



Islamic University of Technology (IUT)
Organization of Islamic Cooperation (OIC)

IUT LIBRARY MANAGEMENT SYSTEM

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DECLARATION OF AUTHORSHIP

This is to certify that the work presented in this project paper is the outcome of the investigation carried out by the candidates under supervision of **Md Sirajus Salekin**, Lecturer, Department of Computer Science and Engineering (CSE), Islamic University of Technology (IUT), Gazipur. It is also declared that neither of the project nor any part thereof has been published anywhere else for the award of any degree or diploma or any publication.

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DEDICATION

Our work is dedicated to all the teachers we have come across through our life so far. We are grateful to them for their unfailing moral support, encouragement and will remain ever indebted for the care they have shown. May Allah grant all their good wishes.

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ABSTRACT

In the early days the management of such systems was not easy and dynamic due to the lack of today's technology; therefore the implementation of this website has come with some enhancement to improve the earlier disadvantages.

The main objective or better still the aim of this website is to make it easier for the users to access useful services such as borrowing, returning books, registration of users and admins and ensuring accuracy along with dynamicity. All these thanks to the very powerful and innovative evolution of sophisticated information technologies as exemplified by the rapid and dynamic growth of the internet. Our website provides all the common facilities that a typical library administration does. Besides, another prominent feature of our website is an attractive template along with device dependent dynamicity.

Transaction of books are approved by the administrator after proper verification is done. The administrator has the privilege to conduct all the valid transactions. All in all, our project is a modern online administration website that incorporates most of the recent technologies in the field of web development.

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Chapter 1

INTRODUCTION

1.1 Background

The purpose of this document is to collect, analyze and define the high-level needs and features of the *Library Management System*. It focuses on the capabilities and facilities needed by IUT library and target users are the librarian, employees of the library, users of the library (Students, Professors, etc.).

The idea of *IUT Library Management System* was born out of the need to help the students by offering a convenient transaction and to lessen the workload of the fellow librarians. Along with ensuring convenient transaction, we focused on accuracy.

There are two parts in the said website; that's User and Administrative parts respectively. The focus was given mainly on the implementation of the Admin section. User part is where the visitor can access by signing up and view the required information.

In Admin section the admin after getting logged in can perform the required operations which include borrowing, returning of the books and the admin have total access over the system.

Also students of nowadays suffer from different problems to access the stated programs, ranges from lack of awareness, and the difficulties in transaction. Nowadays due to the development in information technologies there is need to apply these technologies to tackle the stated problems. The ultimate goal is to design a system that can help the users by offering a convenient and accurate transaction and can lessen the workload of the librarians.

1.2 Project overview

I think system of library management today realizes the importance of having an online presence whether that be through a website, or a Facebook page, or a twitter profile etc. If your library does not have an online presence, the chances are you could be losing user interest

The relationship between library and management has been established, such that internet is now internationally accepted as a key management index. It is in recognition of this importance that the users within IUT

1.3 Problem description

IUT Library Management System is a website that provides various facilities which enable

users to access website easily. Also users of nowadays suffer from different problems to access the stated programs, ranges from lack awareness, and the difficulties in borrowing and returning the books. Nowadays due to the development in information technologies, it is necessary to implement these technologies to tackle the stated problems. The ultimate goal is to design a system that can help users within IUT to enjoy the services online.

As we have searched lots of websites of different libraries and studied the existing system, we found that there was no much interaction between users and management and there was

no much information about the services and information of the respective library activities.

1.4 Necessity of the project

This age is the age of internet and we are now is in full mobile. However many institutions owners have yet to adopt the methodologies of this internet era. In fact, quite a few institutions owners do not have even have a library website for their schools.

1.5 Why do we need a website?

In today's world, users are more and more likely to expect a library to have their own website. In the eyes' of a user, having a website is a measure of viability, a measure of stability.

In addition to that, owning a website ensures accuracy along with lessening the workload of the employees.

Another excellent reason to have a website for an institutional library is that it provides with numerous options for savings costs in an efficient fashion.

Simply having a website offers the users a spot in search with the targeted keywords, no matter how small it is, it will definitely lessen time consumption.

Moreover, having a website provides the users a means by which they can measure their necessity along with the accuracy of the system.

Beyond the importance of simply having a website though, it is important to have an effective website, one that is an asset to the respective authority and that plays a vital role itself.

1.6 System complexity

The difficulties are connected with the multiple transaction complexities. The administrators are the users that have the overall power to view and control all the transactions.

The system has a well-organized database which handles all the data entered by a particular user and retrieved by administrator. One more thing is that the admin has overall power to update other sections of the website such as adding new admins, adding new books or deleting previous ones. Another difficulty is based on the overall implementation including multiple booking complexity, dynamic webpages and mailing system.

Chapter 2

BACKGROUND STUDY

2.1 Introduction

Designing a system includes a number of procedures. So before anything is done we need to know first about the problem by doing a procedural analysis. Due to design requirements we first need to analyze the system before any implementation. During this analysis phase we may have ideas that may be modified during the implementation phase. That means analysis consists of the study of the system, its behavior and requirements but still some errors may be there which have to be corrected due to some conditions during the implementation phase.

2.2 Definition of *IUT Library Management System*

The idea of *IUT Library Management System* was born out of the need to help the students by offering a convenient transaction and to lessen the workload of the fellow librarians. Along with ensuring convenient transaction, we focused on accuracy.

There are two parts in the said website; that's User and Administrative parts respectively. The focus was given mainly on the implementation of the Admin section. User part is where the visitor can access by signing up and view the required information.

In Admin section the admin after getting logged in can perform the required operations which include borrowing, returning of the books and the admin have total access over the system.

Also students of nowadays suffer from different problems to access the stated programs, ranges from lack of awareness, and the difficulties in transaction. Nowadays due to the development in information technologies there is need to apply these technologies to tackle the stated problems. The ultimate goal is to design a system that can help the users by offering a convenient and accurate transaction and can lessen the workload of the librarians.

2.3 Advantages of *IUT Library Management System*

IUT Library Management System provides the following advantages:

- **Access to information:** The respective website helps the admins to access vast information about the library and services provided and can have a view without shortest possible time.

- **Easy transaction process:** The respective website allows users to borrow required books, to keep track on the books already returned and ensures all these transactions in a minimum possible time.

- **Security:** As users are to perform all the transactions online, the system helps in securing users' information. Unlike before where user information are left vulnerable which can be accessed easily by unauthorized individual.

2.4 Drawbacks of existing system

Some of the problems with the existing system are as follows:

- ❖ Fast report generation is not possible.

- ❖ Tracing a book is difficult.

- ❖ Information about issue/return of the books are time consuming.

- ❖ The librarians get a limited hours to manage all the library jobs like taking care of the arrangement and maintenance.

Chapter 3

PROPOSED SYSTEM

3.1 Introduction

After identifying the flaws of the existing system, we focused on eradicating the drawbacks and establishing a system that is user convenient and ensures accuracy along with. Our focus was on developing the admin activities to lessen the work load and ensure a dynamic transaction as well.

3.2 Proposed System

There will be three major components:

- Stock maintenance.
- Transaction entry.
- Reports.

Proposed system provides with following solutions:

- ✓ It provides ' better and efficient ' service to members.
- ✓ Reduces the workload of employee.
- ✓ Faster retrieval of information about the desired book.
- ✓ Provides facility for proper monitoring reduce paper work and provides data security.
- ✓ All details will be available on a click.

3.3 System description

- **Admin registration:** The authorized admins can add more admins by filling the form and the admins after getting registered, can log into the system by submitting user name and password.
- **Member registration:** The admin after getting logged in can view the registered members who may be either students or faculties and can add new members if required. Member registration is done under the supervision of authorized admin.

- **Managing books:** The admin can have an overview over all the books those are listed with full details. Along with that he can add more books by providing necessary information.
- **Transaction process:** The admin can lend a book to any individual and keep track on the books which are already returned. The system offers such comfort to have a glance at all the borrowed and returned books with full details at a glance.

Administrator carries out the updates and the full control of the system. They deal with the technical issues of the system, as such for security reasons there may be limited number of administrators.

3.4 E-R diagram

It is clear that the physical objects from the previous section (members, books, library) correspond to entities in the Entity-Relationship (ER) model, and the operations to be done on those entities – holds, checkouts, and so on – correspond to relationships. However, a good design will minimize redundancy and attempt to store all the required information in as small a space as possible.

