HIGH LEVEL DESIGN(HLD)

COLEGE LIBRARY MANAGEMENT SYSTEM HLD DOCUMENT

CONTENTS:

ABSTRACT

Library management system is a project which aims in developing a computerized system to maintain all the daily work of library. It also has a facility of admin login through which the admin can monitor the whole system. It has a facility where student after logging in their accounts can see list of books issued and its issue date and return date. This system will store all the books and members information that consist book numbers, book titles, author names and racks to the system database. It also provides search function to help students find the book by number of book. Search function will search through the books database to look for the book and view where the book is situated. Administrator can handle administrative functions such as create new LMS user account and decide the number of days allowed for the borrowed books.

Overall this project is being developed to help the students as well as staff of library to maintain the library in the best way possible and also reduce the human efforts.

1. INTRODUCTION

1.1. Why this high level document:

The purpose of this High-Level Design (HLD) Document is to add the necessary detail to the current project description to represent a suitable model for coding. This document is also intended to help detect contradictions prior to coding, and can be used as a reference manual for how the modules interact at a high level.

The HLD will:

- Present all of the design aspects and define them in detail
- Describe the user interface being implemented
- Describe the hardware and software interfaces
- Describe the performance requirements
- Include design features and the architecture of the project
- List and describe the non-functional attributes like:
    - Security
    - Reliability
    - Maintainability
    - Portability
    - Reusability
    - Application compatibility
    - Resource utilization
    - Serviceability

1.2. Scope

The HLD documentation presents the structure of the system, such as the database architecture, application architecture (layers), application flow (Navigation), and technology architecture. The HLD uses non-technical to mildly-technical terms which should be understandable to the administrators of the system.

2. General Description

2.1 Product Description

Library Management System is a computerized system which helps user to manage the library daily activity in electronic format. It reduces the risk of paper work such as file lost, file damaged and time consuming. It can help user to manage the transaction or record more effectively and efficiently.

2.2. Problem Statement

The problem occurred before having computerized system includes:

File lost

When computerized system is not implemented, files can be lost because of human error. Sometimes due to some human error there may be a loss of records.

File damaged

In a non-computerized environment file may be lost due to some accident due to error caused by humans. Besides, some natural disaster like floods or fires may also damage the files.

Difficult to search record

When there is no computerized system there is always a difficulty in searching of records if the records are large in number.

Space consuming

After the number of records becomes large the space for physical storage of file and records also increases if no computerized system is implemented.

2.3. Proposed Solution

Improvement in control and performance:

The system is developed to cope up with the current issues and problems of library. The system can add user, validate user and is also bug free

Save time:

After computerized system is implemented less human force will be required to maintain the library thus reducing the overall cost.

Save cost:

Librarian is able to search record by using few clicks of mouse and few search keywords thus saving his valuable time.

3. SYSTEM REQUIREMENTS

3.1. NON FUNCTIONAL REQUIREMENTS

3.1.1. EFFICIENCY REQUIREMENT

When a library management system will be implemented librarian and user will easily access library, since searching and book transaction will be very faster.

3.1.2. RELIABILITY REQUIREMENT

The system should accurately performs member registration, member validation, report generation, book transaction and search

3.1.3. USABILITY REQUIREMENT

The system is designed for a user friendly environment so that student and staff of library can perform the various tasks easily and in an effective way.

3.1.4. IMPLEMENTATION REQUIREMNTS

In implementing whole system it uses html in front end with javascript and ASP .NET as server side scripting language which will be used for database connectivity and the backend i.e. the database part is developed using MySQL.

3.2. FUNCTIONAL REQUIREMENTS

3.2.1. USER LOGIN

Description of feature:
This feature used by the user to login into system. They are required to enter user id and password before they are allowed to enter the system .The user id and password will be verified and if invalid id is there user is allowed to not enter the system.

Functional requirements:

-user id is provided when they register
-The system must only allow user with valid id and password to enter the system
-The system performs authorization process which decides what user level can acess to.
-The user must be able to logout after they finished using system.

3.2.2. REGISTER NEW USER

Description of feature:
This feature can be performed by all users to register new user to create account.

Functional requirements:

-System must be able to verify information.
-System must be able to delete information if information is wrong

3.2.3. REGISTER NEW BOOK:

Description of feature
This feature allows adding new books to the library.

Functional requirements
-System must be able to verify information
-System must be able to enter number of copies into table.
- System must be able to not allow two books having same book id.

