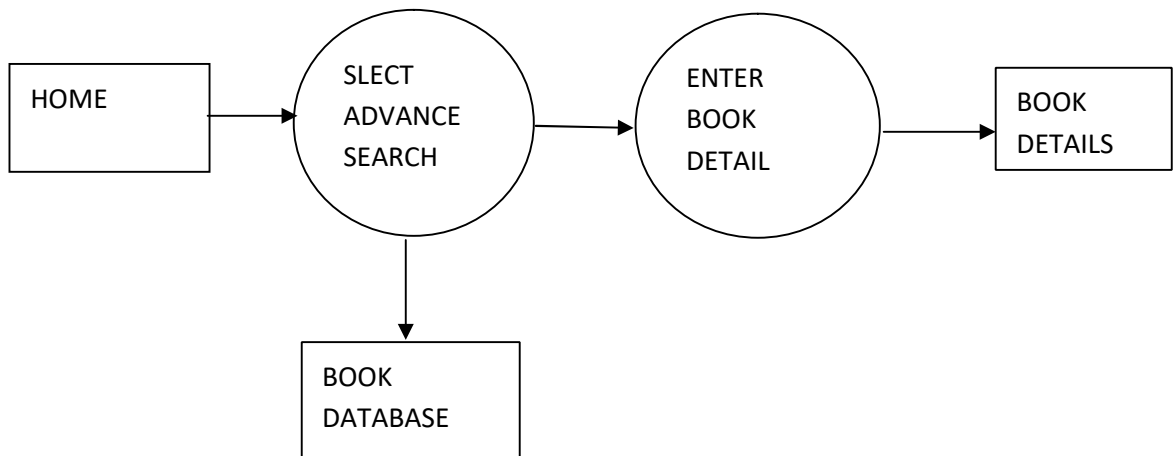
(v) Account creation

After the home page login there will be an option of CREATE AN ACCOUNT where after entering student detail, if all the fields are filled then a request will be sent to the librarian who will approve him as a registered member of the library.
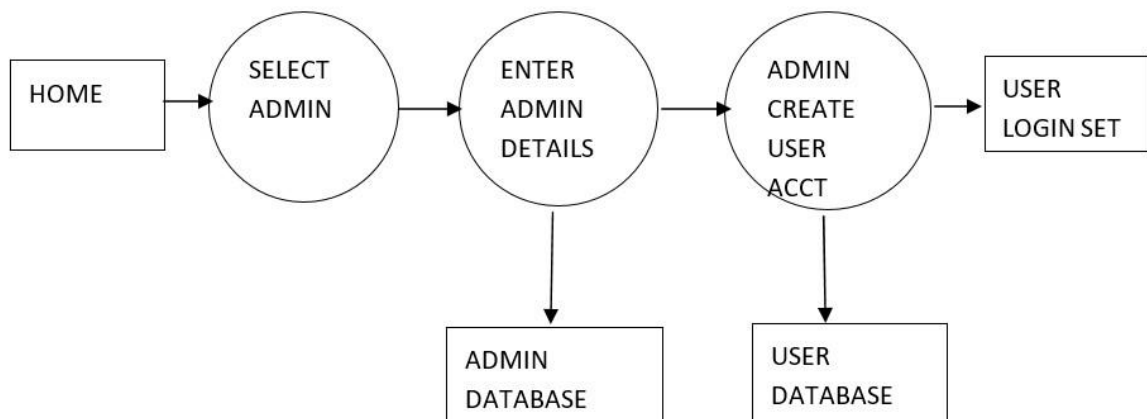
4.2 Administrator Environment

4.2.1 HomePage

This is the first interface of the library management system, it provides the basic page where user and admin can click on to access the library system.

The home, about, admin user and sections are entailed in this page. Both the admin and the users of the library can access the home page of the library as it has been authorized and authenticated for use.


