
Software Requirements Specification

For
NEUB Library Management

Version 1.0 approved

Prepared by <author>

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<date created>

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 Purpose

The SRS typically contains the brief description of the project. The purpose of the requirement document is to specify all the information required to design, develop and test the software.

- The purpose of this project is to provide a friendly environment to maintain the details of books and library members.
- The main purpose of this project is to maintain easy circulation system using computers and to provide different reports.

1.2 Document Conventions

➔ Entire document should be justified.

➔ Convention for main title:

- 1) Font Face: Times New Roman.
- 2) Font Style: Bold.
- 3) Font Size: 32.

➔ Convention for sub title:

- 1) Font Face: Times New Roman.
- 2) Font Style: Bold.
- 3) Font Size: 32.

➔ Convention for body:

- 1) Font Face: Times New Roman.
- 2) Font Style: Normal.
- 3) Font Size: 11.

1.3 Intended Audience and Reading Suggestions

- Librarian
- Authority
- Developers
- All User

1.4 Product Scope

The document only covers the requirements specifications for the Library Management System. This document does not provide any references to the other component of the Library Management System. All the external interfaces and the dependencies are also identified in this document. Library Management System is basically updating the manual library system into an internet-based application so that the users can know the availability of books and issue a new book from the librarian. The project is specifically designed for the use of librarian and library user and authority. The project will work as a complete user interface for library management process and usage from ordinary users. The project can be easily implemented under various situations. We can add new features as and when we require, making reusability possible as there is flexibility in all the modules. The language used for developing the project is PHP, Java Script, HTML5, CSS 3, AJAX and all of these are quite advantageous than other languages in terms of performance, tools available, cross platform compatibility, libraries, cost (freely available & open source), and development process.

1.5 References

- PHP: - <http://www.phptherightway.com/>
- HTML5: - <http://www.w3schools.com/>
- CSS3: - <http://www.w3schools.com/>
- JAVA Script: - <http://www.w3schools.com/>
- AJAX: - <http://stackoverflow.com/>

2. Overall Description

2.1 Product Perspective

The implementation of Library Management starts with entering and updating master records like book details, library information. Any further transaction like book issue, book return will automatically update the current books. The proposed Library Management System will take care of the current book detail at any point of time. The book issue, book return will update the current book details automatically so that user will get the update current book details.

2.2 Product Functions

- The main purpose of this project is to reduce the manual work.
- This software is capable of managing Book Issues, Returns, and Calculating/Managing Fine. Generating various Reports for Record-Keeping according to end user requirements.

2.3 User Classes and Characteristics

We have 3 levels of users:-

- User module: In the user module, user will check the availability of the books.
 - Book return
 - Comment
- Librarian module: In this librarian module, librarian can issue book or register user.
 - Register user
 - Comment
 - Book Issue
- Administration module: The following are the sub module in the administration module.
 - Register user
 - Entry book details
 - Book issue
 - Comment Reading

- Update, Edit or Delete of any records.

2.4 Operating Environment

The product will be operating in windows environment. The library management system is a website and shall operate in all famous browsers, for a model we are talking Microsoft Internet Explorer, Google Chrome and Mozilla Firefox. Also it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla Firefox and Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection.

The hardware configuration include Hard Disk: 40GB, Monitor: 15 inch Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor etc.

2.5 Design and Implementation Constraints

Each member will be having an identity card which can be used for the library book issue, fine payment etc. whenever library member wish to take a book, the book issued by the library authority will be check both the book details as well as the student details and store it in library database. In case of retrieval of book much of human intervention can be eliminated.

2.6 User Documentation

The product will include user manual. The user manual will include product overview, complete configuration of the used software (such as SQL server), technical details, backup procedure and contact information which will include email address. There will be no online help for the product at this moment. The product will be compatible with the Internet Explorer 6.0 or higher. The databases will be created in the MySQL.

2.7 Assumptions and Dependencies

The assumptions are:-

- 1) The coding should be error free.
- 2) The system should be user friendly so that it is easy to use for the users.

