Sri Lanka Institute of Advanced Technological Education
(SLIATE)

A proposal on

Online Library Management System

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1. Introduction

This project proposal is submitted "to meet the software development requirements of Group project module conducted by the" Sri Lanka Institute of Advanced Technological Education (SLIATE), Batticaloa, 2020.

This project is concerned with developing a Library Management System for Urani Public Library in order to make library management more efficient and easy to handle. The Library management system enables a fully automated library service. It has the ability to display the details of the books available in various departments, the transactions of books and about the book holders.

The goals of this project are to provide simplicity as well as security and efficiency to the management of Urani Public Library and also reduce managing personnel in the library.

Library management system is a project which aims in developing a computerized system to maintain all the daily work of library .This project has many features which are generally not available in normal library management systems like facility of user login. It also has a facility of admin login through which the admin can monitor the whole system.

It has also a facility where student after logging in their accounts can see list of books issued and its issue date and return date and also the students can request the librarian to add new books by filling the book request form. The librarian after logging into his account ie admin account can generate various reports such as student report , issue report, teacher report and book report Overall this project of ours 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.

2. Background and Motivation

We have selected to develop an Online Library Management System for a Urani Public Library, Batticaloa. Library management system develop to meet the local requirements in Urani Public Library. It has small readers base.

Library Management System is an application which refers to library systems which are generally small or medium in size. It is used by librarian to manage the library using a computerized system where he/she can record various transactions like issue of books, return of books, addition of new books, addition of new students etc. Books and student maintenance modules are also included in this system which would keep track of the students using the library and also a detailed description about the books a library contains. With this computerized system there will be no loss of book record or member record which generally happens when a non-computerized system is used.

In addition, report module is also included in Library Management System. If user's position is Admin, the user is able to generate different kinds of reports like lists of students registered, list of books, issue and return reports. All these modules are able to help librarian to manage the library with more convenience and in a more efficient way as compared to library systems which are not computerized

The Library Management System is designed & developed for the Manage Books and Members details, Issuance and Submission of books in the library based in online so we can get data or booked books in our home. In a non-computerized Library management system, when a book is issued or returned, it is noted down in a register after which data entry is done to update the status of the books. This process takes some time and proper update of this information cannot be guaranteed. Anomalies in the update process can cause loss of books. So a more user friendly interface which could update the database instantly has a great demand in libraries, hence the need for this project.

3. Problem in Brief

Many libraries are operated manually by a group of people. These people keep records regarding the books & members (borrowers), check the books manually and keep records on issued books. All these things have to be carried out manually and if the library is very large, proper record keeping will become a major problem as manual record keeping has never been a reliable method because people tend to forget things.

Other problems of the existing system are:

- Fast report generation is not possible
  - This current System keep in manually by the Library Staff. So not easy to get the Book Issue, Return and there details quickly.

- Tracing a book is difficult
  - The Library Contain more than 13000 Books. So User or Members can't Search particular book is difficult.

- Details Duplicated and Missing
  - This current System keep in manually by the Library Staff. Sometime Book Details or Members Details Registered again and again with the Staff.

- Information about issue/return of the books is not properly maintained.
  - This current System keep in manually. So sometimes Library Staff or Librarian forget to add the issue or return book details in the Book Issue and Return Register Book.

- Lack of Security
  - Manual or Paper document filling can be less secure then computerized System. Sometimes the manual system can damaged by any issues by people or animals.

- Access Time
  - The manual system take long time process compare with computerized System. Example User search the particular book from book record its can take long time.

- Does not have reservation
  - Before having website, the customer which is member of the library does could not reserve book from the library. So when they wanted to borrow a book without knowing there quantity still left or not, so they have to travel from their destination to library. If the book is out of stock, they needed to wait for the people return only they can borrow again.

4. Aims and Objectives

4.1 Aims

Aim of our project is to develop a Library Management System for addressing the problems in the current Library Management process in online with the use of IT Solutions.

4.2 Objectives

To overall objective of this project is to establish a System for library.

So as to improve the performance and efficiency of library management. It is the user friendly website for librarian which reduce the burden and helps to manage the library. The main objective of this system is making the library organizations computerized by creating neat work through minimizing or eliminating wasting of time as well as removing the resources such as paper for data saving since know a days is paper based. There are some specific objectives should be implemented.

- ❖ Help to improve the library services.
- ❖ Help the Liberians with management information.
- ❖ Help the librarian in reporting on the various operations of the library.
- ❖ Increase the rate at which Tasks are completed accurately
- ❖ Obviate the need to hire additional staff with increased demand for services.
- ❖ Online book issue
- ❖ Request column for librarian for providing new books
- ❖ A separate column for digital library
- ❖ Student login page where student can find books issued by him/her and date of return.
- ❖ A search column to search availability of books

❖ Student login page where student can find books issued by him/her and date of return. After computerized system is implemented less human force will be required to maintain the library thus reducing the overall cost. A search column to search availability of books. A teacher login page where teacher can add any events being organized in the college and important suggestions regarding books.

