#### **Project Report**

On

### ONLINE LIBRARY MANAGEMENT SYSTEM

Submitted By: Your Name

In partial fulfillment for the award of the degree of

**Your Degree** 

In

**Your College Name** 

#### **Your College Name**

#### **CERTIFICATE**

Certified that this is a bonafide record of the project work titled

#### ONLINE LIBRARY MANAGEMENT SYSTEM

Done by

Your Name

of semester You r degree in the year 2017 in partial fulfillment of the requirements for the award of Degree of Your Degree of Your College Name

XYZ Project Guide ABC
Head of the Division

#### **ACKNOWLEDGEMENT**

We take this occasion to thank God, almighty for blessing us with his grace and taking our endeavor to a successful culmination. We extend our sincere and heartfelt thanks to our esteemed guide, ABC, for providing us with the right guidance and advice at the crucial junctures and for showing me the right way. We also take this opportunity to express a deep sense of gratitude to our class coordinators, XYZ and XXX for their cordial support, valuable suggestions and guidance. We extend our sincere thanks to our respected Head of the division Name Here, for allowing us to use the facilities available. We would like to thank the other faculty members also, at this occasion. Last but not the least, we would like to thank our friends and family for the support and encouragement they have given us during the course of our work.

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#### **ABSTRACT**

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 and a facility of admin 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.

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.

# CHAPTER 1 INTRODUCTION

This chapter gives an overview about the aim, objectives, background and operation environment of the system.

#### 1.1 PROJECT AIMS AND OBJECTIVES

The project aims and objectives that will be achieved after completion of this project are discussed in this subchapter. The aims and objectives are as follows:

- Online book issue
- Request column for librarian for providing new books
- Student login page where student can find books issued by him/her and date of return.
- A search column to search availability of books

#### 1.2 BACKGROUND OF PROJECT

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.

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.

#### 1.5 OPERATION ENVIRONMENT

PROCESSOR	INTEL CORE PROCESSOR OR BETTER PERFORMANCE
OPERATING SYSTEM	WINDOWS VISTA ,WINDOWS7, UBUNTU
MEMORY	1GB RAM OR MORE
HARD DISK SPACE	MINIMUM 3 GB FOR DATABASE USAGE FOR FUTURE
DATABASE	MY SQL

#### **CHAPTER 2**

#### **SYSTEM ANALYSIS**

In this chapter, we will discuss and analyze about the developing process of Library Management System including software requirement specification (SRS) and comparison between existing and proposed system. The functional and non functional requirements are included in SRS part to provide complete description and overview of system requirement before the developing process is carried out. Besides that, existing vs proposed provides a view of how the proposed system will be more efficient than the existing one.

#### 2.1 SOFTWARE REQUIREMENT SPECIFICATION

#### 2.1.1 GENERAL DESCRIPTION

#### PRODUCT DESCRIPTION:

Library Management System is a computerized system which helps user(librarian) 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 timesaving.

#### PROBLEM STATEMENT:

The problem occurred before having computerized system includes:

- File lost
  - When computerized system is not implemented file is always lost because of human environment. Some times due to some human error there may be a loss of records.
- File damaged When a computerized system is not there file is always lost due to some accdent like spilling of water by some member on file accidentally. 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 become large the space for physical storage of file and records also increases if no computerized system is implemented.

Cost consuming

As there is no computerized system the to add each record paper will be needed which will increase the cost for the management of library.

#### 2.1.2 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.

• Option of online Notice board

Librarian will be able to provide a detailed description of workshops going in the college as well as in nearby colleges

Lecture Notes

Teacher have a facility to upload lectures notes in a pdf file having size not more than 10mb

#### 2.1.3 SYSTEM REQUIREMENTS

#### 2.1.3.1 NON FUNCTIONAL REQUIREMENTS

• Product Requirements

#### **EFFICIENCY REQUIREMENT**

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

#### **RELIABILITY REQUIREMENT**

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

#### **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.

#### ORGANIZATIONAL REQUIREMENT

#### **IMPLEMENTATION REQUIREMNTS**

In implementing whole system it uses html in front end with php as server side scripting language which will be used for database connectivity and the backend ie the database part is developed using mysql.

#### **DELIVERY REQUIREMENTS**

The whole system is expected to be delivered in six months of time with a weekly evaluation by the project guide.