This E-R diagram is the pictorial representation of all the one-to-one, one-to-many and many-to-many relationships established between all the entities required to develop the system.

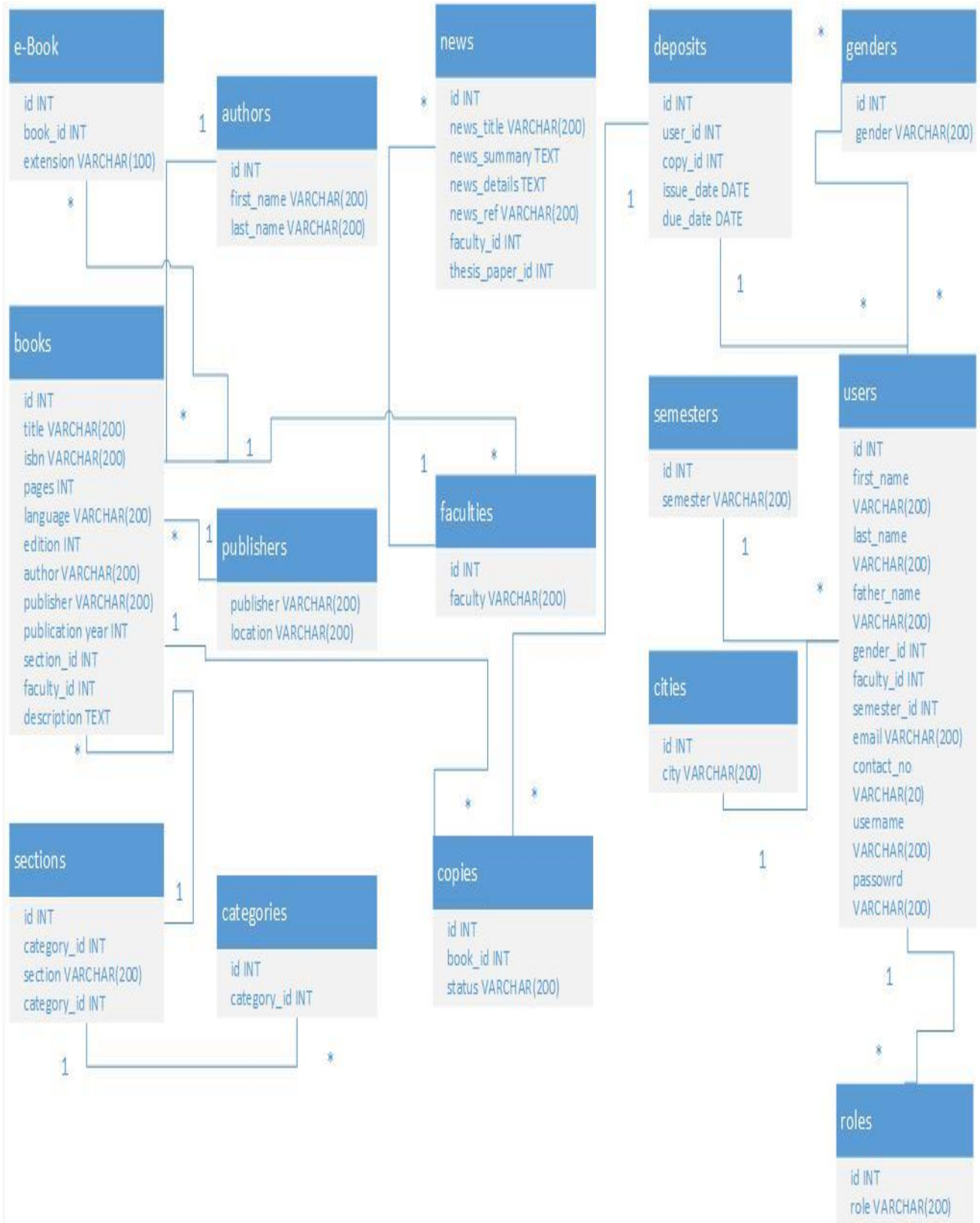


Fig: E-R Diagram

Chapter 4

SYSTEM DESIGN AND IMPLEMENTATION

4.1 Tools and technology used

The tools and technologies used during the development and implementation of our website include:

(a) Programming languages used:

- HTML
- JavaScript
- PHP
- CSS
- SQL
- Bootstrap Framework

(b) Software tools used:

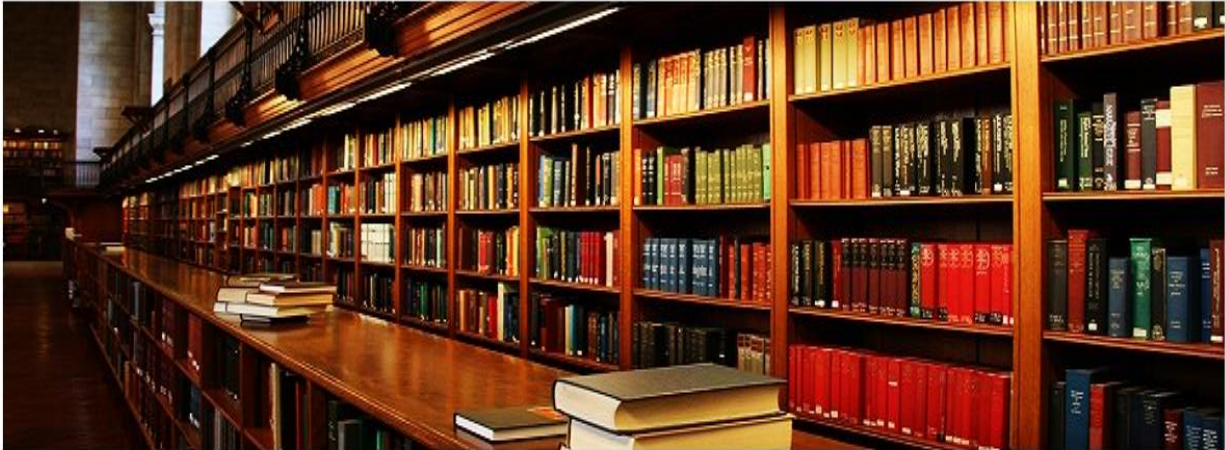
- Xampp
- MySQL Database
- Chrome Browser

(c) Platform Used:

- Windows 8.1 (Professional)

4.2 Home page of IUT library

[HOME](#) [ADMIN](#) [ABOUT](#) [CONTACT](#) [SIGNUP](#)



Welcome to IUT Library

Wednesday, May 25, 2016

[CONTACT US](#)

Address

Islamic University of
Technology

Tel. no.:

000000

Fax:

000000




Fig: Home page of IUT library

4.3 Admin view of IUT library

When the user clicks on the ' ADMIN ' of the home page, the following page appears that asks for the ' USER NAME ' and ' PASSWORD ':

