



Islamic University of Technology (I.U.T)

The Organisation of Islamic Cooperation (O.I.C)

Project Title: Web_Based ONLINE LIBRARY MANAGEMENT SYSTEM

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CERTIFICATION

This is to clarify that this report ebodies the original work done (ONLINE LIBRARAY MANAGEMENT SYSTEM) by Mubarak Kabir kankara, Muhammad Djae and Nuha Nyassy respectively. We have successifully completed our Final year project in computer Science and engineering Department of Islamic university of Technology Dhaka, Bangladesh. Project submitted by Us is here by approved in partial fulfulment.

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ACKNOWLEDGEMET

We take this occasion to thank God, Almighty ALLAH (S.W.A) 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, (Project supervisor) in person of **Nusrat zerin** for providing us with the right guidance and advice at the crucial junctures and for showing us the right way.

We also take this opportunity to express a deep sense of gratitude to our faculty members for their cordial support, valuable suggestions and guidance.

We extend our sincere thanks to our respected HOD in person of **Prof.Dr Mahbub Alam** for allowing us to use the facilities available.

The satisfaction that accompanies the successful completion of any task would have been incomplete without the mention of people whose ceaseless cooperation made it possible, whose constant guidance and encouragement made it possible.

we have to thank our **parent** for their endless love, support, prayers and guidance throughout our life. a big Thank you both for giving us the strength to reach the stars and chase our dreams

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 teachers 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 possible way and also reduce the human efforts.

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6.1 Conclusion & future scope

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7.1 REFERENCES

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 include the following:

- 1- Online book issue after loging to the system
- 2 -User login page where student can find books issued by him/her and date of return.
- 3- A search column to search availability of books.
- 4- Admin can send message of any events being organized in the college and important suggestions regarding books.
- 5- Student and Teachers can change password,recover own password as well as update his/her profile.

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.

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

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:

Online 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 accedent 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: 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 add,delete,update, and edit user

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

2.1.3 SYSTEM REQUIREMENTS

Product Requirements

EFFICIENCY REQUIREMENT

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

RELIABILITY REQUIREMENT

The system should accurately performs 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.

IMPLEMENTATION REQUIREMNTS

In implementing whole system it uses html,css,boostrap,java script 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 five months of time with a weekly evaluation by the project supervisors.

2.1.3.2 FUNCTIONAL REQUIREMENTS:

1.1 USER LOGIN

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

Functional requirements

- -user name is provided when they register.
- -The system must only allow user with valid user name and password to enter the system.
- -The user may be able to logout after they finished using system.
- -User may be able to change his/her password.
- -User may be able to recover his/her own password.

1.2 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 ISBN number.

1.3 SEARCH BOOK

DESCRIPTION OF FEATURE

This feature is found in book maintenance part . we can search book based on book ISBN number , book name, book category 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 enterd
- System must be able to show the searched book

1.4 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

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 10 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 2nd 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 4 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

- i. 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 any facility of online notification where as the proposed system have.
- 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 have any facility for book request where as in proposed system after logging in to their accounts student can request books.
- v.Existing system does not have any facility for for book add,delete.update,edit where as the proposed system have.
- vi.Maintaining user records may not be reliable with The existing system where as it will in the proposed system.

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 . 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

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 firstclass 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 multiparadigm 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.PHP 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 used in 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 database

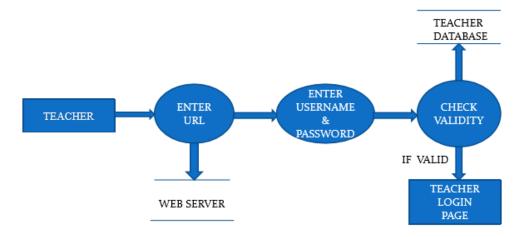
MYSQL- MySQL ("My S-Q-L", officially, but also called "My Sequel") is (as of July 2013) the world's second most widely used open-source relational database management system (RDBMS). It is named after co-founder Michael Widenius daughter, My. The SQL phrase stands for Structured Query Language. The MySQL 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 forprofit 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