#### 2.1.3.2 FUNCTIONAL REQUIREMENTS

#### 1. NORMAL USER

#### 1.1 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.

#### 1.2 <u>REGISTER NEW USER</u>

#### 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

#### **Admin Features**

- Admin Dashboard
- Admin can add/update/ delete category
- Admin can add/update/ delete author
- Admin can add/update/ delete books
- Admin can issue a new book to student and also update the details when student return book
- Admin can search student by using their student ID
- Admin can also view student details
- Admin can change own password

#### Students-

- Student can register yourself and after registration they will get studentid
- After login student can view own dashboard.
- Student can update own profile.
- Student can view issued book and book return date-time.
- Student can also view the available books in the library.
- Student can also change own password.
- Student can also recover own password.

#### 2.1.4 SOFTWARE AND HARDWARE REQUIREMENTS

This section describes the software and hardware requirements of the system

#### 2.1.4.1 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 for sever side scripting.

#### 2.1.4.2 HARDWARE REQUIREMENTS

- Intel core i5 2<sup>nd</sup> generation is used as a processor because it is fast than other processors an provide reliable and stable and we can run our pc for longtime. 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

#### 2.2 EXISTING VS PROPOSED SYSTEM

- Existing system does not have any facility of teachers login or student login where as 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 books
- iii. Existing system does not have any facility of online notice board where description of workshops happening in our college as well as nearby colleges is being provided.
- iv. Existing system does not has any option of lectures notes uploaded by teachers whereas proposed system will have this facility
- 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
- vi. 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

#### 2.3 SOFTWARE TOOLS USED

The whole Project is divided in two parts the front end and the back end.

#### 2.3.1 Front end

The front end is designed using of html, Php, css, Java script

HTML- HTML or Hyper Text Markup Language is the main markup language for creating web pages and other information that can be displayed in a web browser.HTML is written in the form of HTML elements consisting of *tags* enclosed in angle brackets (like <html>), within the web page content. HTML tags most commonly come in pairs like <h1> and </h1>, although some tags represent *empty elements* and so are unpaired, for example <img>. The first tag in a pair is the *start tag*, and the second tag is the *end tag* (they are also called *opening tags* and *closing tags*). In between these tags web designers can add text, further tags, comments and other types of text-based content. The purpose of a web browser is to read HTML documents and compose them into visible or audible web pages. The browser does not display the HTML tags, but uses the tags to interpret the content of the page.HTML elements form the building blocks of all websites. HTML allows images and objects to be embedded and can be used to create interactive forms. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. It can embed scripts written in languages such as JavaScript which affect the behavior of HTML web pages.

CSS- Cascading Style Sheets (CSS) is a style sheet language used for describing the look and formatting of a document written in a markup language. While most often used to style web pages and interfaces written in HTML and XHTML, the language can be applied to any kind of XML document, including plain XML, SVG and XUL. CSS is a cornerstone specification of the web and almost all web pages use CSS style sheets to describe their presentation. CSS is designed primarily to enable the separation of document content from document presentation, including elements such as the layout, colors, and fonts. This separation can improve content accessibility, provide more flexibility and control in the specification

of presentation characteristics, enable multiple pages to share formatting, and reduce complexity and repetition in the structural content (such as by allowing for table less web design). CSS can also allow the same markup page to be presented in different styles for different rendering methods, such as on-screen, in print, by voice (when read out by a speech-based browser or screen reader) and on Braille-based, tactile devices. It can also be used to allow the web page to display differently depending on the screen size or device on which it is being viewed. While the author of a document typically links that document to a CSS file, readers can use a different style sheet, perhaps one on their own computer, to override the one the author has specified. However if the author or the reader did not link the document to a specific style sheet the default style of the browser will be applied. CSS specifies a priority scheme to determine which style rules apply if more than one rule matches against a particular element. In this so-called *cascade*, priorities or *weights* are calculated and assigned to rules, so that the results are predictable.

JAVA SCRIPT- **JavaScript** (**JS**) is a dynamic computer programming language. It is most commonly used as part of web browsers, whose implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It is also being used in server-side programming, game development and the creation of desktop and mobile applications. JavaScript is a prototype-based scripting language with dynamic typing and has first-class functions. Its syntax was influenced by C. JavaScript copies many names and naming conventions from Java, but the two languages are otherwise unrelated and have very different semantics. The key design principles within JavaScript are taken from the Self and Scheme programming languages. It is a multi-paradigm language, supporting object-oriented, imperative, and functional programming styles. The application of JavaScript to use outside of web pages—for example, in PDF documents, site-specific browsers, and desktop widgets—is also significant. Newer and faster JavaScript VMs and platforms built upon them (notably Node.js) have also increased the popularity of JavaScript for server-side web applications. On the client side, JavaScript was traditionally implemented as

an interpreted language but just-in-time compilation is now performed by recent (post-2012) browsers.