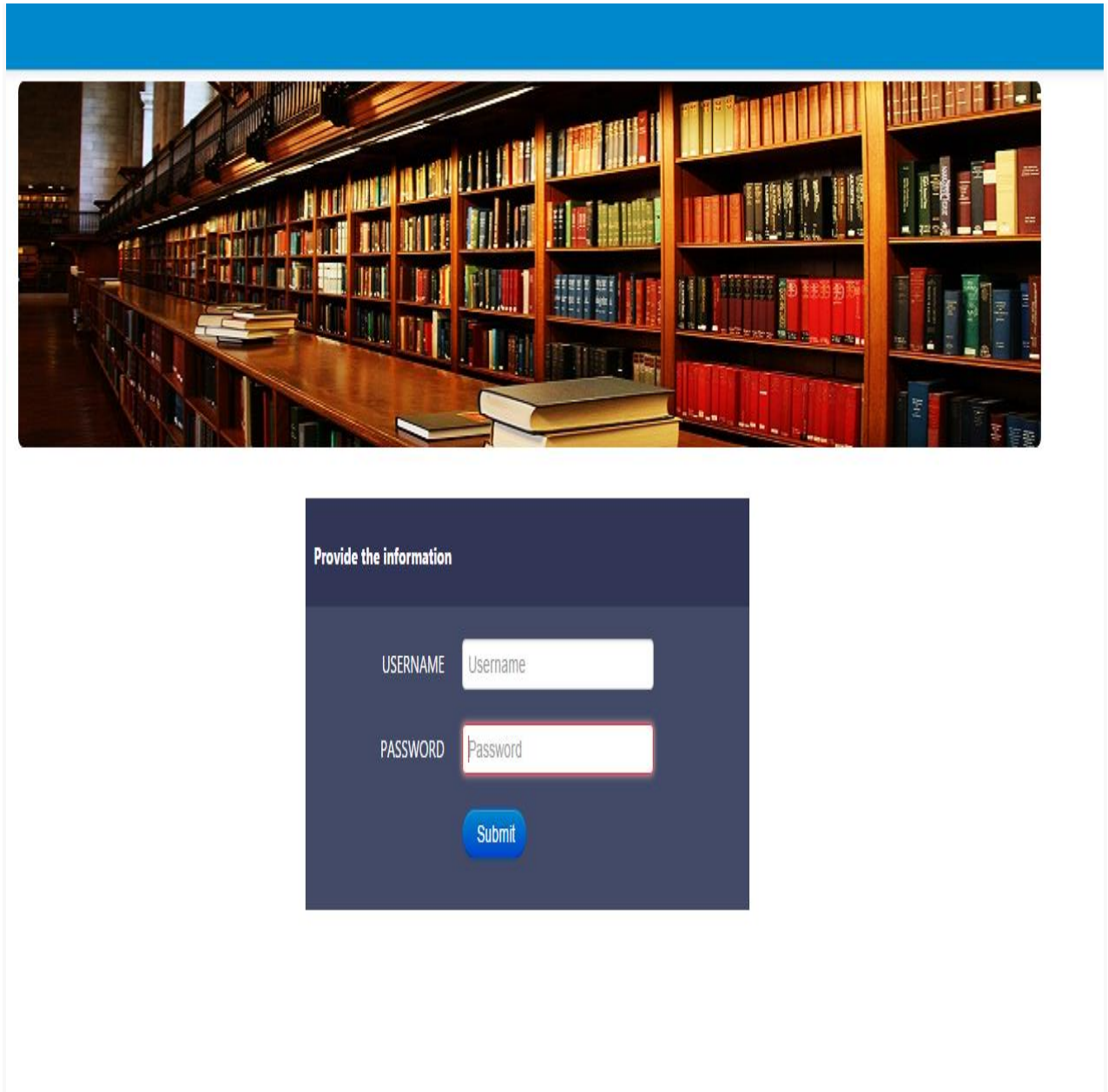


Fig: Admin view of IUT library

After submitting the ' USERNAME ' and ' PASSWORD ', they are verified and after getting authenticated the following page appears:

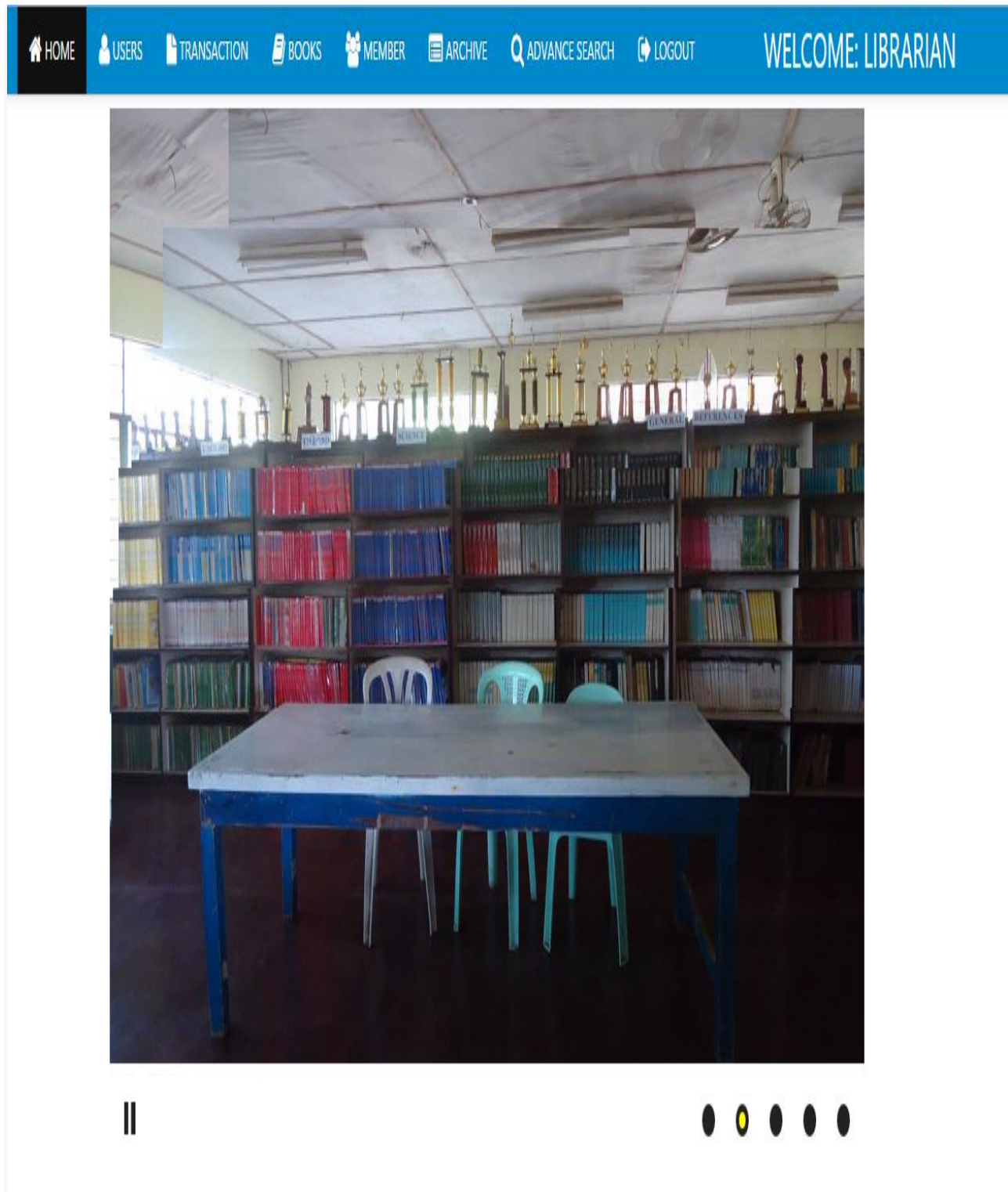
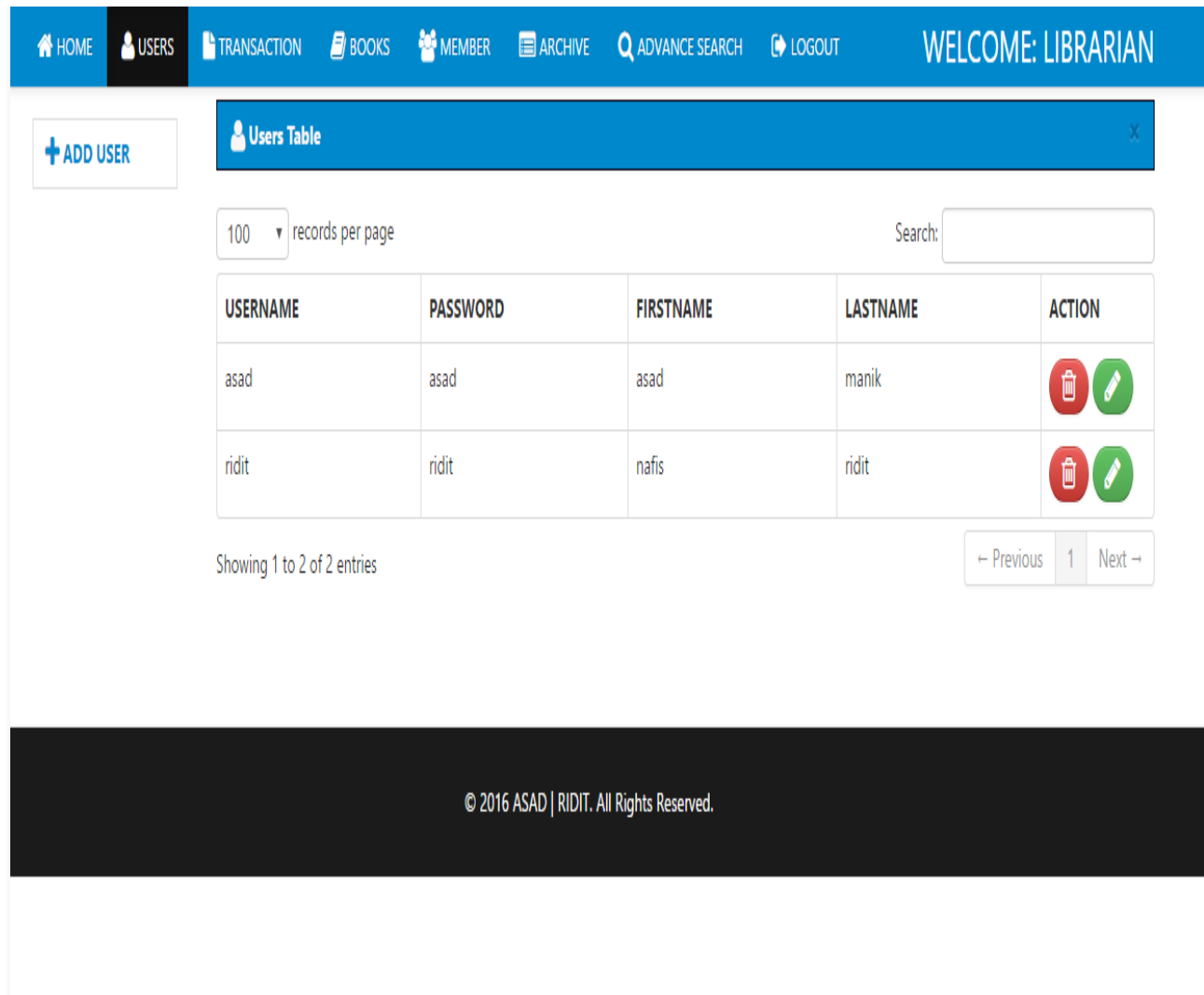