4.2.2 Admin Login

For the admin login, the admin can log in with his /her own username and password while for the user login, a given user must have to be registered before getting the access to have the username and password to use the library.
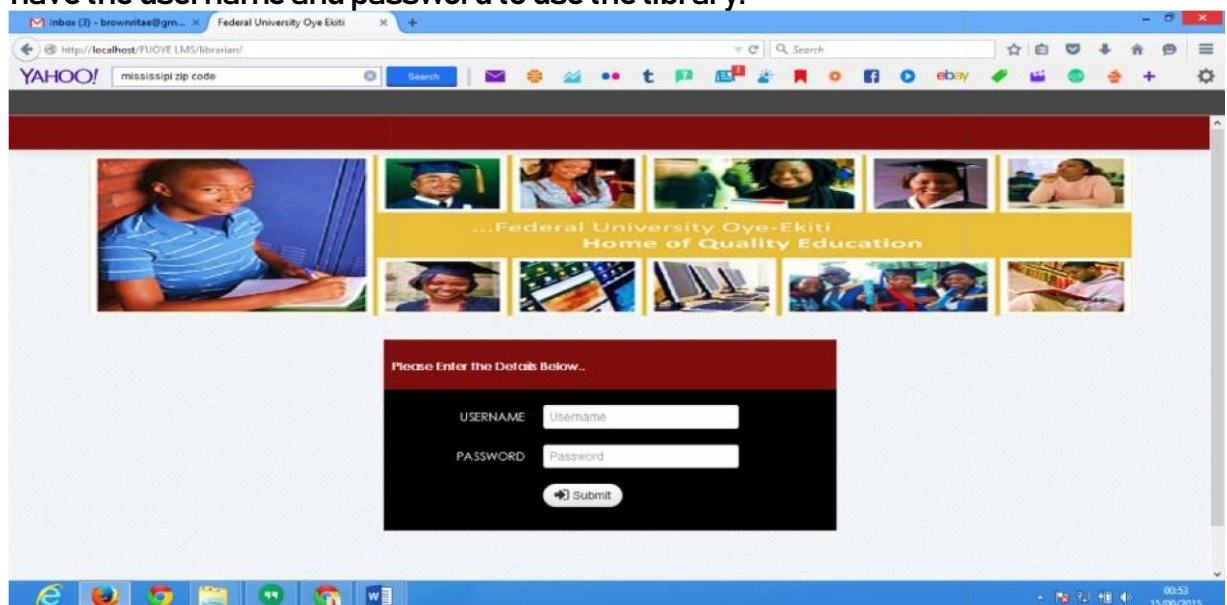
4.2.3 Add Books