3.2.4. SEARCH BOOK:

DESCRIPTION OF FEATURE
This feature is found in book maintenance part. We can search book based on book id, book name, publication, or by author name.

Functional requirements
-System must be able to search the database based on select search type
-System must be able to filter book based on keyword entered
-System must be able to show the filtered book in table view

3.2.5. ISSUE BOOKS AND RETURN BOOKS:

DESCRIPTION OF FEATURE
This feature allows issuing and returning books and also viewing reports of book issued.

Functional requirements
-System must be able to enter issue information in database.
-System must be able to update number of books.
-System must be able to search if book is available or not before issuing books.
-System should be able to enter issue and return date information

4. SOFTWARE AND HARDWARE REQUIREMENTS

4.1. SOFTWARE REQUIREMENTS

FRONT END: HTML5 and CSS
OPERATING SYSTEM: Windows XP, Windows 7, Windows 8
LANGUAGE: ASP .NET and Visual Studio
DATABASE: MS SQL Server (back end)

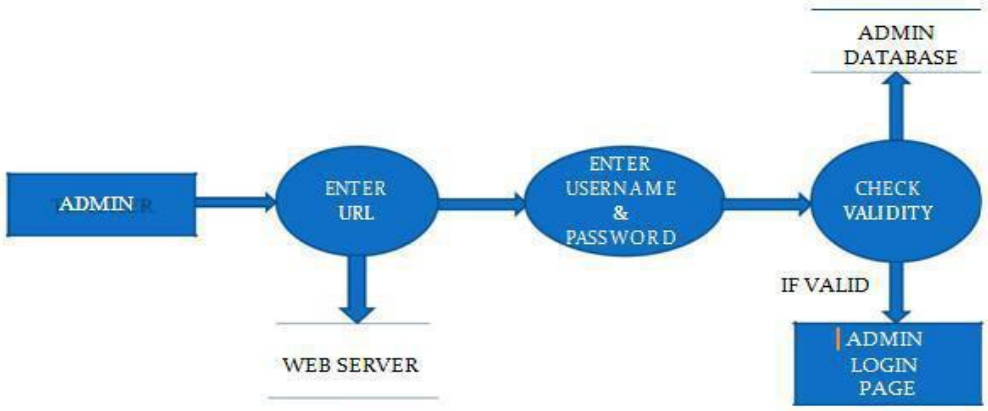
4.2. HARDWARE REQUIREMENTS

An x64-capable processor
2 gigabytes (GB) of available hard disk space
2 GB or more of RAM
A monitor with a resolution of 1024 × 768 A CD-ROM or DVD-ROM drive

5. DATA FLOW DIAGRAMS

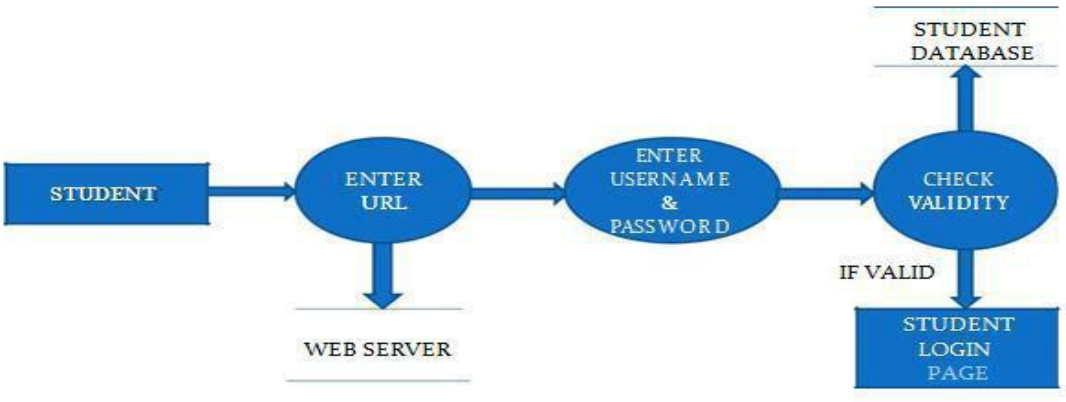
5.1. DATA FLOW DIAGRAM FOR ADMINISTRATOR LOGIN