Fig: After getting logged in, this page appears to the verified admin

4.4 Users

The list of all the admins are displayed here:







HOME USERS TRANSACTION BOOKS MEMBER ARCHIVE ADVANCE SEARCH LOGOUT WELCOME: LIBRARIAN

+ ADD USER

Users Table

100 records per page Search:

USERNAME	PASSWORD	FIRSTNAME	LASTNAME	ACTION
asad	asad	asad	manik	 
ridit	ridit	nafis	ridit	 

Showing 1 to 2 of 2 entries

← Previous 1 Next →

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Fig: The list of the admins are displayed in the 'USERS' section

By clicking on the ' ADD USER ' the admin can add more admins by providing the following information:

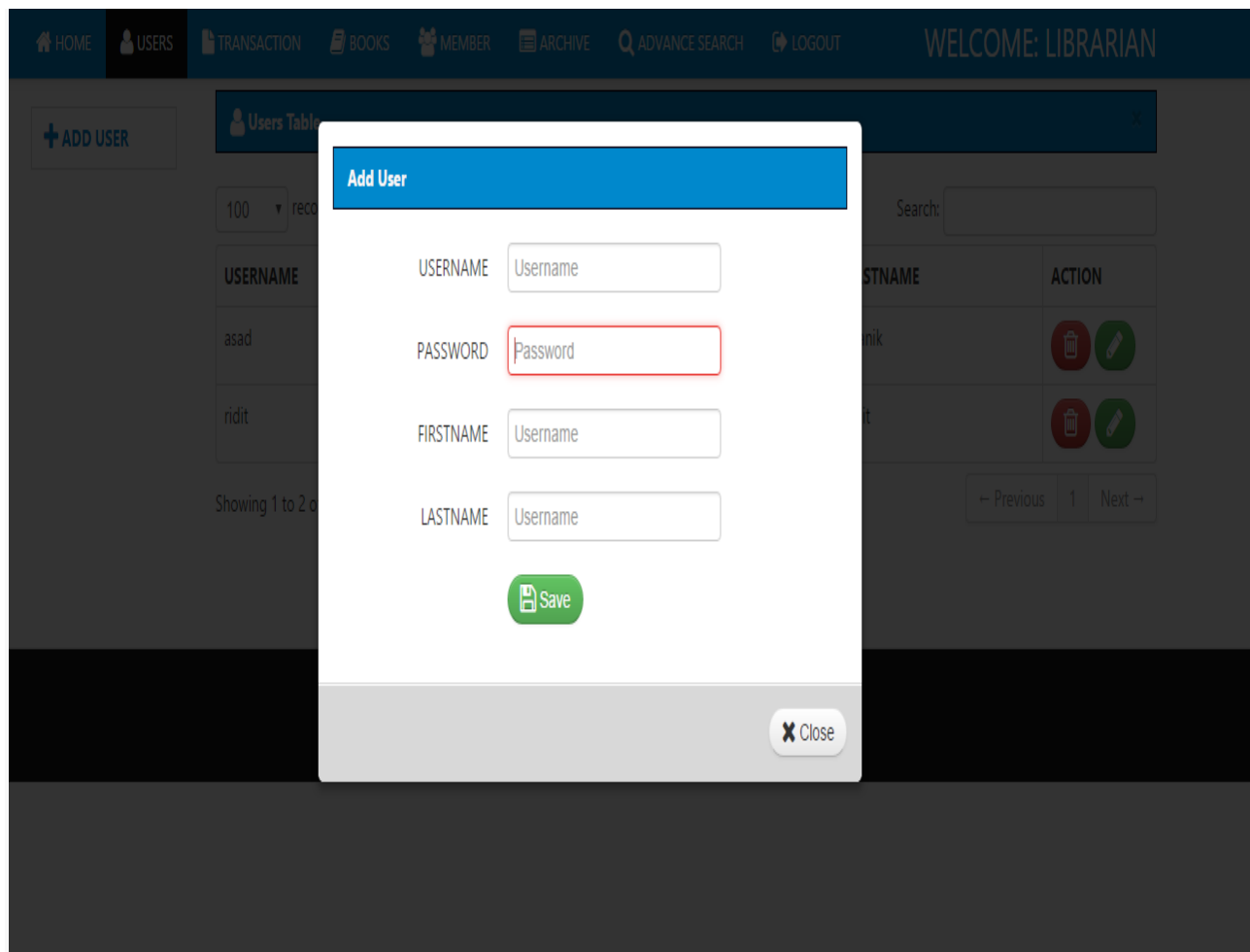
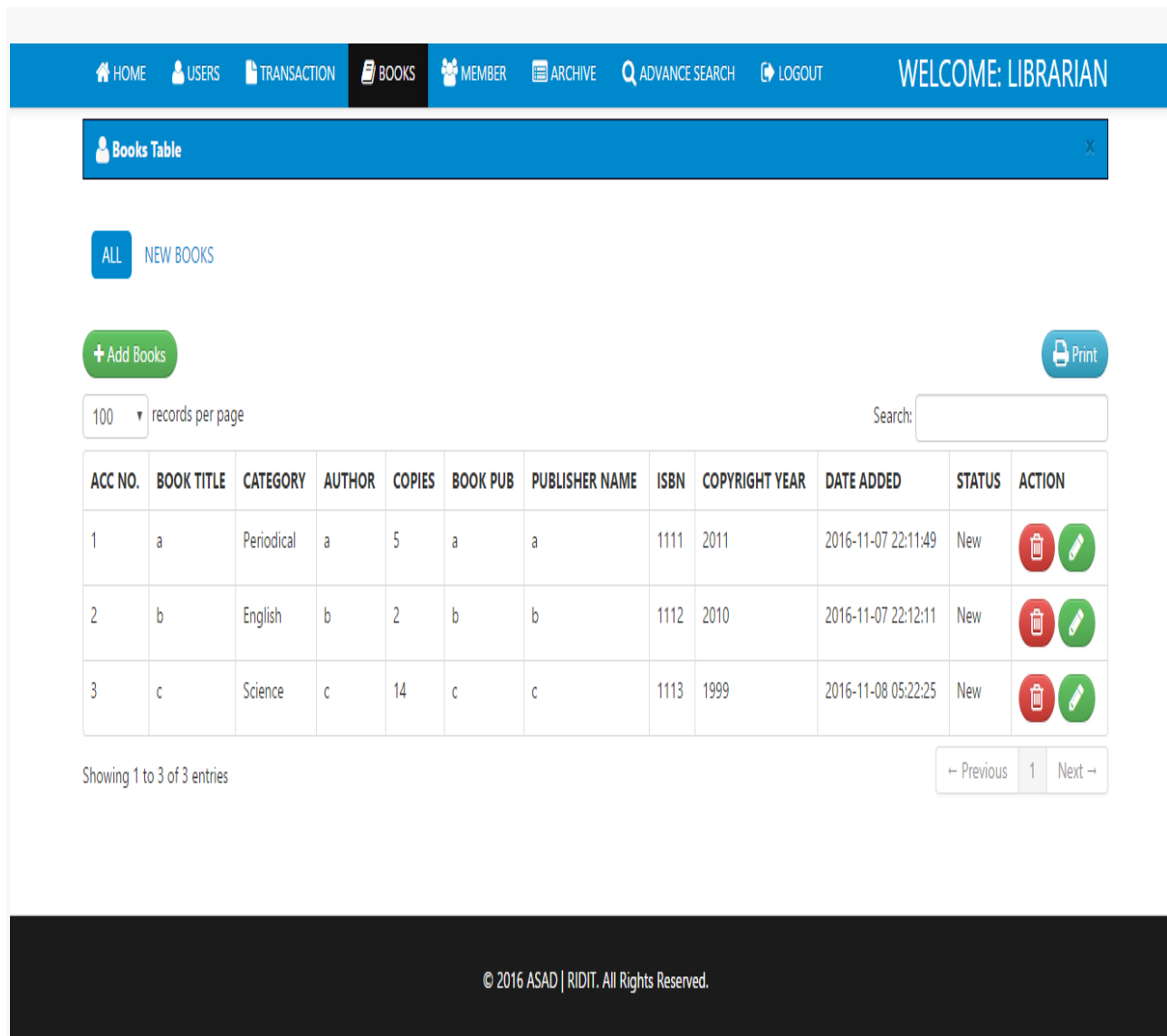