Here, only the admin have the authorized access to add a particular book to the library shelf. The user have no access to this. The library admin more like the librarian can add new books to the library as much as possible for the user to borrow and use.
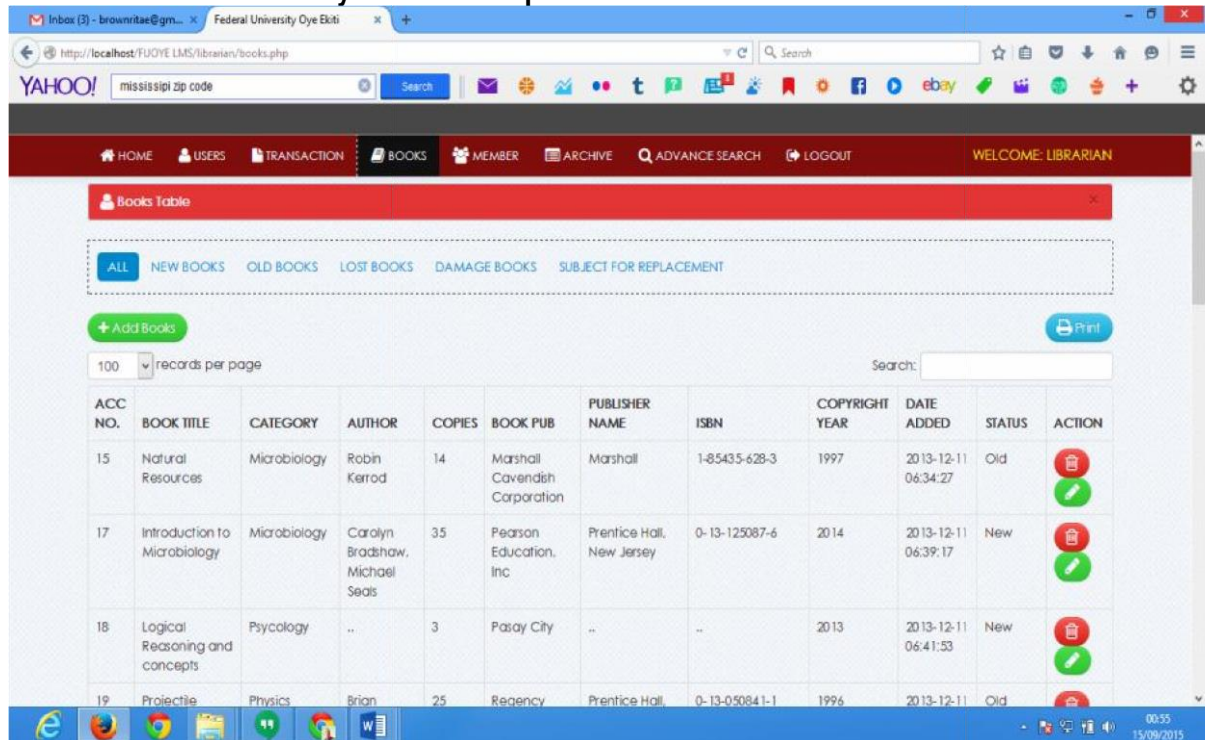
4.2.4 Add User

