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LAXMI INSTITUTE OF TECHNOLOGY



A Project Report on

Library Management System

Under the subject of

Application Developer Web & Mobile (On Job Training)-21160209

BACHELOR OF VOCATION

SOFTWARE DEVELOPMENT

6th Semester

Submitted By

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ABSTRACT

The Library Management System is an application for assisting a librarian in managing a book library in a university. The system would provide basic set of features to add/update members, add/update books, and manage check in specifications for the systems based on the client's statement of need. Library management system is a typical management Information system (MIS), its Development include the establishment and maintenance of back-end database and front-end application development aspects. For the former require the establishment of data consistency and integrity of the strong data security and good libraries. As for the latter requires the application fully functional, easy to use and so on.

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION TO SYSTEM NAME	1
1.1 INTRODUCTION	2
1.2 OBJECTIVES	3
1.3 PURPOSE	4
1.4 SYSTEM ANALYSIS	5
1.4.1 Study of Current System	6
1.4.2 Architecture /System Flow	7
1.4.3 Working /System Flow	8
1.4.4 Advantages	9
1.4.5 Problem and Weakness	10
1.5 SYSTEM REQUIREMENT SPECIFICATION	11
1.5.1 User Characteristics	12
1.5.2 Hardware Requirement	13
1.5.3 Software Requirement	13
CHAPTER 2 : SYSTEM DESIGN METHODOLOGY	14
2.1 SYSTEM DESIGN USING UML	15
2.1.1 E-R Diagram	16
2.1.2 Class Diagram	17
2.1.3 Use Case Diagram	18
2.2 DATABASE DESIGN	19
2.2.1 Data Dictionary	20
CHAPTER 3 : IMPLEMENTATION	21
3.1 TECHNOLOGY USED	22
3.2 SOURCE CODE	23
3.3 WEB PAGE SCREENSHOTS	24
CONCLUSION AND FUTURE SCOPE	23
REFERENCES	24

CHAPTER 1: INTRODUCTION TO LIBRARY MANAGEMENT SYSTEM

1.1 INTRODUCTION

The project titled Library Management System is Library Management software for monitoring and controlling the transactions in a library. The project “Library Management System” is developed in php, which mainly focuses on basic operations in a library like adding new books, and updating new information, searching books and members and return books.

This project of “LIBRARY MANAGEMENT” of gives us the complete information about the library. We can enter the record of new books and retrieve the details of books available in the library. We can issue the books to the students and maintain their records and can also check how many books are issued and stock available in the library. In this project we can maintain the late fine of students who returns the issued books after the due date.

Throughout the project the focus has been on presenting information and comments in an easy and intelligible manner. The project is very useful for those who want to know about Library Management System.

1.2 OBJECTIVES

The main objective of the Library Management System is to manage the details of Address, Member, Issues, Books, Student. It manages all the information about Address, Librarian, Student, and Address. The project is totally built at administrative end and thus only the administrator is guaranteed the access

1.3 PURPOSE

The main purpose of the library management system is to build an application program to reduce the manual work for managing the students, books, address, issues. It tracks all the details about the issues, librarian, and member.

1.4 SYSTEM ANALYSIS

Every organization, whether big or small, has challenges to overcome and managing the information of Books, Student, Librarian, Address, and Member. Every Library Management System has different Student needs, therefore we design exclusive employee management systems that are adapted to your managerial requirements.

1.4.1 Study of Current System

The "Library Management System" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the company to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly. Library Management System, as described above, can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization in better utilization of resources.