- 3) The information of all users, books and libraries must be stored in a database that is accessible by the website.
- 4) The system should have more capacity and provide fast access to the database.
- 5) The system should provide search facility and support quick transactions.
- 6) The library system is running twenty four hours a day.
- 7) Users may access from any computer that has internet browsing capabilities and an internet connection.
- 8) Librarian must have their correct usernames and passwords to enter into their online accounts and do actions.

The dependencies are:-

- 1) The specific hardware and software due to which the product will be run.
- 2) On the basis of listing requirements and specification the project will be develop and run.
- 3) The end users (admin & librarian) should have proper understanding to the product.
- 4) The system should have the general report store.
- 5) The information of all users must be stored in a database that is accessible by the library system.
- 6) Any update regarding the book from the library is to be recorded to the database and the data entered should be correct.

3. External Interface Requirements

3.1 User Interfaces

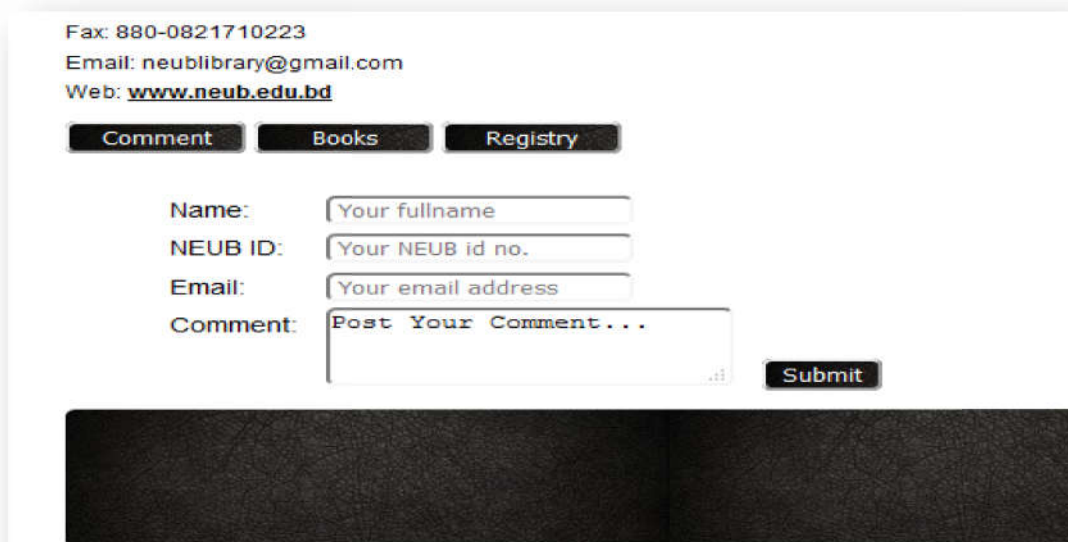
The software provides good graphical interface for the user, librarian and admin can operate on the system.

- User can comment from the user panel.
- User can view the books availability & registry details.
- Librarian can view book details, User Details, Book issue, Edit profile.
- Admin can View, Edit and Delete everything on the product.

➔ Home of user panel:

Figure/Screen shot/Image

➔ Comment box in user panel:



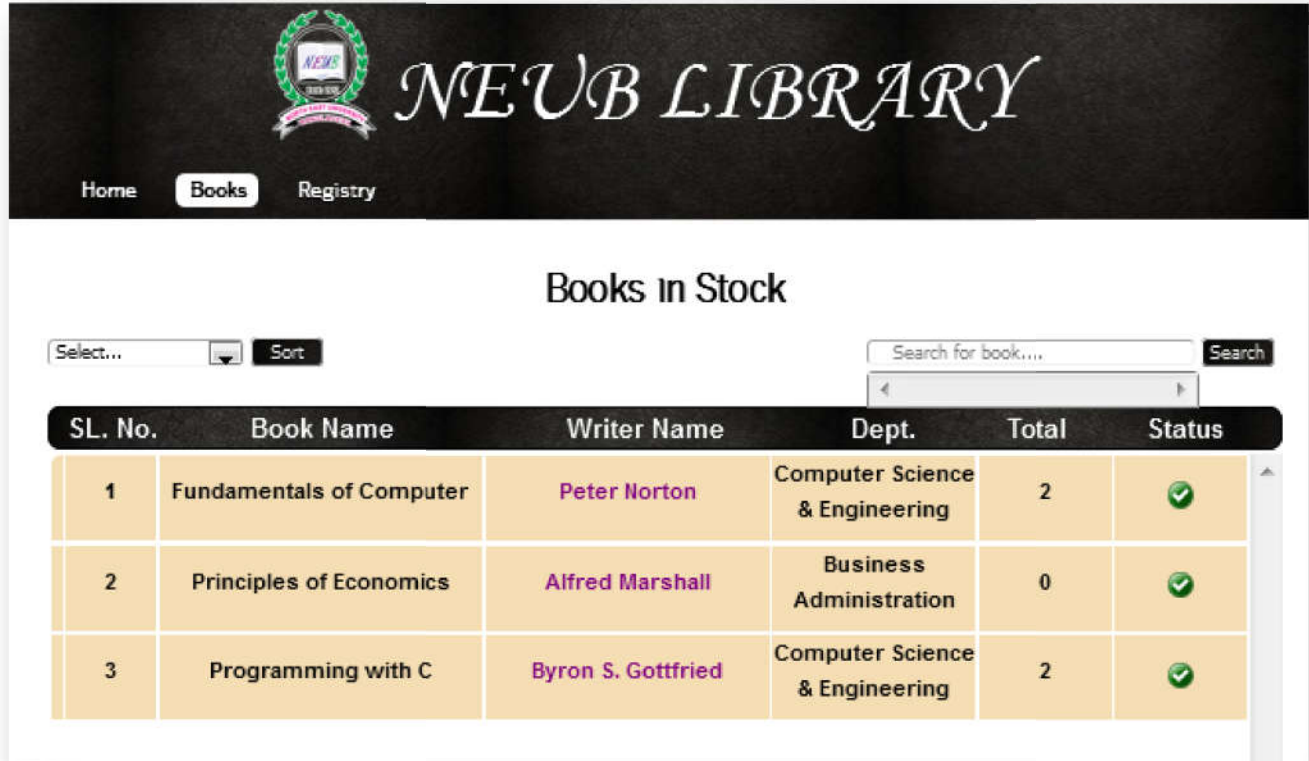
Fax: 880-0821710223
Email: neublibrary@gmail.com
Web: www.neub.edu.bd

Comment **Books** **Registry**

Name:
NEUB ID:
Email:
Comment:

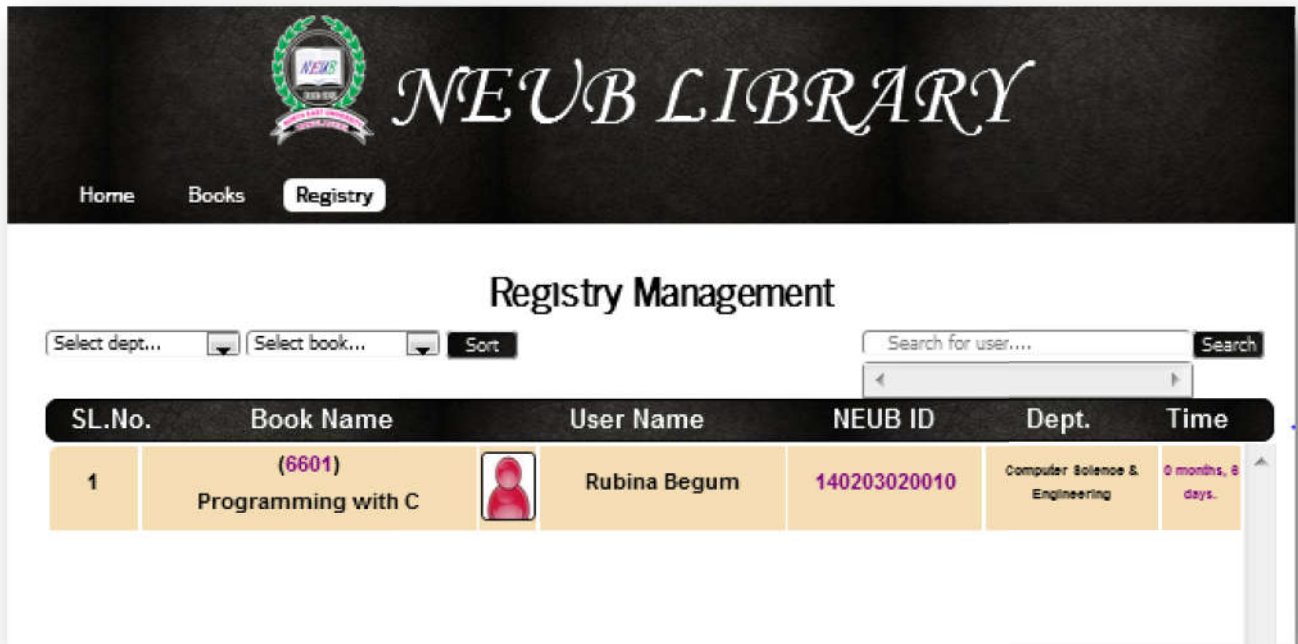
Submit


→ Books availability page in user panel:



SL. No.	Book Name	Writer Name	Dept.	Total	Status
1	Fundamentals of Computer	Peter Norton	Computer Science & Engineering	2	✓
2	Principles of Economics	Alfred Marshall	Business Administration	0	✓
3	Programming with C	Byron S. Gottfried	Computer Science & Engineering	2	✓

→ Books registry details in user panel:



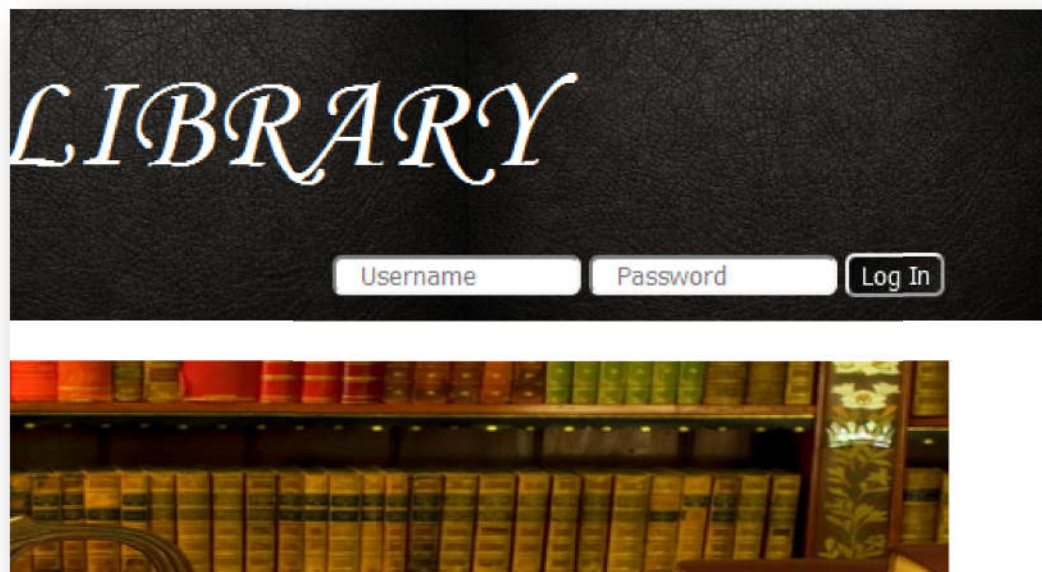
SL.No.	Book Name	User Name	NEUB ID	Dept.	Time
1	(6601) Programming with C	 Rubina Begum	140203020010	Computer Science & Engineering	0 months, 8 days..



The screenshot shows the NEUB Library website's 'Registry Details' page. The header features the NEUB Library logo and navigation links for Home, Books, and Registry. The main content area is titled 'Registry Details' and contains three sections: Books Details, User Details, and Time Details. The Books Details section lists Book Code: 6601, Book Title: Programming with C, and Book Dept.: Computer Science & Engineering. The User Details section includes a user icon, Name: Rubina Begum, NEUB ID: 140203020010, Dept.: Computer Science & Engineering, and Category: BSc (Engg.) in CSE. The Time Details section shows Taken Time: 0 months, 6 days. A Refresh button is located at the bottom right of the details box.