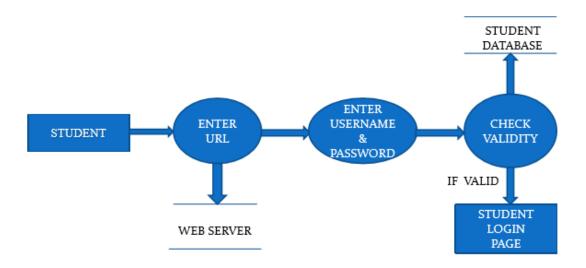
3.1 DATA FLOW DIAGRAMS

DATA FLOW DIAGRAM FOR TEACHER LOGIN



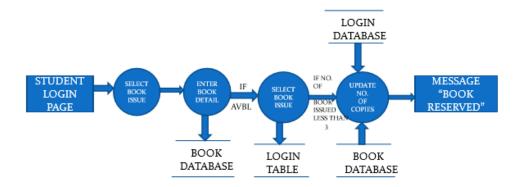
After entering to the home page of the website , teacher can choose the TEACHER LOGIN option where they are asked to enter username & password , and if he/she is a valid user then a teacher login page will be displayed.

DATA FLOW DIAGRAM FOR STUDENT LOGIN



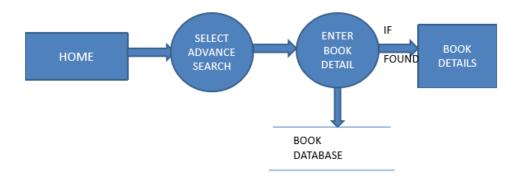
After entering to the home page of the website , student can choose the STUDENT LOGIN option where they are asked to enter username & password , and if he/she is a valid user then a student login page will be displayed.

DATA FLOW DIAGRAM FOR BOOK ISSUE



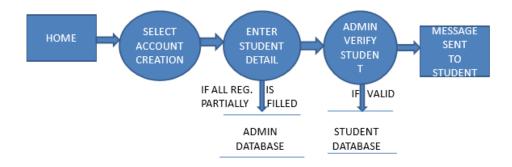
It is a 2nd level Data Flow Diagram where after entering STUDENT LOGIN page he/she can select a book issue option where after entering the book detail, he/she can select the book issue option and if the maximum no of books issued limit is not crossed then a request will be sent to the librarian who will approve the book issue.

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.

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.

CHAPTER 4

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

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

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

Unit testing was done on each and every module that is described under module description of chapter 5

1. 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 academinc 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 .

2. Test for Student login module

Test for Student login Form

This form is used for log in of Student .In this we enter the 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 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

3. Test for teacher login module-

Test for teacher login form

This form is used for logg in of teacher .In this we enter the username and password if all these are correct teacher 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 username and password.

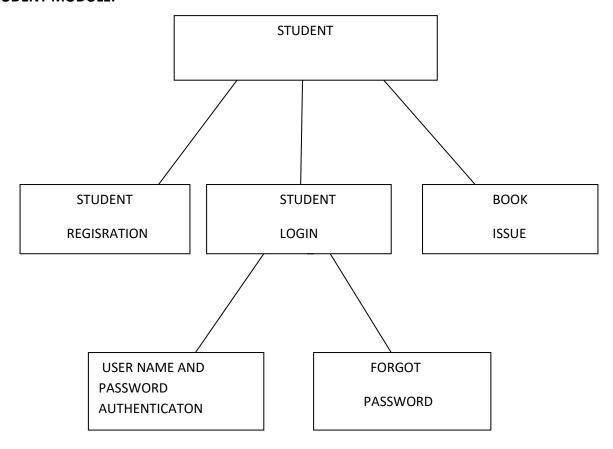
INTEGRATION TESTING

In this type of testing we test various integration of the project module by providing the input The primary objective is to test the module interfaces in order to ensure that no errors are occurring when one module invokes the other module.

CHAPTER 5

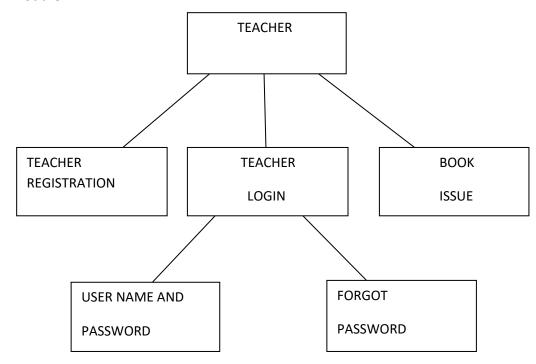
5.1 SYSTEM IMPLEMENTATION

STUDENT MODULE:



The following module contains various facilities like student registration, student login, online book Issue. Any student if at any moment forgets his password he can retrieve it from forgot password option.