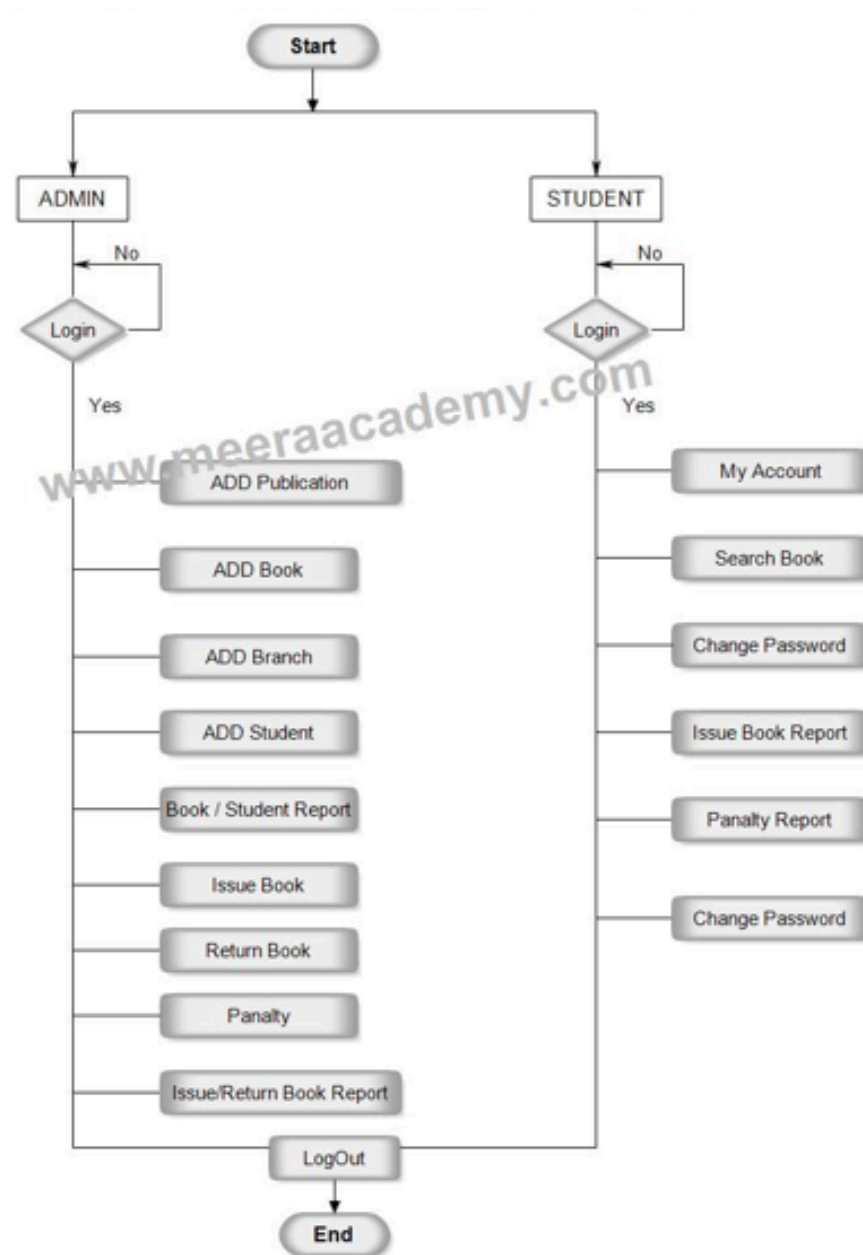
The aim is to automate its existing manual system by the help of computerized equipment and full-fledged computer software, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same.

Functionalities provided by Library Management System are as follows:

- Provides the searching facilities based on various factors. Such as Student, Issues, Librarian, Member
- Library Management System also manage the Address details online for Librarian details, Member details, Student.
- It tracks all the information of Books, Address, Librarian etc.
- Manage the information of Books
- Shows the information and description of the Student, Issues
- To increase efficiency of managing the Student, Books
- It deals with monitoring the information and transactions of Librarian.
- Manage the information of Student
- Editing, adding and updating of Records is improved which results in proper resource management of Student data.
- Manage the information of Librarian
- Integration of all records of Member.

1.4.2 Architecture /System Flow

Library Management System – Flowchart Diagram



1.4.3 Working

Library Management System is working based on different modules.

Modules of Library Management System:

In order to maintain library management software, you will have the following set of components. These

components are efficient to manage library operations accurately.

- **Admin login:** the administrators can access the entire functionality of the system via this component. The admin can maintain the records and track them as per necessity. Also, the admin can add or remove entries into the system respectively.
- **User login section:** the students who want to access library materials, need to do registration first. The registration allows for maintaining records accurately. After registering, they can check out and check in the library material.
- **Add and update books:** The admin can add new books or other materials to the system with the essential details. Thus, the librarian can maintain the system effectively.
- **Search option:** all users of the system, including admin can search for library materials. Admin and students can search for books by entering the name of the book.
- **View order status** – the admin can view rented books and their due date. Also, the other details like students details who has rented a book will be available in this module.
- **Check-in and checkout**– this is the distinct component of a library management system where a student can check in, and check out the library souvenirs electronically. This facility helps to save the time of both; students, and the librarian.
- **Fine calculator** – The students and admin can view the issued materials with their due date. And, if any book is overdue, the system will allow calculating fine for the same.