Registry Details	
Books Details:	
Book Code :	6601
Book Title :	Programming with C
Book Dept. :	Computer Science & Engineering
User Details:	
	Name: Rubina Begum
	NEUB ID: 140203020010
	Dept.: Computer Science & Engineering
	Category: BSc (Engg.) in CSE.
Time Details:	
Taken Time: 0 months, 6 days.	
Refresh	


→ Librarian & Admin login interface:



The screenshot shows the Librarian & Admin login interface. The header features the word 'LIBRARY' in a large, stylized font. Below the header, there are input fields for Username and Password, and a Log In button. The background of the page shows a bookshelf filled with books.

LIBRARY	
<input type="text" value="Username"/>	<input type="password" value="Password"/>
Log In	

→ User details in librarian & admin panel:









NEUB LIBRARY

Home
Users
Departments
Books
Registry
Admin List
Comments
Log Out
Mir Lutfur Rahman

Registered User

[Register User](#)


SL No.	User Name	User ID	Dept.	Status
1	 Mir Lutfur Rahman	140203020002	Computer Science & Engineering	✓
2	 Pranta Sarker	140203020004	Computer Science & Engineering	✓
3	 Rocksar Sultana Smriti	140203020003	Computer Science & Engineering	✓
4	 Rubina Begum	140203020010	Computer Science & Engineering	✓
5	 Topu Dash Roy	140203020005	Computer Science & Engineering	✓



NEUB LIBRARY

Home
Users
Departments
Books
Registry
Admin List
Comments
Log Out
Mir Lutfur Rahman

User Details



Name : Mir Lutfur Rahman

Father Name : Mir Abdul Latif

Mother Name : Beauty Begum

Category : Under Graduate Student

Designation : BSc (Engg.) in CSE.