PHP- **PHP** is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP is now installed on more than 244 million websites and 2.1 million web servers. Originally created by Rasmus Lerdorf in 1995, the reference implementation of PHP is now produced by The PHP Group. While PHP originally stood for *Personal Home Page*, it now stands for *PHP: Hypertext Preprocessor*, a recursive backronym code is interpreted by a web server with a PHP processor module, which generates the resulting web page: PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data. It has also evolved to include a command-line interface capability and can be usedin standalone graphical applications. PHP is free software released under the PHP License. PHP can be deployed on most web servers and also as a standalone shell on almost every operating system and platform, free of charge.

2.3.2 BACK END- The back end is designed using MySQL which is used to design the databases.

MYSQL- MySQL ("My S-Q-L", officially, but also called "My Sequel") is (as of July 2013) the world's second most widely used open-source relational database management system (RDBMS). It is named after co-founder Michael Widenius daughter, My. The SQL phrase stands for Structured Query Language. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation. MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open-source web application software stack (and other 'AMP' stacks). LAMP is an acronym for "Linux, Apache, MySQL, Perl/PHP/Python." Free-software-open-source projects that require a full-featured database management system often use MySQL. For commercial use, several paid editions are available, and offer additional functionality. Applications which use MySQL databases. include: TYPO3, MODx, Joomla, WordPress, phpBB, MyBB, Drupal and other software. MySQL is also used in many high-profile, large-scale websites, including Wikipedia, Google (though not for searches), Facebook, Twitter, Flickr, and YouTube.

# CHAPTER 3 SYSTEM DESIGN

#### 3.1 TABLE DESIGN

#### VARIOUS TABELS TO MAINTAIN INFORMATION

#### Admin table

#### admin

Column	Туре	Null	Default	Links to
id (Primary)	int(11)	No		
FullName	varchar(100)	Yes	NULL	
AdminEmail	varchar(120)	Yes	NULL	
UserName	varchar(100)	No		
Password	varchar(100)	No		
updationDate	timestamp	No	0000-00-00 00:00:00	

#### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	1	A	No	

#### Table tblauthors track the details of authors

#### tblauthors

Column	Type	Null	Default	Links to	
id (Primary)	int(11)	No			
AuthorName	varchar(159)	Yes	NULL		
creationDate	timestamp	Yes	CURRENT_TIMESTAMP		
UpdationDate	timestamp	Yes	NULL		

#### **Indexes**

Keyname	Туре	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	6	A	No	

#### tblbooks

Column	Туре	Null	Default	
id (Primary)	int(11)	No		
BookName	varchar(255)	Yes	NULL	
CatId	int(11)	Yes	NULL	
AuthorId	int(11)	Yes	NULL	
ISBNNumber	int(11)	Yes	NULL	
BookPrice	int(11)	Yes	NULL	
RegDate	timestamp	Yes	CURRENT_TIMESTAMP	
UpdationDate	timestamp	Yes	NULL	

#### Indexes

Keyname	Туре	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	2	A	No	

#	Name	Туре	Collation	Attributes	Null	Default	Comments	Extra
1	id 🔑	int(11)			No	None		AUTO_INCREMENT
2	BookName	varchar(255)	latin1_swedish_ci		Yes	NULL		
3	Catld	int(11)			Yes	NULL		
4	Authorld	int(11)			Yes	NULL		
5	ISBNNumber	varchar(25)	latin1_swedish_ci		Yes	NULL		
6	BookPrice	decimal(10,2)			Yes	NULL		
7	booklmage	varchar(250)	latin1_swedish_ci		No	None		
8	isIssued	int(1)			Yes	NULL		
9	RegDate	timestamp			Yes	current_timestamp()		
10	UpdationDate	timestamp			Yes	NULL		ON UPDATE CURRENT_TIMESTAMP()
	ndexes 🕢							



#### tblstudents

Column	Туре	Null		Defa
id (Primary)	int(11)	No		
StudentId	varchar(100)	Yes	NULL	
FullName	varchar(120)	Yes	NULL	
EmailId	varchar(120)	Yes	NULL	
MobileNumber	char(11)	Yes	NULL	
Password	varchar(120)	Yes	NULL	
Status	int(1)	Yes	NULL	
RegDate	timestamp	Yes	CURRENT_TIMESTAM	þ
UpdationDate	timestamp	Yes	NULL	