4.3 System Objectives

- 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 cost

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

- Save time

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

5. Proposed Solution

The Proposed Solution of the manual library management is to develop a computerized library management system. Before developing the proposed system, there is need to identify;

a) The design of the proposed system

b) The main users of the library management system

c) The activities of the main users

5.1 Planning

The objective and goals of the system were defined clearly include the project scope. In this case, the objectives and goals of the system are to improve the management process in library and at the same way to improve process of recording data and data retrieval.

5.2 Analysis

5.2.1 Current system

The current library system were manually based system which is almost all works on the library organization is accomplished by papers. Among thus book data search in order buy, audit, and other related works. And other one is data security, the data can be accessed anyone who entered to the library.

In current system almost all libraries do not use computerized system and use manual searching of books on shelf because of manual based system and there is nothing which gives no notification for the issued books. Also there is a difficulty on store the data which wastes resources as well as time to retrieve the necessary data from the manually based data system. So generally the current system does not arrange books in systematic way, does not store the books appropriate data.

5.2.2 Proposed system

With a proposed system, the librarian will be able to monitor the movement of the books with ease. The system is design to track the entry of refresh batches of books.

Compared to the current manual system, the implementation of Library management system will reduce the time spent for paper work. Minimize human errors in medication safety. Which simply change manual based system to computerized system

Existing vs. Proposed system

i. Existing system does not have any facility of teachers login or student login whereas proposed system will have a facility of student login as well as Teacher's login

ii. Existing system does not have a facility of online reservation of books whereas proposed system has a facility of online reservation of book.

iii. Existing system does not have any facility to generate student reports as well book issue reports whereas proposed system provides librarian with a tool to generate reports

iv. Existing system does not has any facility for book request and suggestions where as in proposed system after logging in to their accounts student can request books as well as provide suggestions to improve library

5.1 The Design

The proposed system will be designed using HTML This Library System is in PHP, JavaScript, and CSS. Talking about the features of this system, it contains the admin section and the user (student) section.

All the editing's, updating, managing books, authors, and students are from the admin section. The design of this system is pretty simple so that the user won't get any difficulties while working on it.

5.2 The main users

The main users of the proposed system are the Borrowers or Members and the Administrator or Librarian.

5.3 Their activities

The activities of the main users of the proposed system are listed in a table below.

Activities of Borrowers OR Members	Activities of Administrator OR Librarian.
• Search the Books • View the Books Details • Members can Register them Self. • Members can update their details them self. • Borrow the Books	• Add/Delete/Update Books • Issue the Books • Return or Renew the Books • Add/Delete/Update Members • View and Maintain the Members and Books Details

Activities Table 5.3.1

5.1 Gantt Chart

Activities	Duration (Week)													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Requirement Gathering	■	■	■											
Planning				■	■									
Designing					■	■								
Developing							■	■	■	■				
Testing											■	■		
User Documentation												■	■	
Impelementation														■

6. Requirements

6.1 Functional Requirements

- **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

  - He 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 access to

  .-The user must be able to logout after they finished using system

- **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

- **Register New Book**

  Description of feature

  This feature allows to add 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.

- **Search Book**

  Description of Feature

  This feature is found in book maintenance part. We can search book based on book id, book name, and 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

- **Issue Books and Return Books**

  Description of Feature

  This feature allows to issue and return books and also view 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

6.2 Resource Requirements

Library Management System needs some hardware and software requirements.

6.2.1 Software Requirements

Operating system-

Windows 7 is used as the operating system as it is stable and supports more features and is more user friendly

Database MYSQL-

MYSQL is used as database as it easy to maintain and retrieve records by simple queries which are in English language which are easy to understand and easy to write

Development tools and Programming language-

HTML is used to write the whole code and develop webpages with css, java script for styling work and php forever side scripting.

6.2.2 Hardware Requirements

- Intel core i5 2nd generation is used as a processor because it is fast than other processors and provide reliable and stable and we can run our pc for long time. By using this processor we can keep on developing our project without any worries.

- Ram 1 gb is used as it will provide fast reading and writing capabilities and will in turn support in processing

6.3 strength

- ✓ System response fast enough when the users perform some action
- ✓ Interface is user friendly and easy to use
- ✓ Allow to keep track member expired date
- ✓ Allow user to instantly change their profile via internet
- ✓ Allow to comment the book which is good or bad
- ✓ Allow user reserve book online
- ✓ Member allow to see history of borrowed book
- ✓ Member allow to see current book borrowed
- ✓ Admin user allow to add, edit and delete news

6.4 Weakness

- ✓ User does not allow borrow book directly from the website
- ✓ Does not have rating on the book

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