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



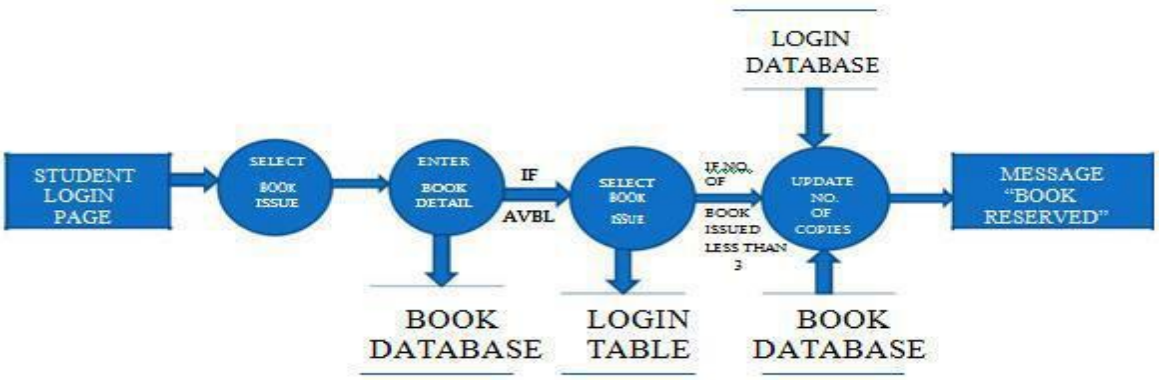
5.2. DATA FLOW DIAGRAM FOR STUDENT LOGIN

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



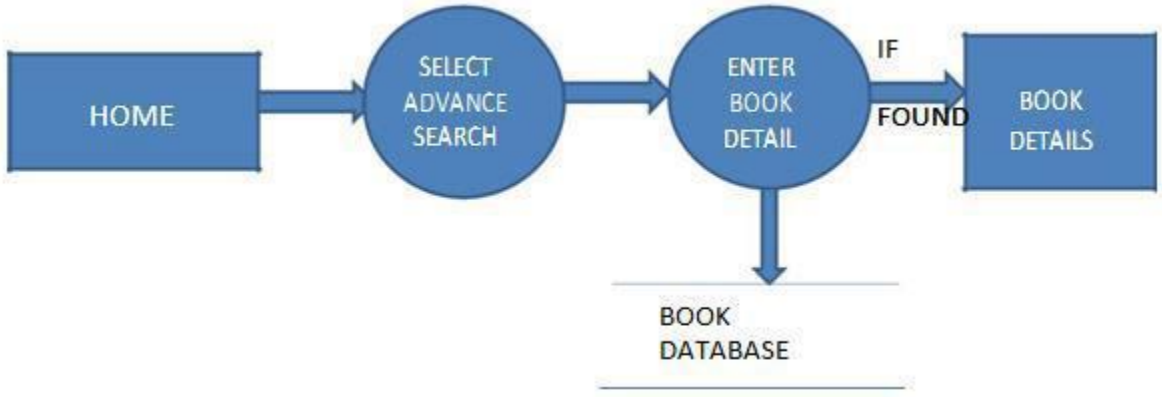
5.3. DATA FLOW DIAGRAM FOR BOOK ISSUE

It is a second level Data Flow Diagram where after entering STUDENT LOGIN page he/she can select a book issue option where after entering the book detail, he/she can select the book issue option and if the maximum no of books issued limit is not crossed then a request will be sent to the librarian who will approve the book issue.



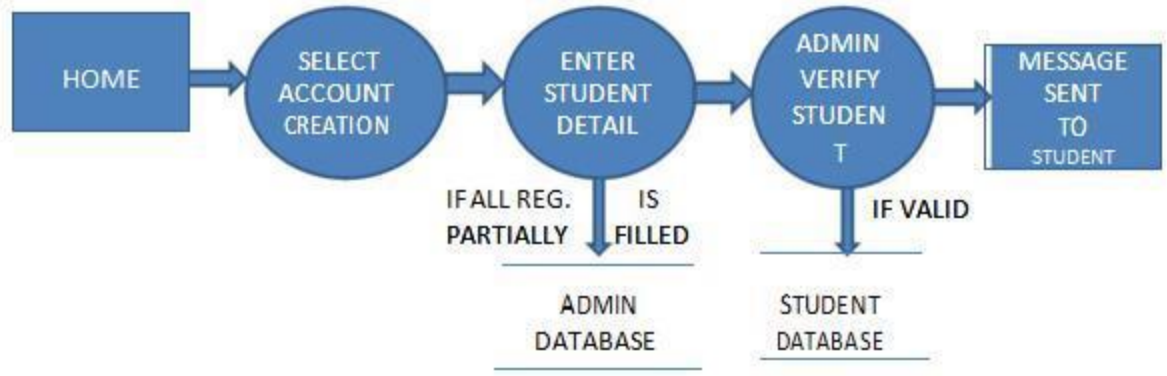
5.4. DATA FLOW DIAGRAM FOR BOOK SEARCH

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.