Fig: By providing the required information, an admin can add more admins to have access over

4.5 Books

All the listed books with full details are displayed in the ' BOOKS ' section:









HOME USERS TRANSACTION **BOOKS** MEMBER ARCHIVE ADVANCE SEARCH LOGOUT WELCOME: LIBRARIAN

Books Table

ALL NEW BOOKS

+ Add Books Print

100 records per page Search:

ACC NO.	BOOK TITLE	CATEGORY	AUTHOR	COPIES	BOOK PUB	PUBLISHER NAME	ISBN	COPYRIGHT YEAR	DATE ADDED	STATUS	ACTION
1	a	Periodical	a	5	a	a	1111	2011	2016-11-07 22:11:49	New	 
2	b	English	b	2	b	b	1112	2010	2016-11-07 22:12:11	New	 
3	c	Science	c	14	c	c	1113	1999	2016-11-08 05:22:25	New	 

Showing 1 to 3 of 3 entries

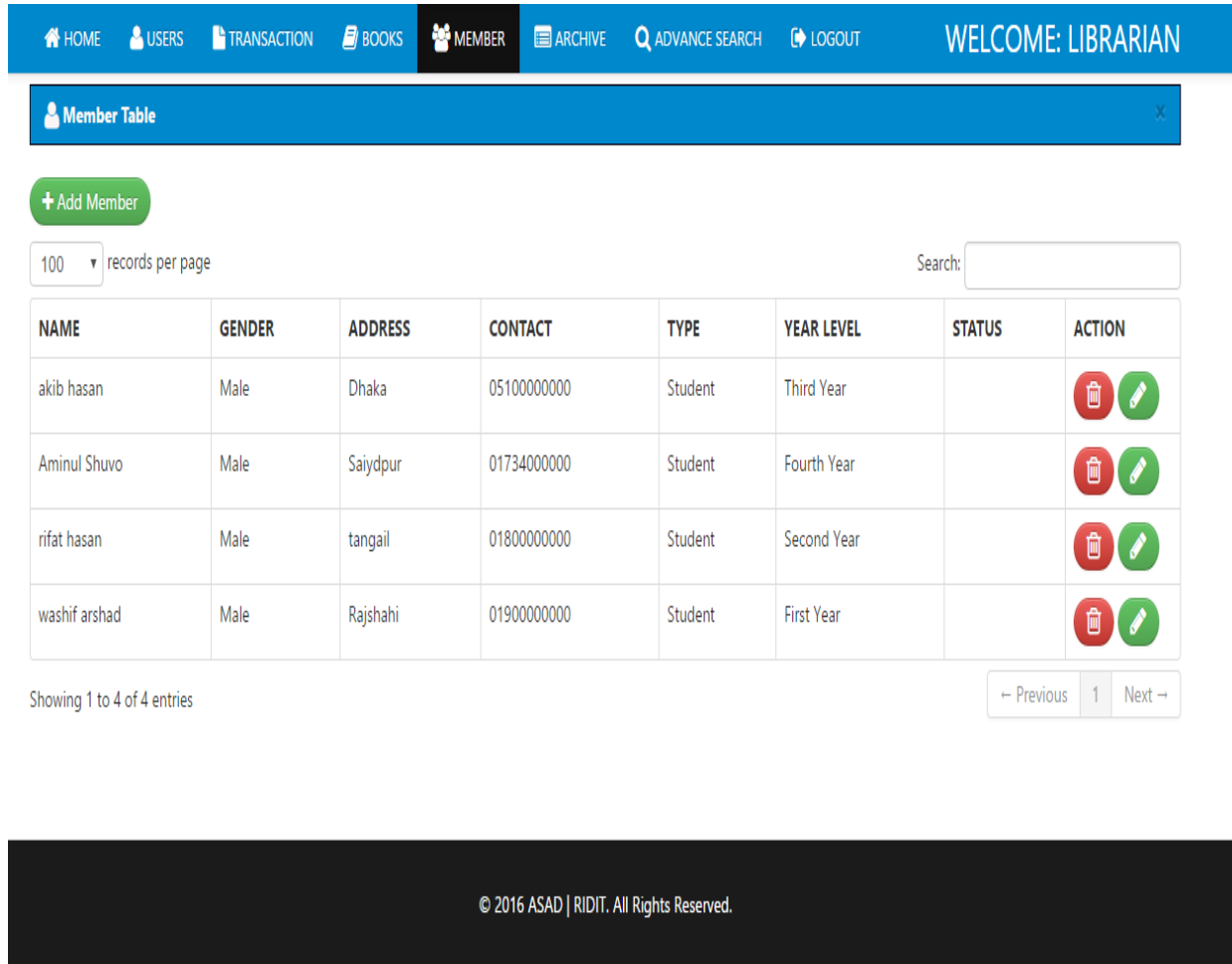
← Previous 1 Next →

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Fig: All the books with full details can be seen by the admin

4.6 Members

List of all members are displayed in the 'MEMBER' section:



The screenshot displays the 'MEMBER' section of a library management system. The top navigation bar includes links for HOME, USERS, TRANSACTION, BOOKS, MEMBER (highlighted), ARCHIVE, ADVANCE SEARCH, and LOGOUT. A welcome message 'WELCOME: LIBRARIAN' is visible on the right. Below the navigation bar, there is a 'Member Table' header with a close button. A green '+ Add Member' button is located above the table. The table has columns for NAME, GENDER, ADDRESS, CONTACT, TYPE, YEAR LEVEL, STATUS, and ACTION. It contains four entries for members: akib hasan, Aminul Shuvo, rifat hasan, and washif arshad. Each entry has a red trash icon and a green edit icon in the ACTION column. Below the table, it shows 'Showing 1 to 4 of 4 entries' and a pagination control with 'Previous', '1', and 'Next' buttons. A footer at the bottom of the page reads '© 2016 ASAD | RIDIT. All Rights Reserved.'