1.4.4 Advantages

The online cloud-based library management system provides easy ways for librarians to create and store their library collections. It enables students and staff to communicate and collaborate through multiple channels.

- **Simple & Easy to Use**

The Library Management Software is simple, user-friendly, and can be easily integrated with your existing system. The library management system benefits provide online and offline storage, automated backups, and easy upgrades to simplify and enhance the learning process.

- **Increased Library Engagement**

Avoid frustration and tediousness by providing students with 24/7 access to library resources from anywhere, anytime. Library Management Software allows the librarian to maintain all types of books, eBooks, journals, photos, videos, and create events.

1.4.5 Problem and Weakness

Administrative authorities of educational institutions must fully explore the drawbacks and disadvantages of library management systems before upgrading to new software from the old and existing ones, or while employing it for the first time.

Disadvantages of Library Management System:

- The data stored is prone to cyber hacks. Opting for a reliable online system eliminates the risk
- Costly and Expensive
- Complicated to operate
- Online Systems require high-speed internet connectivity
- Risk of computer virus
- The automation feature is not available in offline/ open-source systems thus, requires manual action to perform operations
- Unlike online systems that utilize cloud computing, Open-source systems store data on a computer hard drive. This increases the risk of data loss

1.5. SYSTEM REQUIREMENT SPECIFICATION

The project is specifically designed for the use of librarians and library users. The product will work as a complete user interface for library management process and library usage from ordinary users. The system provides different types of services based on the type of users [Member/Librarian]. The Librarian will be acting as the controller and he will have all the privileges of an administrator. The member can be either a student or staff of the university who will be accessing the Library online.

1.5.1 User Characteristics

1. Admin

- Register user
- Entry book details
- Book issue

2. User

- The user can verify the availability of book
- Book Return

1.5.2 Hardware Requirement

Table
1.5.2:
Basic

Standalone System Specification	Peripherals	On Cloud (Cloud Server Provider)
i5 /i7 Processor INTEL	Keyboard & Mouse	http:iweb.com
8 GB RAM	Printer	http:azure.microsoft.com
DVD Writer	Scanner	
500 GB Hard Disk	Barcode Printer	
	Barcode Scanner	

Requirement of Hardware

1.5.3 Software Requirement

Table 1.5.3: Basic Requirement of Software

Operating System	Windows 8, Windows 10
Front-End	HTML, CSS
Back-End	Php
Software	Net Beans 7.0.1 (Front End)
Database	My SQL Server (Back End)

CHAPTER 2: SYSTEM DESIGN METHODOLOGY

A Library Management System is software that provides the ability to find books, manage books, track borrowed books, managing fines and bills all in one place. It helps the librarian manage the books and books borrowed by members and automates most of the library activities. It increases efficiency and reduces the cost needed for maintaining a library and saves time and effort for both the user and the librarian.

2.1 SYSTEM DESIGN USING UML

Unified Modeling Language (UML) is a general-purpose modelling language. The main aim of UML is to define a standard way to visualize the way a system has been designed. It is quite similar to blueprints used in other fields of engineering is not a programming language, it is rather a visual language. We use UML diagrams to portray the behaviour and structure of a system.

2.1.1 E-R Diagram

ER Model is used to model the logical view of the system from data perspective. It shows relationships between entities and their attributes. An ER Model provides a means of communication.

ER diagram for library management system is a graphical representation of database tables and relations between library, member, book, admin etc. The main purpose of ER diagram for online library management system is to represent data object and their relationships. The main entity of this ER diagram is library, library admin, member, book.