#### Indexes

Keyname	Type	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	7	A	No	
StudentId	BTREE	Yes	No	StudentId	7	A	Yes	

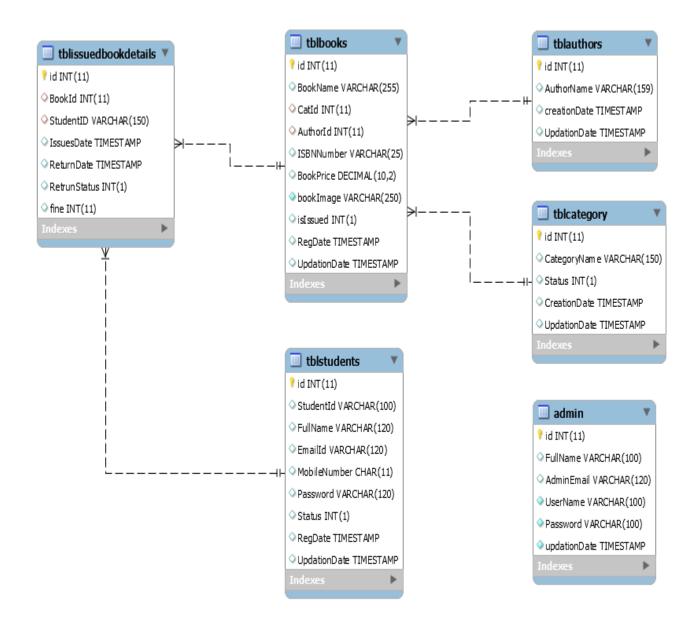
#### tblissued book details

Column	Type	Null	Default	Links to
id (Primary)	int(11)	No		
BookId	int(11)	Yes	NULL	tblbooks -> id
StudentID	varchar(150)	Yes	NULL	tblstudents -> StudentId
IssuesDate	timestamp	Yes	CURRENT_TIMESTAMP	
ReturnDate	timestamp	Yes	NULL	
RetrunStatus	int(1)	No		
fine	int(11)	Yes	NULL	

#### Indexes

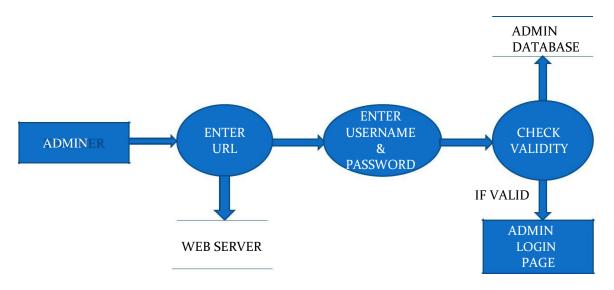
Keyname	Туре	Unique	Packed	Column	Cardinality	Collation	Null	Comment
PRIMARY	BTREE	Yes	No	id	8	A	No	