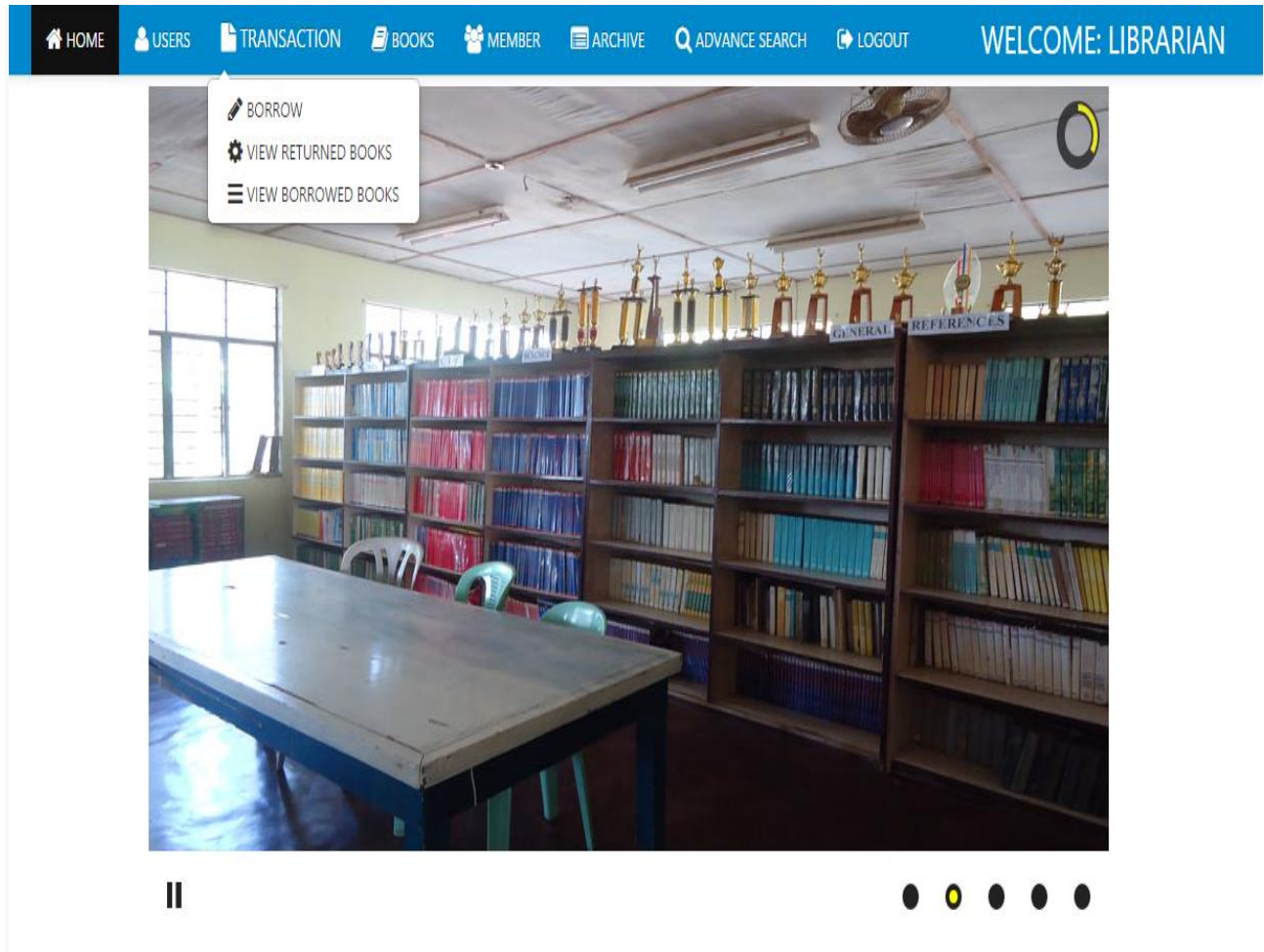
NAME	GENDER	ADDRESS	CONTACT	TYPE	YEAR LEVEL	STATUS	ACTION
akib hasan	Male	Dhaka	0510000000	Student	Third Year		 
Aminul Shuvo	Male	Saiydpur	0173400000	Student	Fourth Year		 
rifat hasan	Male	tangail	0180000000	Student	Second Year		 
washif arshad	Male	Rajshahi	0190000000	Student	First Year		 

Fig: An admin can see all the members with full details from here

4.7 Transactions

It offers the following three transactions:



(a) After clicking on ‘ BORROW ’ the following page appears. When the admin goes for giving books as loan to a particular student, a student can borrow at most three books at a time.

HOME
 USERS
 TRANSACTION
 BOOKS
 MEMBER
 ARCHIVE
 ADVANCE SEARCH
 LOGOUT
WELCOME: LIBRARIAN

Borrow Table x

Borrower Name

Select an Option ▼

Due Date

Borrow

Select Book








100 ▼ records per page
Search:

ACC NO.	BOOK TITLE	CATEGORY	AUTHOR	PUBLISHER NAME	STATUS	ADD
1	Aj dupure tomar nimontron	Literature	Humayun Ahmed	Maksud	Old	
2	Ektukhani Biggan	Science	Muhammad Zafar Iqbal	Robiul	Damage	
3	Quantum Mechanics	Science	Muhammad Zafar Iqbal	Mamun	Damage	
4	Ebong Himu	Literature	Humayun Ahmed	Jamil	New	
5	Jara Gonit Olympiad e Jabe	Math	Muhammad Zafar Iqbal	Kakon	Old	
6	Time Machine	Onubad	H.G.Wells	Cameron	Old	
7	Psychopaths	Onubad	Alfred Hitchcock	Aijack	Old	
8	Misir Ali r Chosma	Literature	Humayun Ahmed	Monjurul	New	
10	Shesh er kobia	Literature	Robindronath Thakur	Indronath	Old	
11	Hojoorol	Literature	Sukumar Roy	Upendro	Lost	

Showing 1 to 10 of 10 entries

← Previous
1
Next →

(b) When the admin clicks on ‘ VIEW BORROWED BOOKS ‘ , the following page appears that displays the list of all books that are borrowed by different students, along with their status and borrower:

Borrowed Books						
BOOK TITLE	BORROWER	YEAR LEVEL	DATE BORROW	DUE DATE	DATE RETURNED	BORROW STATUS
Hojoorol	Aminul Shuvo	Fourth Year	2016-05-25 15:01:09	27/05/2016		pending 
Ektukhani Biggan	washif arshad	First Year	2016-05-25 14:59:49	24/06/2016		pending 
Misir Ali r Chosma	washif arshad	First Year	2016-05-25 14:59:49	24/06/2016		pending 
Quantum Mechanics	washif arshad	First Year	2016-05-25 14:59:49	24/06/2016		pending 
Misir Ali r Chosma	rifat hasan	Second Year	2016-05-25 14:58:29	31/05/2016		pending 
Jara Gonit Olympiad e Jabe	rifat hasan	Second Year	2016-05-25 14:58:29	31/05/2016	2016-05-25 14:59:06	returned 
Aj dupure tomar nimontron	rifat hasan	Second Year	2016-05-25 14:58:29	31/05/2016		pending 

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Fig: An admin can have a view over all the borrowed books with full details

(c) When the admin clicks on ‘ VIEW RETURNED BOOKS ‘ , the following page appears that displays the list of all books which are already returned by the respective borrower, along with the following details:

Borrowed Books



BOOK TITLE	BORROWER	YEAR LEVEL	DATE BORROW	DUE DATE	DATE RETURNED
Jara Gonit Olympiad e Jabe	rifat hasan	Second Year	2016-05-25 14:58:29	31/05/2016	2016-05-25 14:59:06

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Fig: An admin can have a view over all the books those are already returned with full details

4.8 About

After clicking on the ' ABOUT ' section the following page appears:

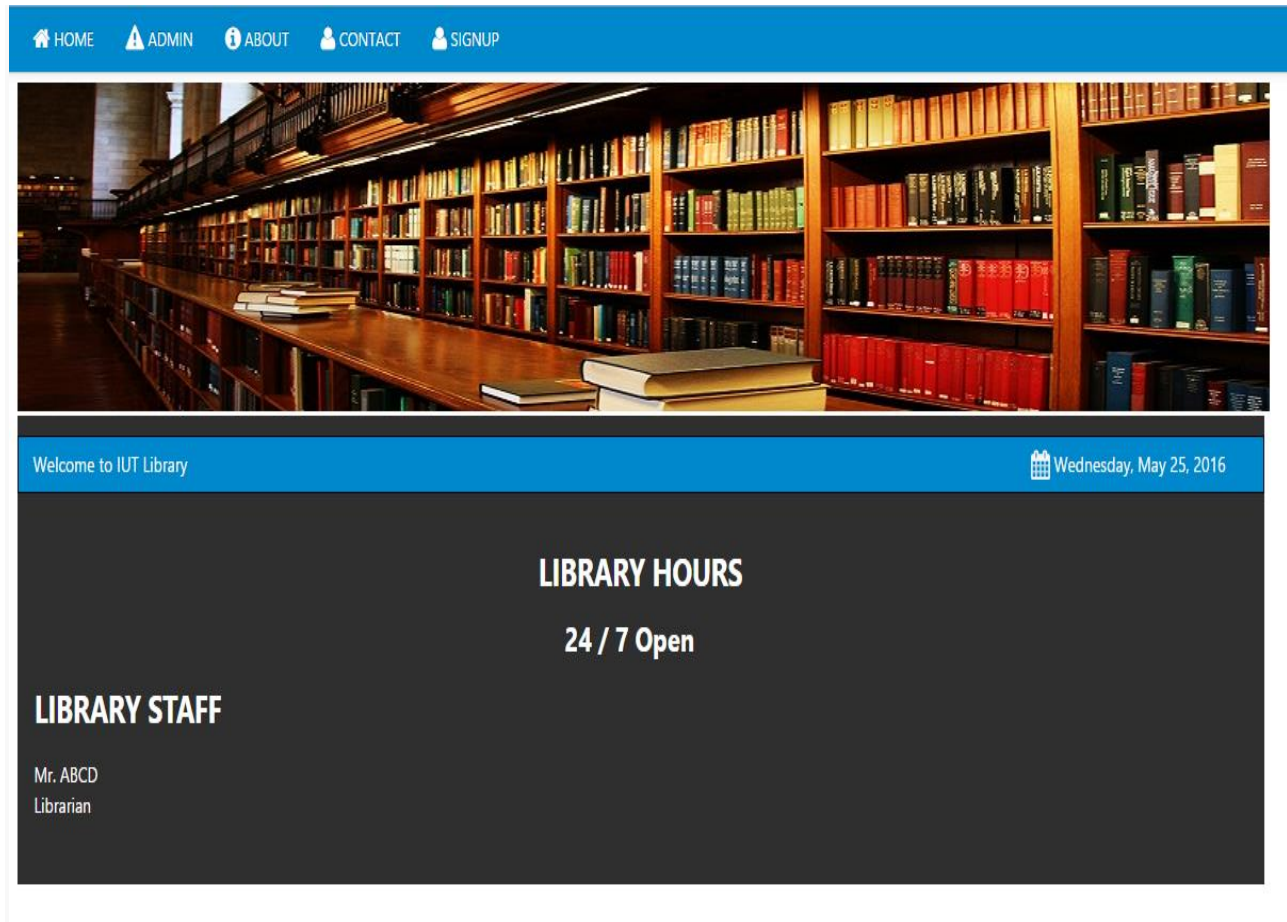


Fig: Contains the basic info regarding the respective library

4.9 Advanced search facility

An admin can search for any particular book by providing the following information:

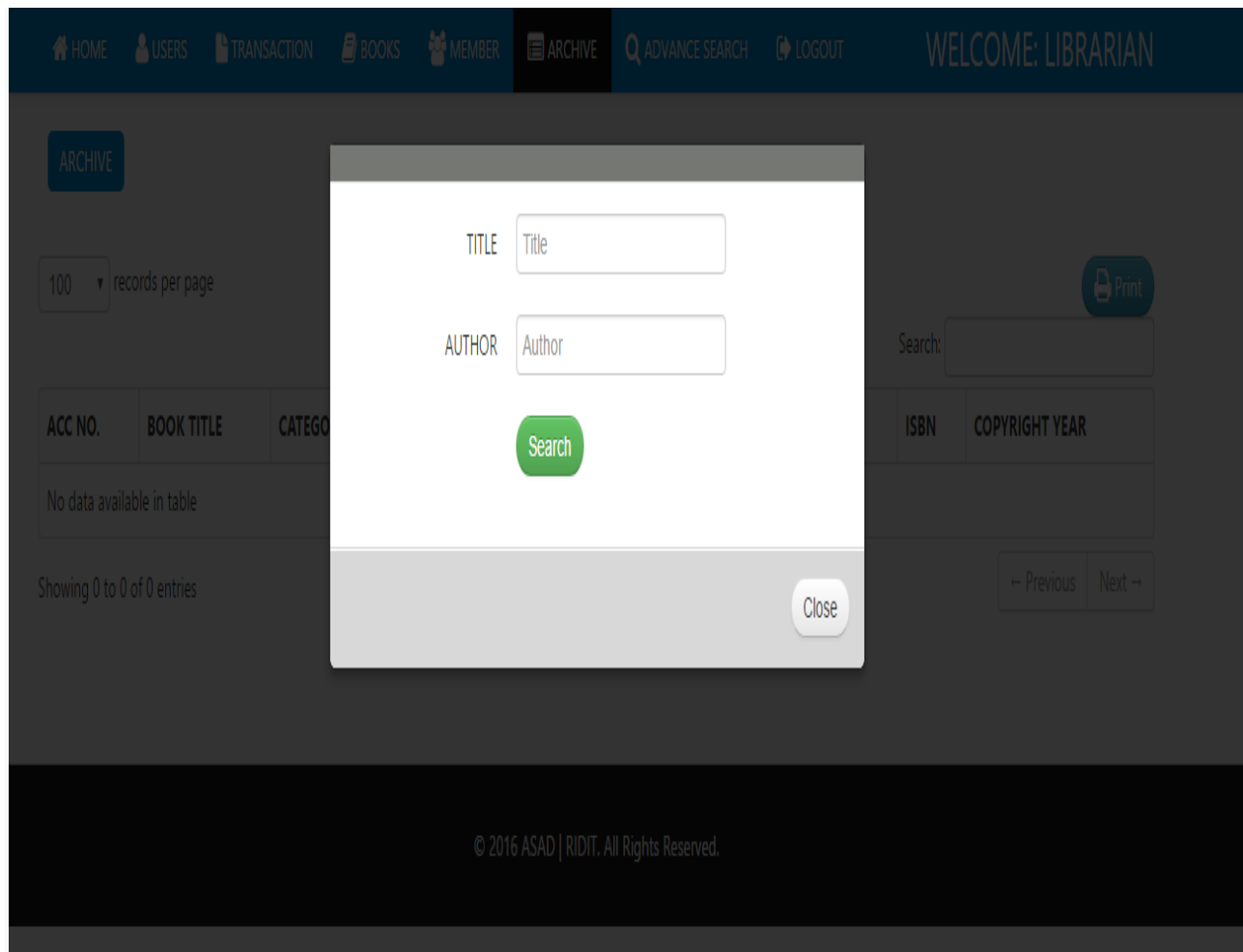
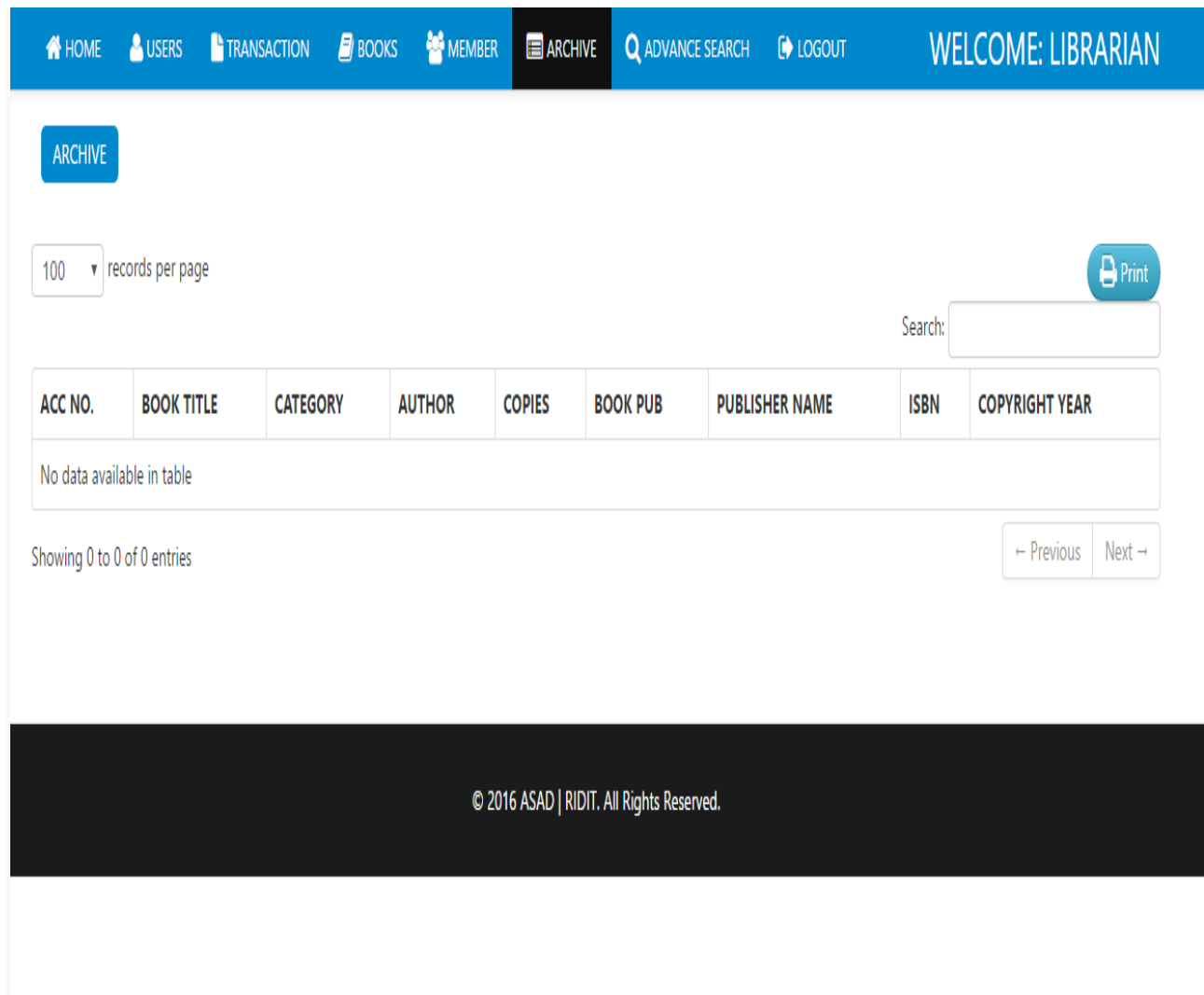