Here the admin can add a new user of the library, by registering the user needed information to use the library. Information such as the user name, required password, matriculation number, department and level are required by the admin from the user to get registered as a library user.
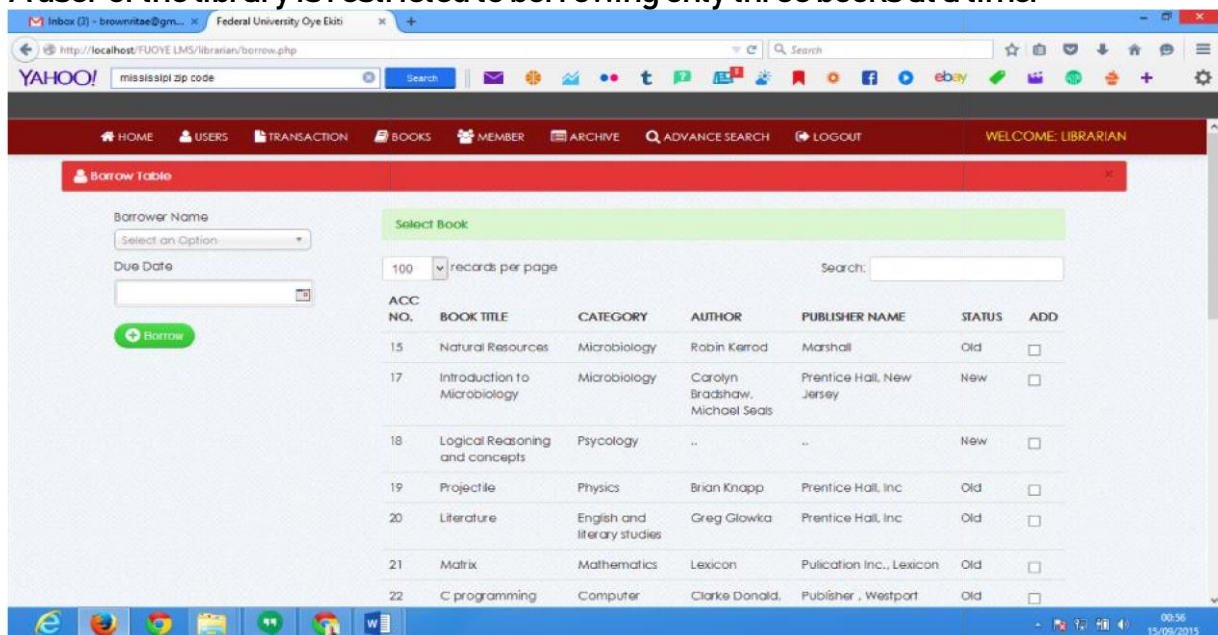
After being added as a user, the user can then have his/her login such as the username and password so as to get access to the library system.
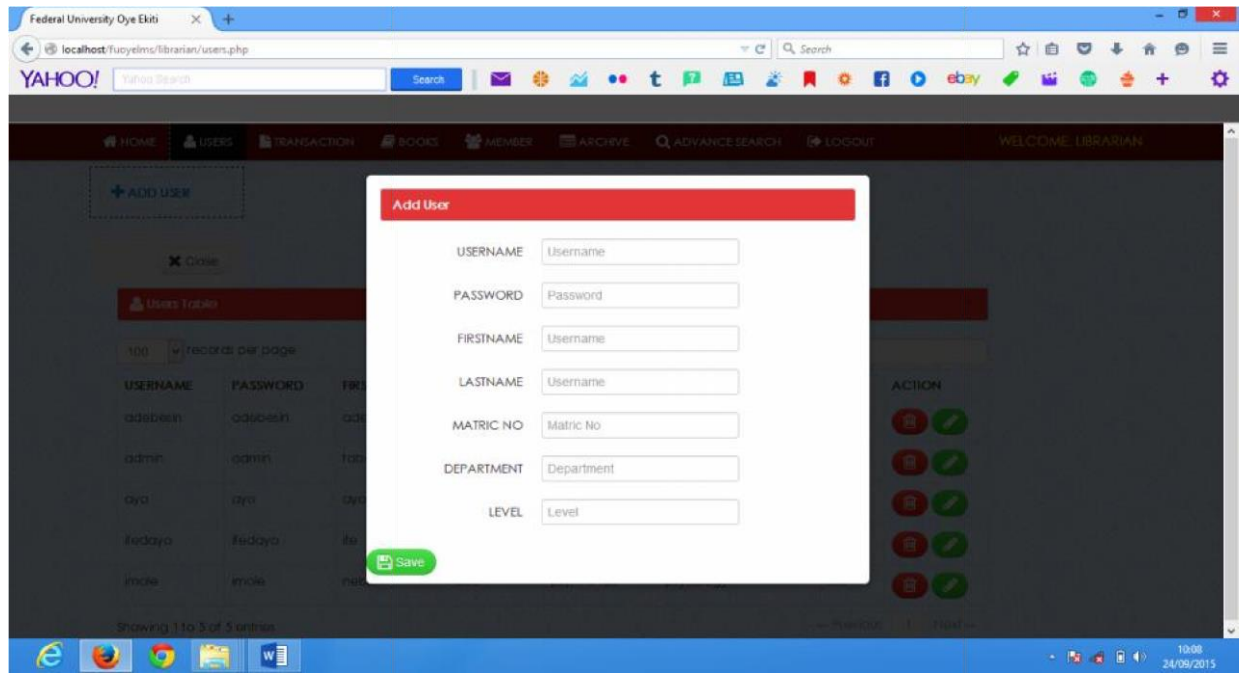
4.3 Users Environment

4.3.1 Book Borrow

Here the user of the library after being registered can borrow a particular book in the library. A user of the library is restricted to borrowing only three books at a time.

5. Conclusion

In conclusion, from proper analysis and assessment of the designed system it can be safely concluded that the system is an efficient, usable and reliable Library Management System. It is working properly and adequately meets the minimum expectations that were for it initially. The new system is expected to give benefits to the users and staff in terms of efficiency in the usage of library system