#### **Relationship between tables (Class Diagram)**



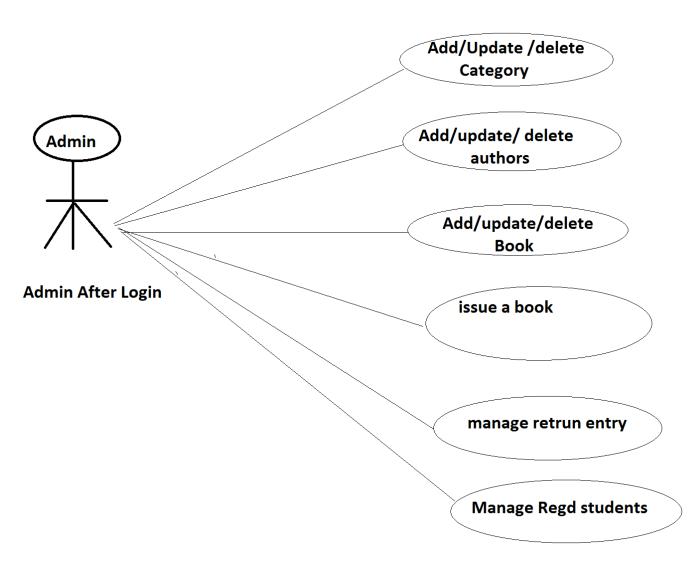
#### 3.2 DATA FLOW DIAGRAMS

#### DATA FLOW DIAGRAM FOR ADMIN LOGIN

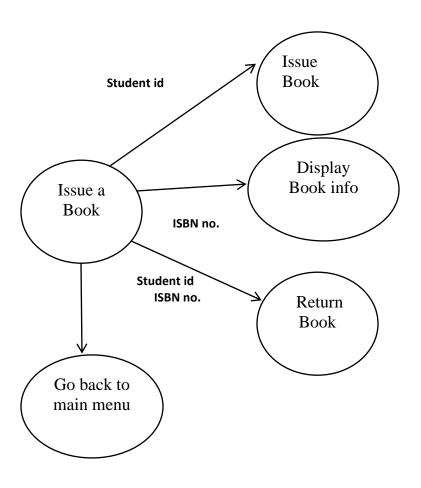


After entering to the home page of the website , Admin can choose the ADMIN LOGIN option where they are asked to enter username & password , and if he/she is a valid user then a teacher login page will be displayed.

#### **Admin Dataflow diagram**

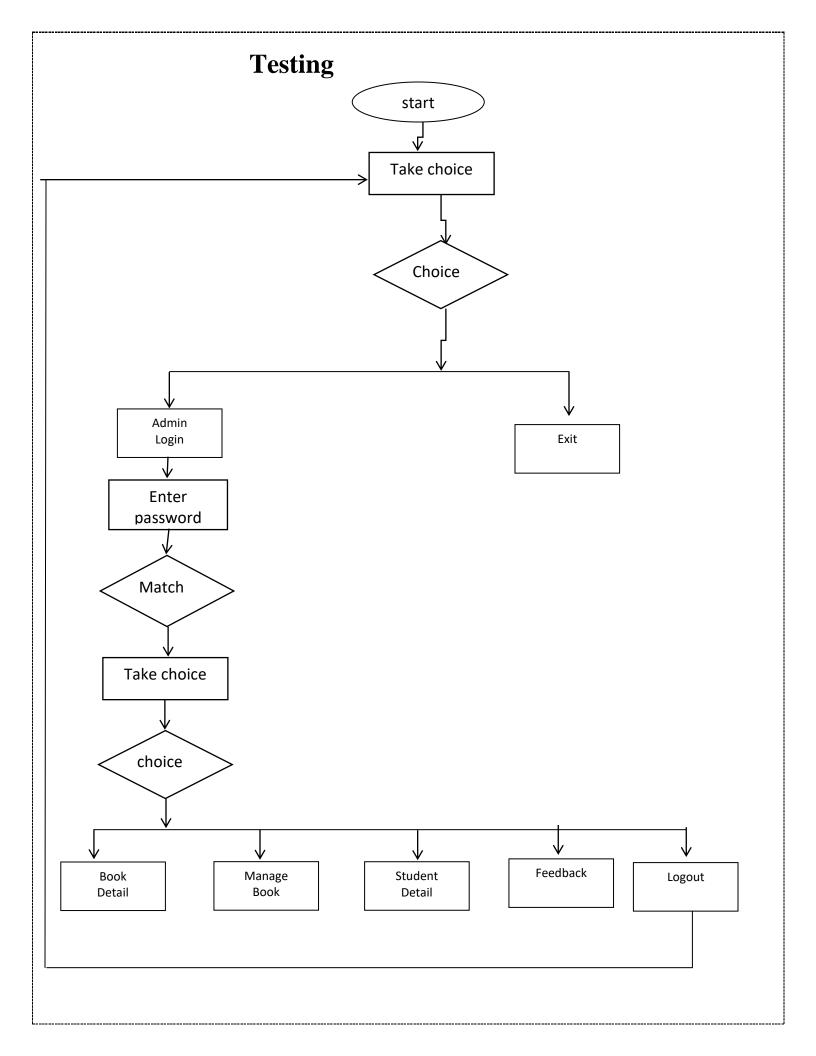


#### DATA FLOW DIAGRAM FOR Issuing Book



# **Students After login** Check issued and returned books details Students Manage Own profile change own password **Students After login User Dashboard**

#### **Entity Relationship Diagram** Has (Signup LMS id Studentld updationDate id FullName Password FullName User Emailld Add Admin Author id MobileNumber AdminEmail Password UserName AuthorName Category Add creationDate Status UpdationDate Borrow Issue books id RegDate UpdationDate CreationDate CategoryName UpdationDate Status (Belongs) Books UpdationDate id RegDate BookName islssued Catld booklmage Authorld BookPrice ISBNNumber