Fig: Advance search facility lessens time consumption to the minimum

4.10 Archive

When the admin clicks on ' ARCHIVE ' the following page appears:



HOME USERS TRANSACTION BOOKS MEMBER ARCHIVE ADVANCE SEARCH LOGOUT WELCOME: LIBRARIAN

ARCHIVE

100 records per page

Print

Search:

ACC NO.	BOOK TITLE	CATEGORY	AUTHOR	COPIES	BOOK PUB	PUBLISHER NAME	ISBN	COPYRIGHT YEAR
No data available in table								

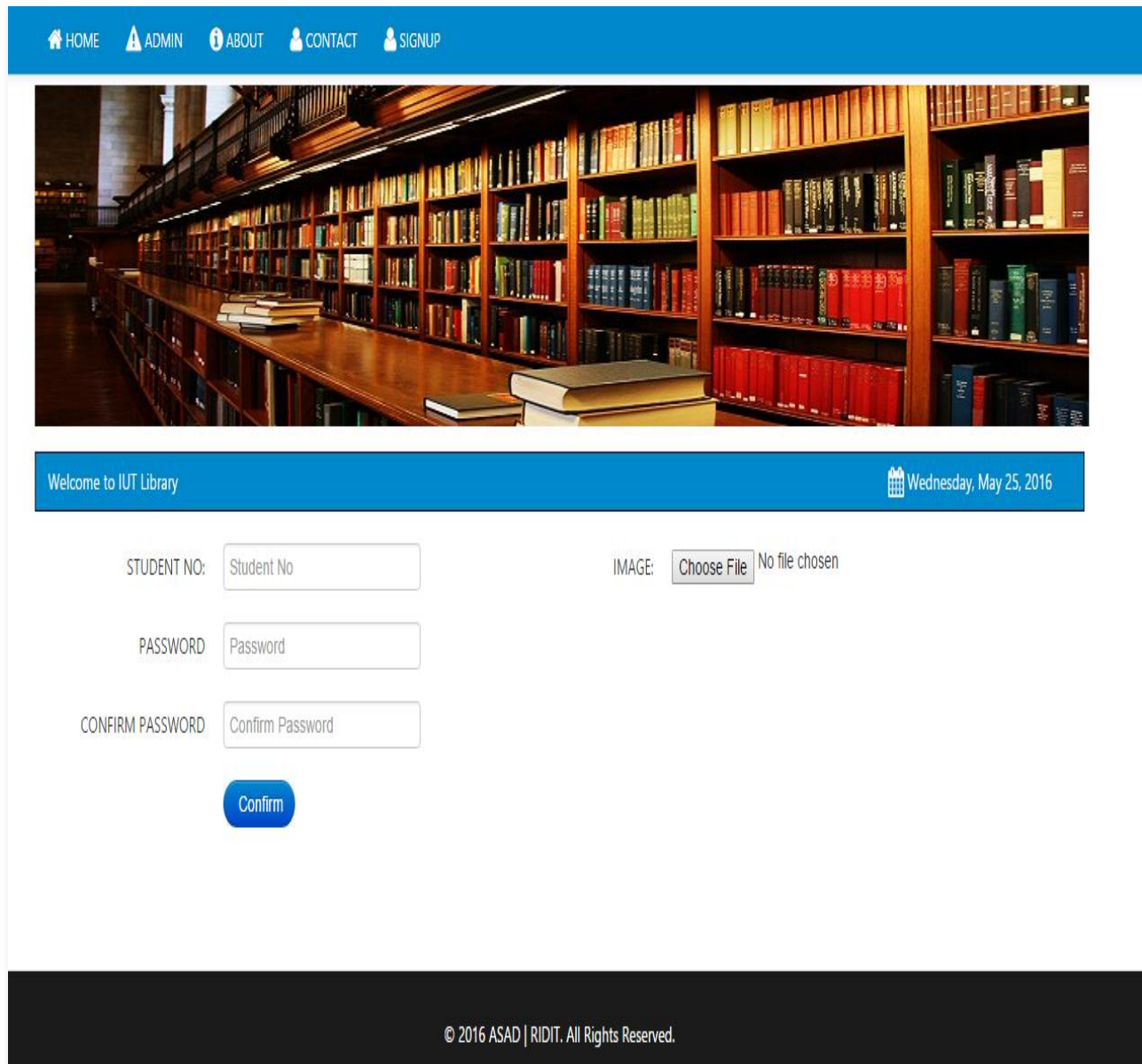
Showing 0 to 0 of 0 entries

← Previous Next →

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4.11 Member registration

Any user can create his own account through 'Sign Up' option:



The screenshot displays the IUT Library website's sign-up interface. At the top, a blue navigation bar contains links for HOME, ADMIN, ABOUT, CONTACT, and SIGNUP. Below this is a large image of a library interior with bookshelves. A secondary blue bar below the image displays 'Welcome to IUT Library' on the left and 'Wednesday, May 25, 2016' on the right. The main content area features a sign-up form with the following elements:

- STUDENT NO:
- PASSWORD:
- CONFIRM PASSWORD:
- IMAGE: No file chosen
-

At the bottom of the page, a black footer bar contains the text: © 2016 ASAD | RIDIT. All Rights Reserved.

Fig: By fulfilling the form any user can create an account of his own

Chapter 5

CONCLUSION

5.1 Introduction

The purpose of this document was to describe the external behavior of the *Library Management System*. The Vision Document captures very high-level requirements and design constraints, which gives the reader an understanding of the Library Management System to be developed. Requirements Specification defines and describes the operations, interfaces, performance, and quality assurance requirements of the Library Management System. The document also describes the nonfunctional requirements such as the user interfaces. It also describes the design constraints that are to be considered when the system is to be designed.

5.2 Facilities

It provides following facilities to

Operator :

Can enter details related to a particular book.

- Can provide membership to members.

Admin :

- Can read and write information about any member.
- Can update, create, delete the record of membership as per requirement and implementation plants.

5.3 Scope

The *IUT Library Management System* that has been developed provides the members of the Library and employees of the library with books information, online blocking of books and many other facilities. The Library Management System is supposed to have the following features.

- The product provides the members with online blocking of books capabilities and the library Management System is up and running all day.
- The system provides logon facility to the users.
- The system provides the members with the option to check their account and/or change their options like password of the account whenever needed all through the day during the library hours.
- The features that are described in this document are used in the future phases of the software development cycle. The features described here meet the needs of all the users. The success criteria for the system is based in the level up to which the features described in this document are implemented in the system.

The feasibility of the proposed system can be determined if the following are accomplished in different phases:

To create an efficient and effective backup system so that important information is never lost.

Different feasibilities carried out can be classified into:

- ✚ Technical feasibility
- ✚ Economic feasibility
- ✚ Operational feasibility

To improve our website, we have some future plans including:

- Use of advanced security system
- Greater user friendliness
- More powerful database system will be used.

References

1. https://en.wikipedia.org/wiki/Integrated_library_system
2. <http://www.slideshare.net/AmitUdhwani/library-management-system-29069632>
3. <http://library.northsouth.edu/>
4. <http://library.bracu.ac.bd/>