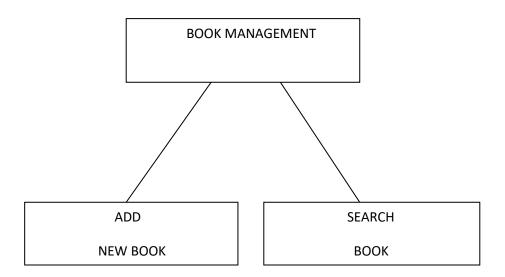
Teacher Module



The following module contains various facilities like teacher login, suggestions. Further any teacher if at any moment forgets his/her password he/she can retrieve it from 'forgot password' option

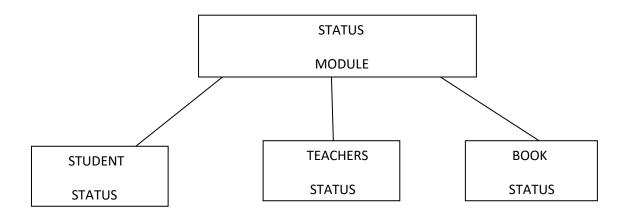
Book Module

The following module contains various facilities like add new book and search book. In the 'add new book' section if any new book comes in the library then the librarian can add its specifications. Similarly if the user wants to search for a specific book then he/she can use search book option to do it.



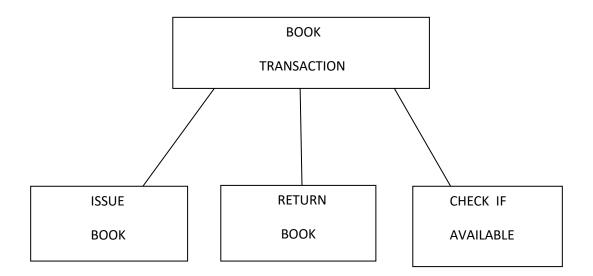
Status Module

The following module contains various facilities like student status, teacher status, and book status.



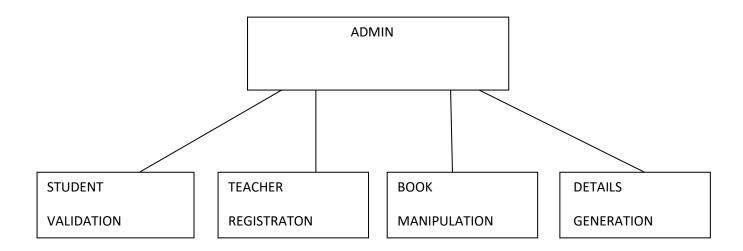
Book Transaction Module

The following module contains various facilities like issue book, return book and check If available.



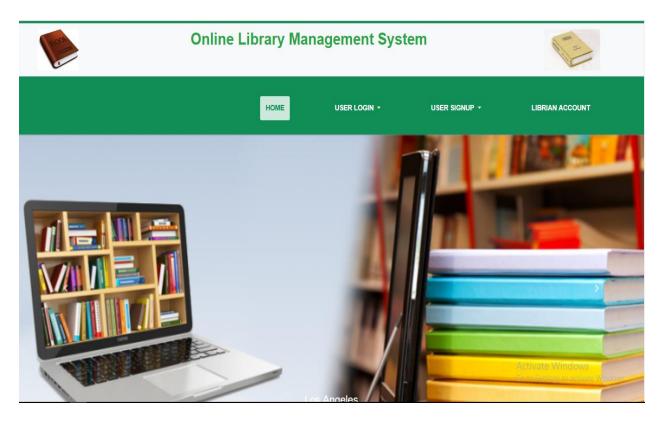
Admin Module

The following module contains various facilities like student validation, teacher registration, book manipulation and report generation



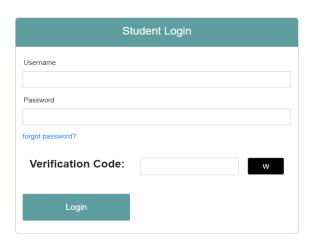
5.2 INTERFACE OF THE NEW SYSTEM

Home Page



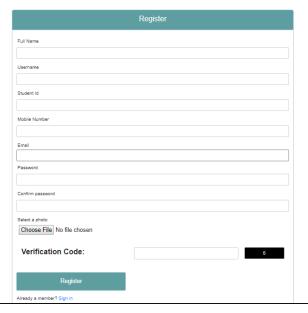
This is the home page where you can register or login as Admin, Teacher or Student.