#### **CHAPTER 4**

#### **SYSTEM IMPLEMENTATION**

#### **Home Page**

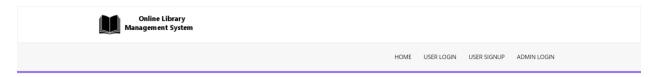


HOME USER LOGIN USER SIGNUP ADMIN LOGIN



USER LOGIN FORM

#### **User Signup**



USER SIGNUP

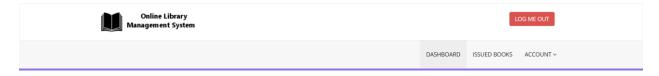


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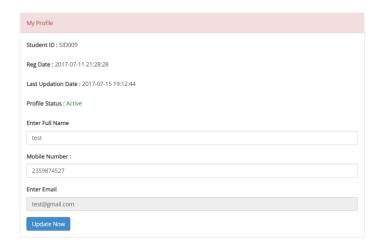
#### **User Dashboard**



#### **User Profile**

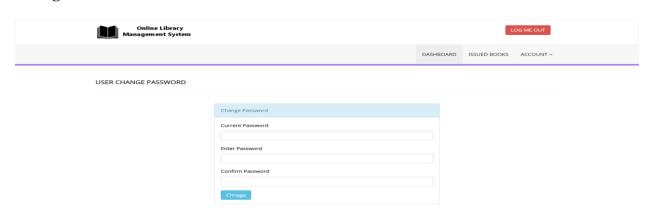


#### MY PROFILE

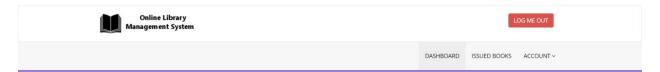


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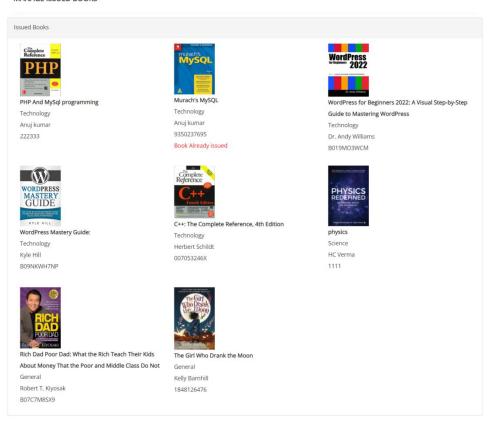
#### **Change Password**



#### **Listed Books**



#### MANAGE ISSUED BOOKS



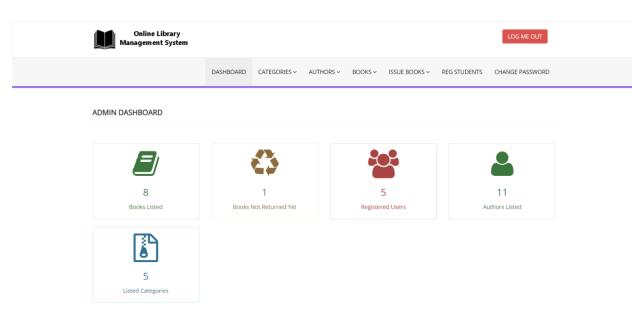
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#### **Issued Books**

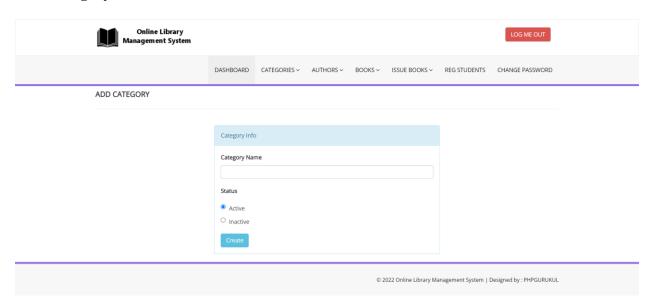


# Admin Login Online Library Management System HOME USER LOGIN USER SIGNUP ADMIN LOGIN ADMIN LOGIN FORM LOGIN FORM Enter Username Password LOGIN