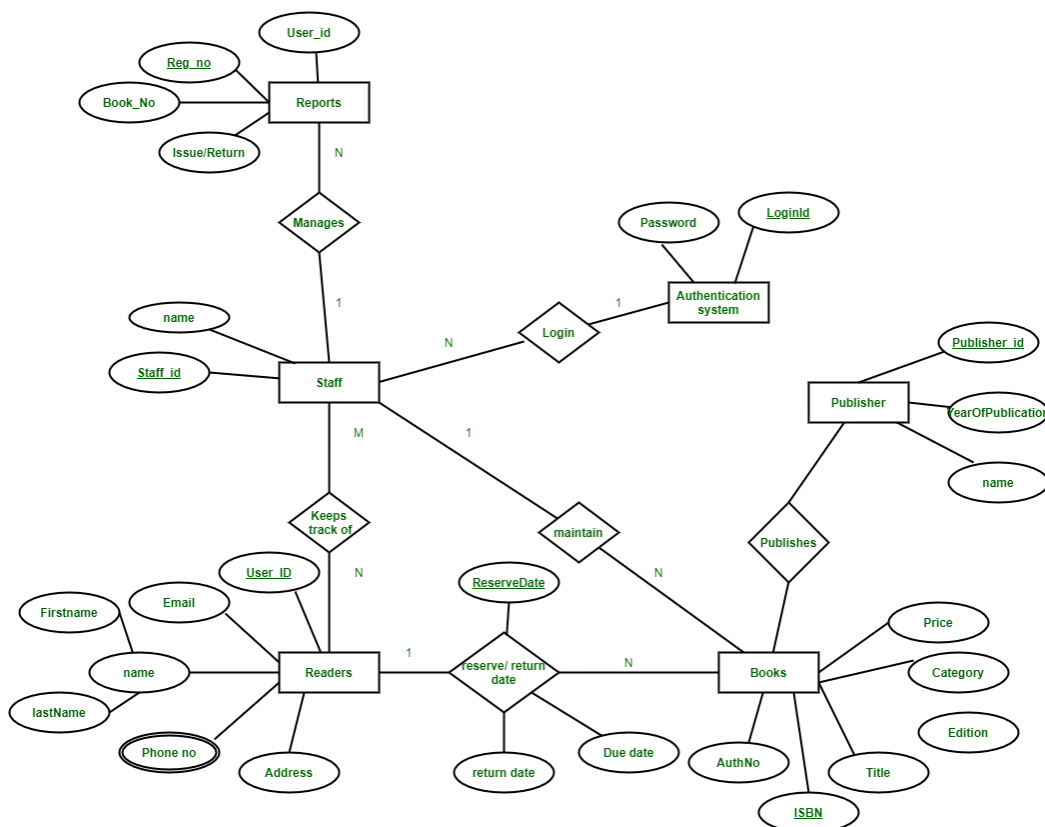


Fig: 2.1.1: ER diagram for library management system

2.1.2 Class Diagram

The class diagram depicts a static view of an application. It represents the types of objects residing in the system and the relationships between them. A class consists of its objects, and also it may inherit from other classes. A class diagram is used to visualize, describe, document various different aspects of the system, and also construct executable software code.

Class Diagram for Library Management System simply describes structure of Library Management System class, attributes, methods or operations, relationship among objects. It manages all operations of Library Management System. It is central part of organization for which software is being designed.

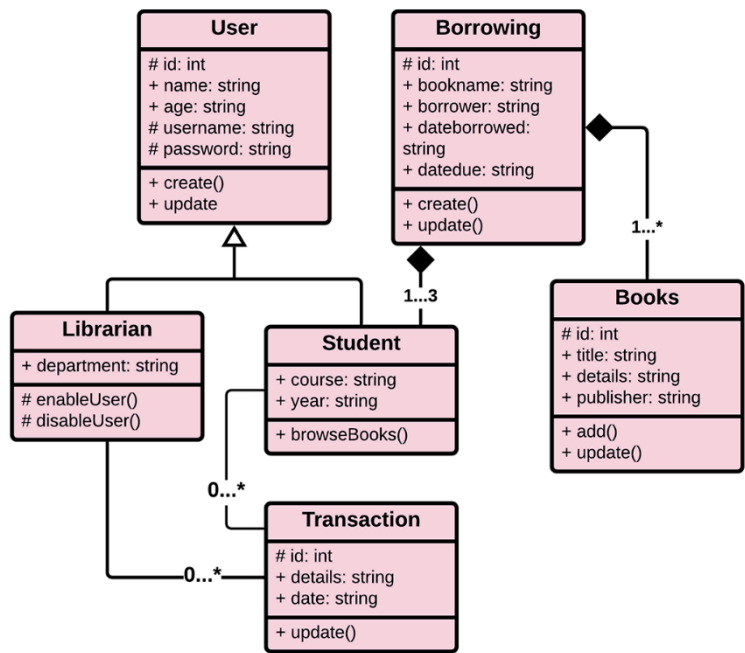


Fig 2.1.3: Class Diagram for library management system

2.1.4 Use Case Diagram

Use-case diagrams describe the high-level functions and scope of a system. These diagrams also identify the interactions between the system and its actors. The use cases and actors in use-case diagrams describe what the system does and how the actors use it, but not how the system operates internally