STUDENT LOGIN FORM



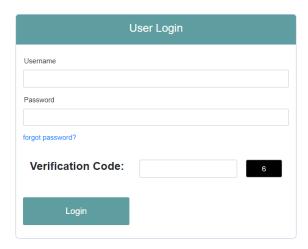
Activate Windows
Go to Settings to activate Windows.

STUDENT SIGNUP

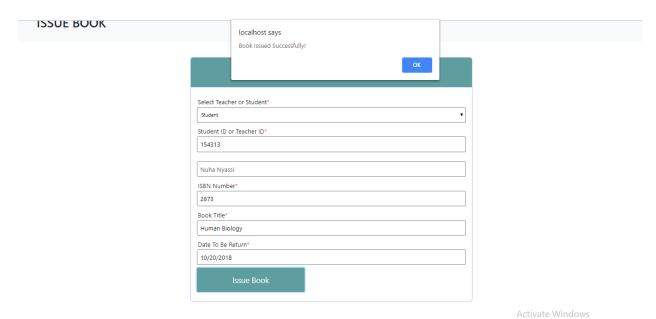


Activate Windows
Go to Settings to activate Windows.

TEACHER LOGIN FORM

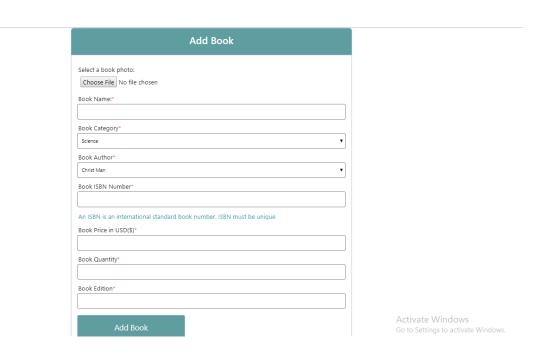


Activate Windows
Go to Settings to activate Windows.



Go to Settings to activate Windows.

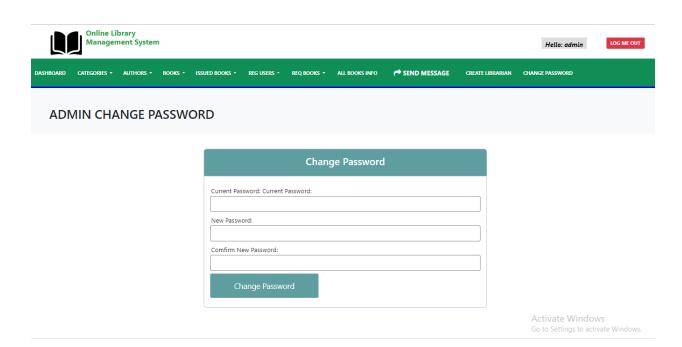
Here is Admin Issuing Book To User



Admin A dding New Book



Page where All Books Available in The Library Can Be Viewed.



Teacher and Student Can Change Password But Figure Above is Showing Adming Changing Password Both Admin,

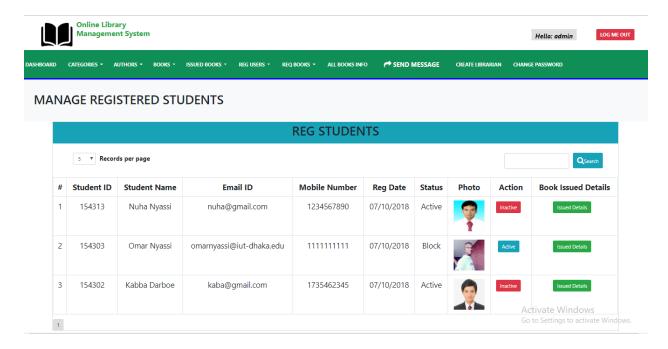


Figure Above is Showing how Admin Can View The Details Of Each And Every User Using The System

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, admin can generate reports and do send notifications. It also has a facility for student login where student can login and can see status of books issued as well request for book. It has a facility of teacher's login where teachers can see status of books issued as well request for book.

FUTURE SCOPE

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

7.1

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