#### **Admin Dashboard**



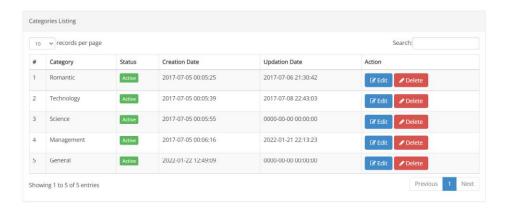
#### **Add Category**



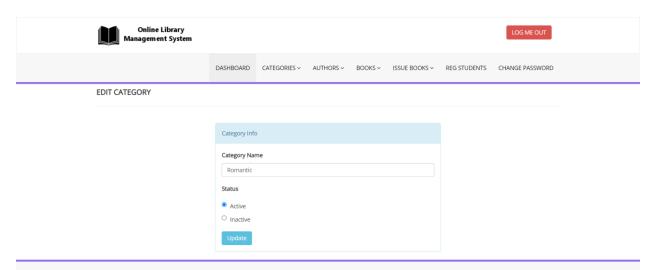
#### **Manage Category**



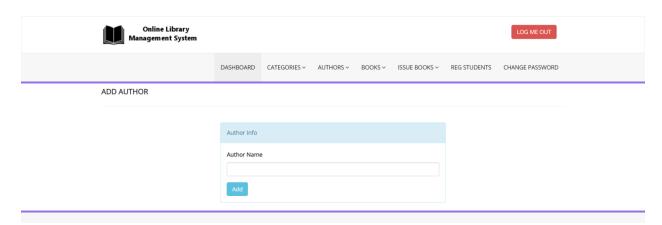
#### MANAGE CATEGORIES



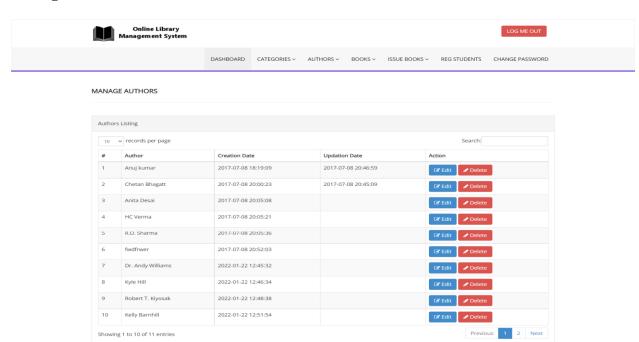
#### **Update Category**



#### **Add Author**



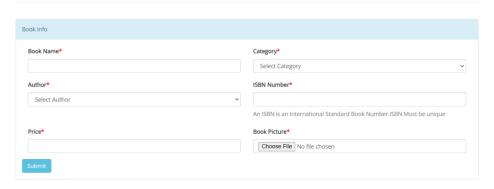
#### **Manage Author**



#### **Add Books**



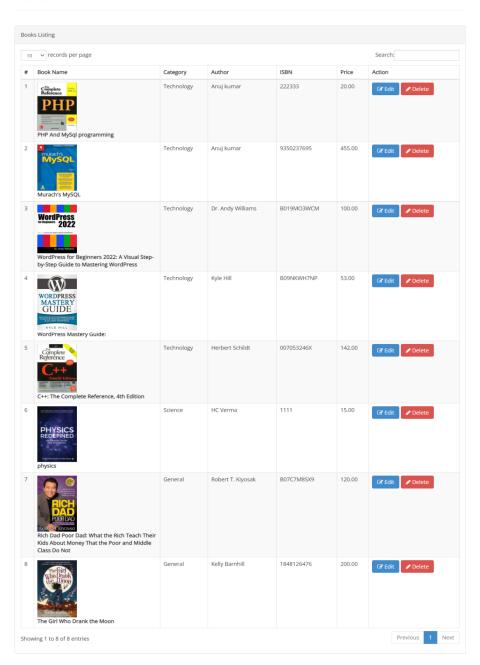
#### ADD BOOK



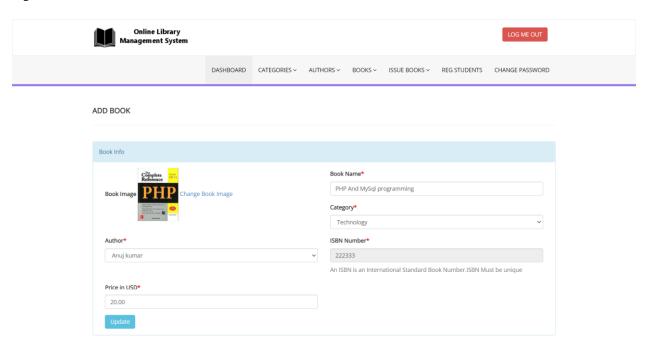
#### **Manage Books**



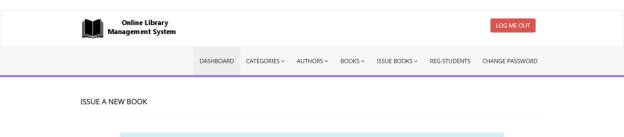
#### MANAGE BOOKS

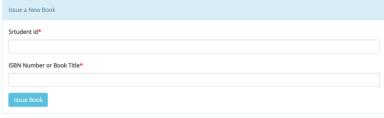


#### **Update Books**



#### **Issue New Books**

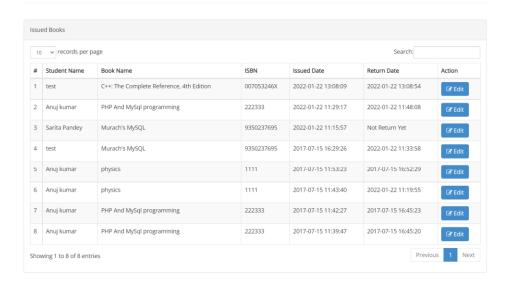




#### **Manage Issue Books**



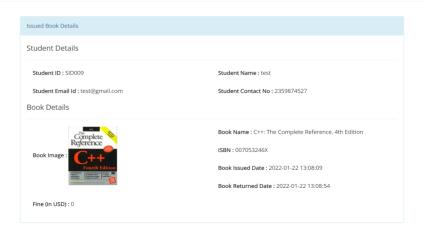
#### MANAGE ISSUED BOOKS



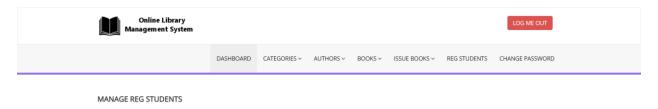
#### **Update Issue Books**

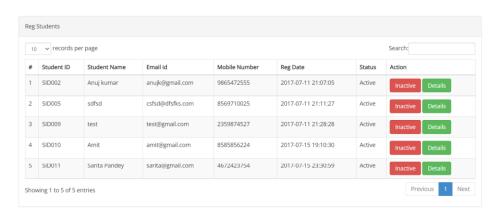


#### ISSUED BOOK DETAILS



#### **Register Students**





#### **Admin change Password**



#### USER CHANGE PASSWORD



# CHAPTER 5 SYSTEM TESTING

The aim of the system testing process was to determine all defects in our project. The program was subjected to a set of test inputs and various observations were made and based on these observations it will be decided whether the program behaves as expected or not. Our Project went through two levels of testing

- 1.Unit testing
- 2.integration testing

#### **UNIT TESTING**

Unit testing is undertaken when a module has been created and successfully reviewed .In order to test a single module we need to provide a complete environment ie besides the module we would require

- The procedures belonging to other modules that the module under test calls
- Non local data structures that module accesses
- A procedure to call the functions of the module under test with appropriate parameters

#### Test For the admin module

- ♣ Testing admin login form-This form is used for log in of administrator of the system. In this we enter the username and password if both are correct administration page will open other wise if any of data is wrong it will get redirected back to the login page and again ask for username and password
- ♣ Student account addition- In this section the admin can verify student details from student academine info and then only add student details to main library database it contains add and delete buttons if user click add button data will be added to student database and if he clicks delete button the student data will be deleted
- ♣ Book Addition- Admin can enter details of book and can add the details to the main book table also he can view the books requests .

#### **Test for Student login module**

- ✓ Test for Student login Form-This form is used for log in of Student .In this we enter thelibraryid, username and password if all these are correct student login page will open other wise if any of data is wrong it will get redirected back to the login page and again ask for libraryid, username and password.
- ✓ Test for account creation- This form is used for new account creation when student does not fill the form completely it asks again to fill the whole form when he fill the form fully it gets redirected to page which show waiting for conformation message as his data will be only added by administrator after verification.

In distant		4
	sting, we test various integration of the project module by providing the in	
	ective is to test the module interfaces in order to ensure that no errors are	
occurring when o	one module invokes the other module.	

# CHAPTER 6 CONCLUSION & 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 fulfills each users need in the best way possible

# CHAPTER 7 REFERENCES

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