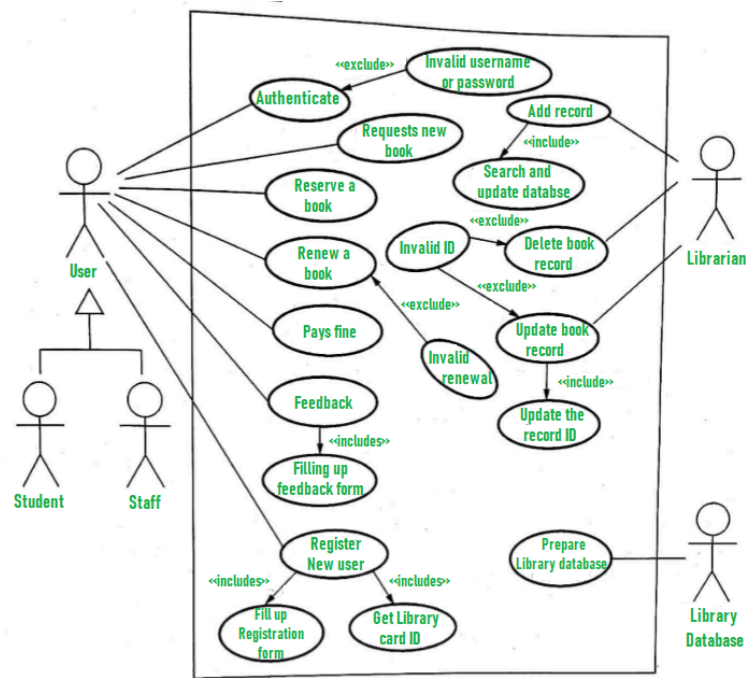


Fig 2.1.5: Use Case Diagram for Library Management System

2.2 DATABASE DESIGN

The database is a collection of information and is systematically stored in tables in the form of rows and columns. The table in the database has unique name that identifies its contents. The database in turn is further described in detail giving all the fields used with the data types, constraints available, primary key and foreign key^[1]

Database Name: bookdetails

Field Name	Data Type	Size	Relation
Accno	Varchar	50	Primary key
Author	Varchar	50	Not null
Title	Varchar	50	Not null
Publication	Varchar	50	Not null
Edition	Varchar	50	Not null
No_of_copies	int		Not null
Volumn	Varchar	50	Not null
Date_pur	Varchar	50	Not null
Price	Decimal	(18,2)	Not null
Status	Varchar(50)	50	Not null

CHAPTER 3: IMPLEMENTATION

3.1 TECHNOLOGY USED

HTML

Introduction of HTML

CSS

Introduction of CSS

3.2 SOURCE CODE

3.3 WEB PAGE SCREENSHOTS

CONCLUSION AND FUTURE SCOPE

This website provides a computerized version of library management system which will benefit the students as well as the staff of the library. It makes entire process online where student can search books, staff can generate reports and do book transactions. It also has a facility for student login where student can login and can see status of books issued as well request for book or give some suggestions. It has a facility of teacher's login where teachers can add lectures notes and also give necessary suggestion to library and also add info about workshops or events happening in our college or nearby college in the online notice board.

There is a future scope of this facility that many more features such as online lectures video tutorials can be added by teachers as well as online assignments submission facility, a feature Of group chat where students can discuss various issues of engineering can be added to this project thus making it more interactive more user friendly and project which fulfils each users need in the best way possible.

REFERENCES

Research Paper

[1].HonghaiKan,Zhimin Yang, Yue Wang, Nana Qi, “Research on Library Management System for CDs Attached to Books Based on Cloud Computing”, in Proceedings of the 14th International Conference on Computer Supported Cooperative Work in Design 2010.

Book

1. Williaum Stallings , “Network Security”, Page 10 – 20

Link

1. file:///C:/Users/Admin/Downloads/LibraryManagementSystem.pdf