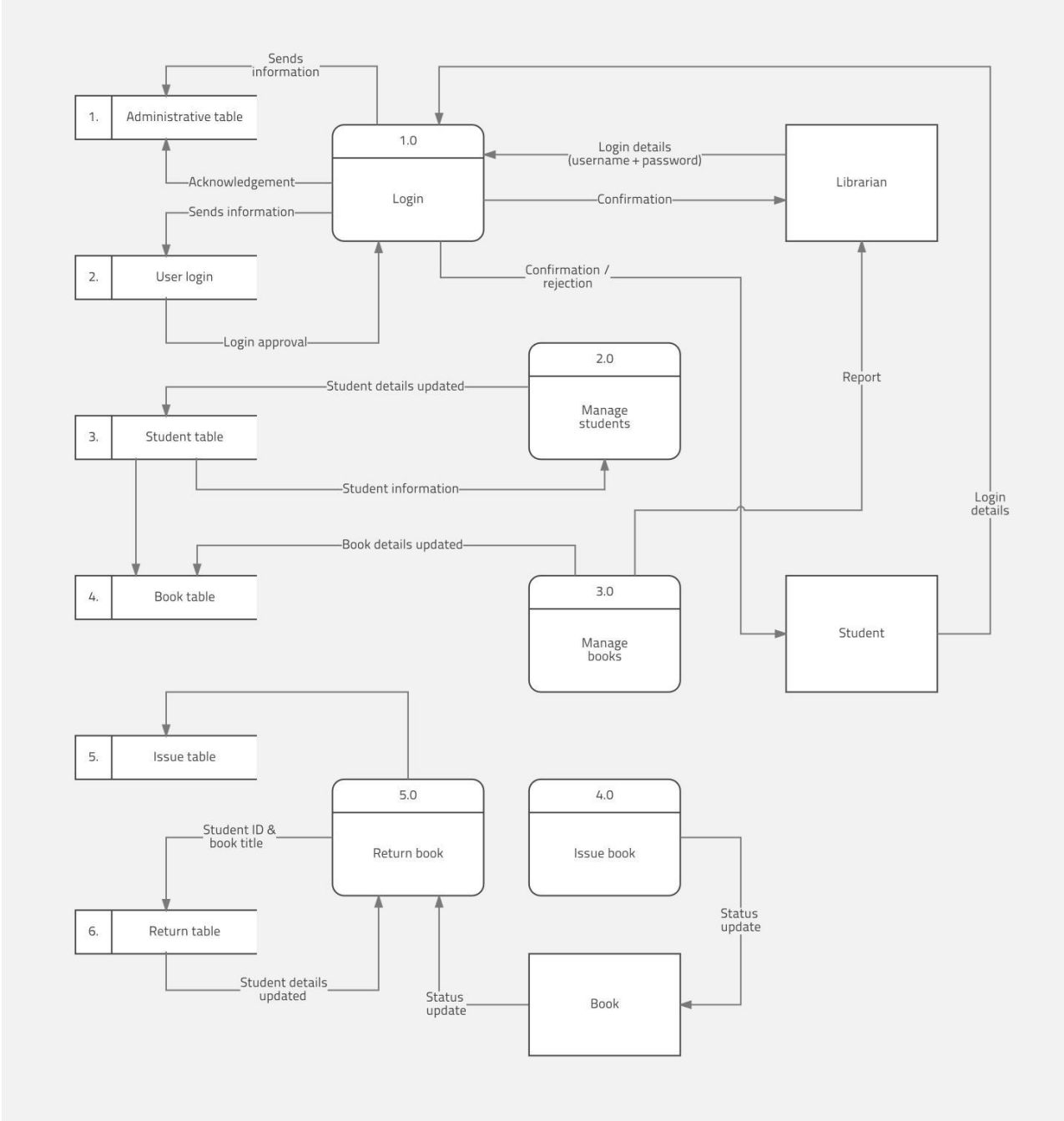


5.5. DATA FLOW DIAGRAM FOR ACCOUNT CREATION

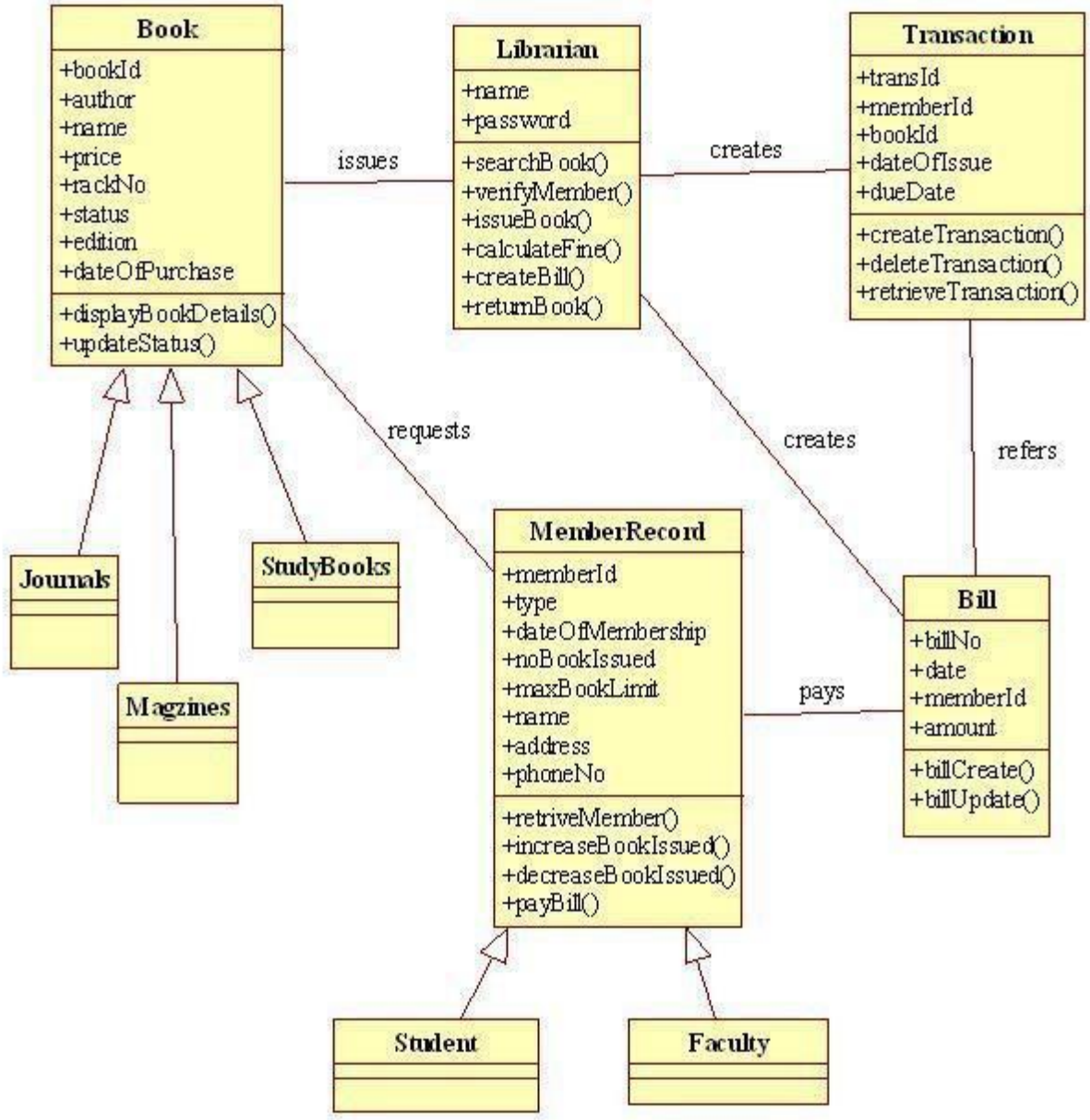
After the home page login there will be an option of CREATE AN ACCOUNT where after entering student detail, if all the fields are filled then a request will be sent to the librarian who will approve him as a registered member of the library



6. DIAGRAM OF THE PROPOSED SYSTEM



7. DATABASE DESIGN:



8. CONCLUSION:

The Internet has become a major resource in modern life, thus library management system has gained significance not only view. For the management, library system generates new books opportunities and for the student, it makes comparative selecting possible. As per a survey, most students of online library system are impulsive and usually make a decision to stay on a site within the first few seconds. Website design is like a management interior. If the management looks poor or like hundreds of other management the student is most likely to skip to the other site. Hence, the project has been designed to provide the user with easy navigation, retrieval of data and necessary feedback as much as possible

9. REFERENCES:

1. http://dcm.uhcl.edu
2. iq.opengenius.org
3. www.Researchgate.net