NEUB ID : 140203020002

Department : Computer Science & Engineering

Present Address : Sylhet

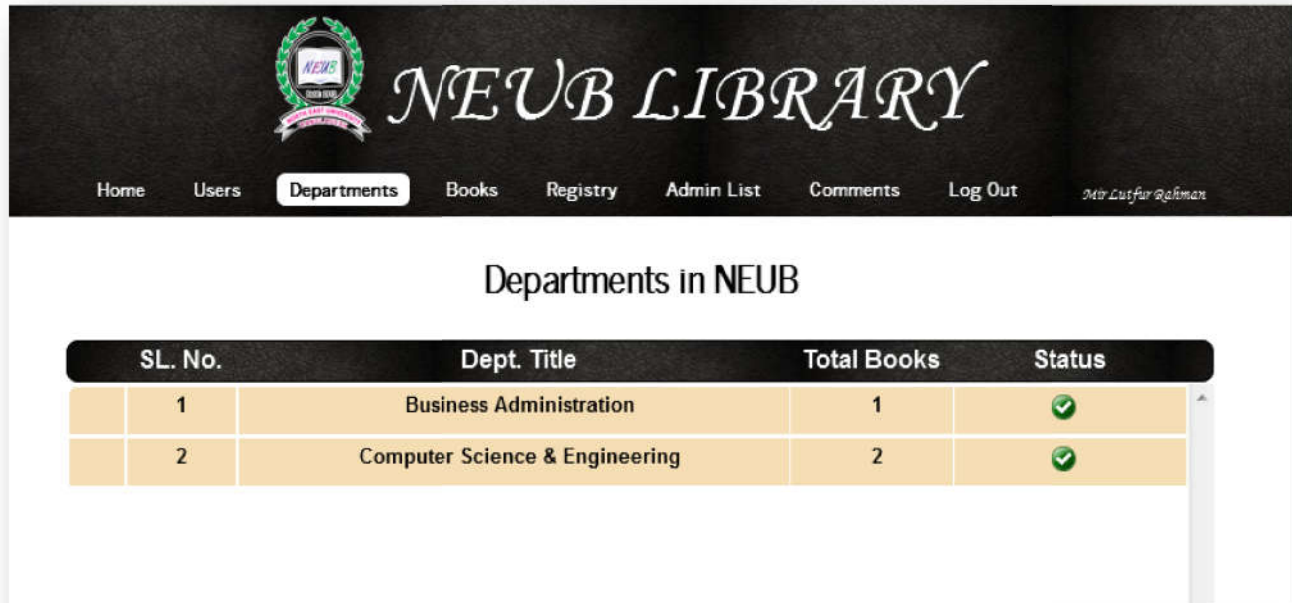
Permanent Address : Sylhet

Contact : 01739213886

Email : mirlutfur.rahman@gmail.com

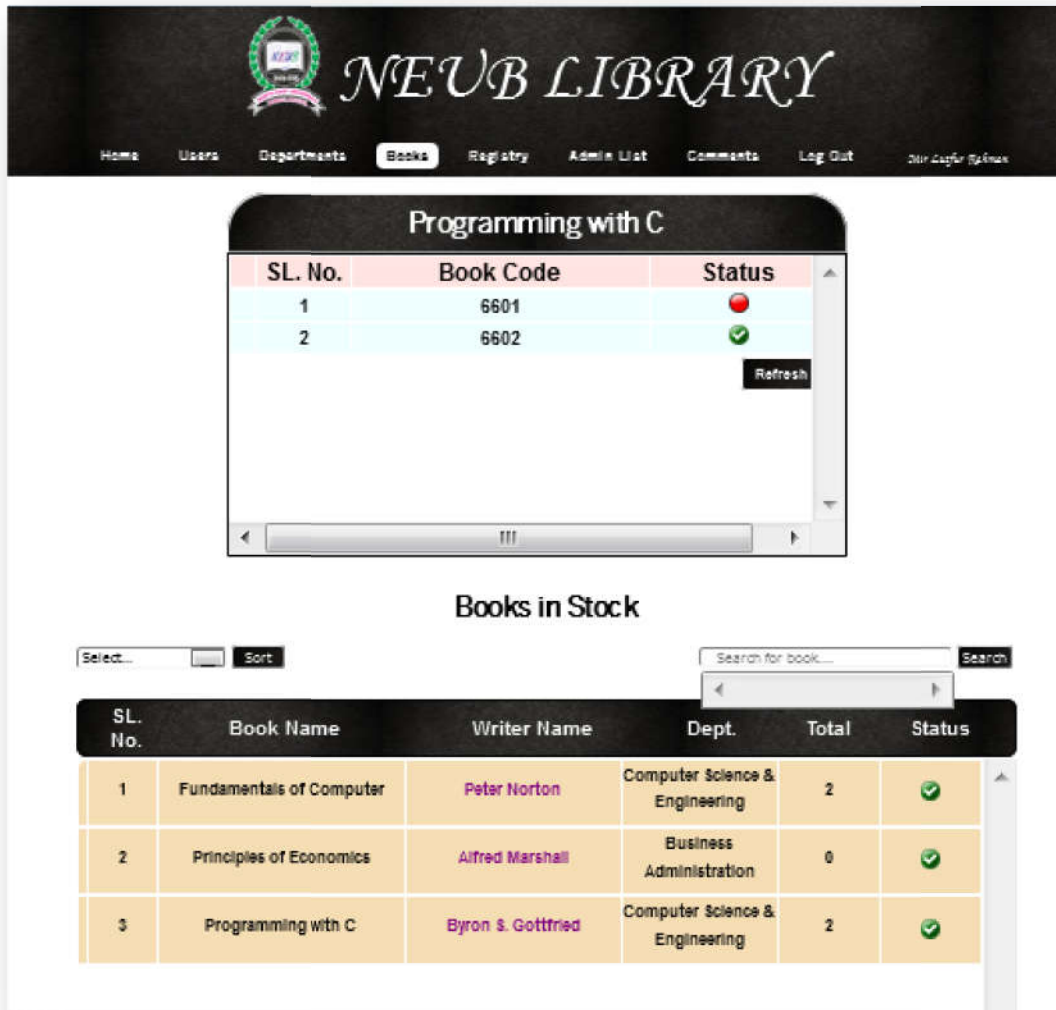
Join History : 3:19 pm, 11 Apr 2016

→ Department wise details in librarian & admin panel:



SL. No.	Dept. Title	Total Books	Status
1	Business Administration	1	✓
2	Computer Science & Engineering	2	✓

→ Books details in librarian & admin panel:



The screenshot shows the NEUB LIBRARY website interface. The top navigation bar includes links for Home, Users, Departments, Books, Registry, Admin List, Comments, Log Out, and My Library. The main content area displays a section titled "Programming with C" with a table showing book details:

SL. No.	Book Code	Status
1	6601	
2	6602	

Below this table is a "Refresh" button. Further down, the "Books in Stock" section is visible, featuring a search bar and a table with the following data:

SL. No.	Book Name	Writer Name	Dept.	Total	Status
1	Fundamentals of Computer	Peter Norton	Computer Science & Engineering	2	
2	Principles of Economics	Alfred Marshall	Business Administration	0	
3	Programming with C	Byron S. Gottfried	Computer Science & Engineering	2	

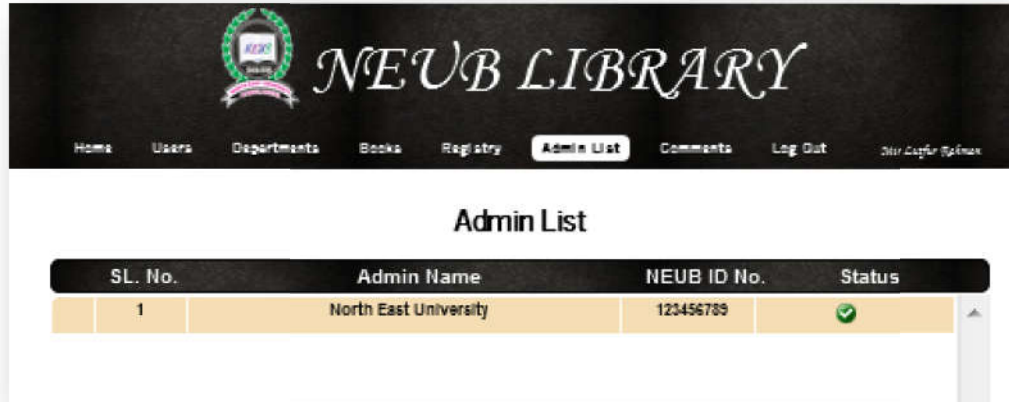
→ Registry details in librarian & admin panel:



The screenshot shows the NEUB LIBRARY website interface with the "Registry" tab selected. The main content area displays a section titled "Registry Management" with a table showing registry details:

SL.No.	Book Name	User Name	NEUB ID	Dept.	Time
1	(6601) Programming with C	Rubina Begum	140203020010	Computer Science & Engineering	0 months, 8 days

→ Librarian list view from admin panel:



The screenshot shows the NEUB Library Admin List page. The header features the NEUB Library logo and a navigation menu with links: Home, Users, Departments, Books, Registry, Admin List (highlighted), Comments, Log Out, and Mir Zafar Siddiqui. The main content area is titled 'Admin List' and contains a table with the following data:

SL. No.	Admin Name	NEUB ID No.	Status
1	North East University	123456789	

→ Comment list view from admin panel:



The screenshot shows the NEUB Library User Comments page. The header features the NEUB Library logo and a navigation menu with links: Home, Users, Departments, Books, Registry, Admin List, Comments (highlighted), Log Out, and Mir Zafar Siddiqui. The main content area is titled 'User Comments' and contains a table with the following data:

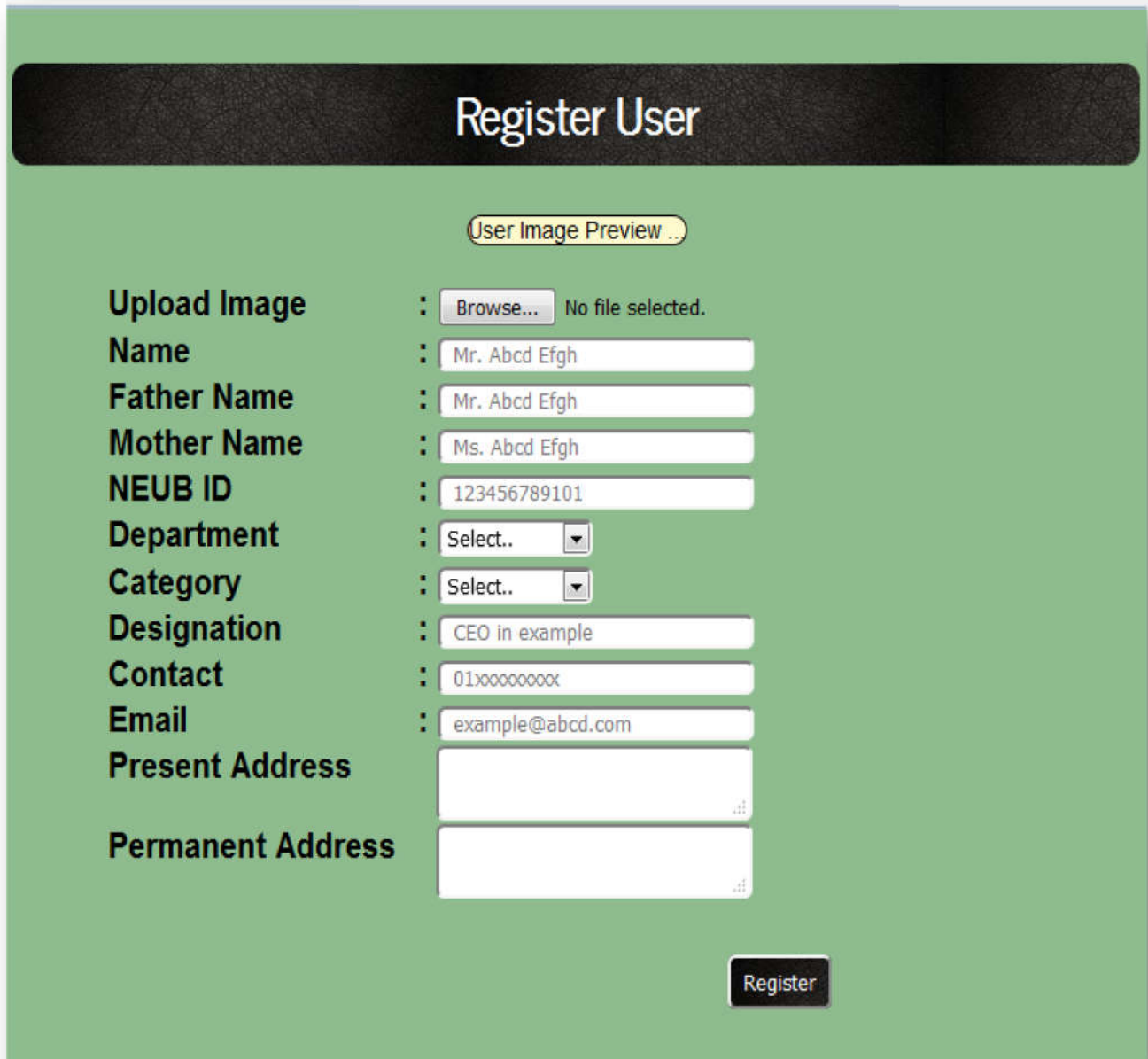
SL. No.	Email	Name	NEUB-ID
1	mir@gmail.com	Mir	140203020002

Below the table, there are two buttons: 'Mark Delete' and 'Delete All'.

➔ Edit profile of admin or librarian:

Figure / Screenshot / Image

→ Register a user page in admin & librarian panel:



The image shows a web form titled "Register User" with a green background and a dark header. The form contains several input fields and a "Register" button. The fields are labeled on the left and have corresponding input areas on the right. The "User Image Preview" section is at the top, followed by "Upload Image" with a "Browse..." button and "No file selected." text. Below this are fields for "Name", "Father Name", "Mother Name", "NEUB ID", "Department", "Category", "Designation", "Contact", "Email", "Present Address", and "Permanent Address". The "Department" and "Category" fields are dropdown menus. The "Present Address" and "Permanent Address" fields are text areas. The "Register" button is at the bottom right.

Register User	
User Image Preview ...	
Upload Image	: <input type="button" value="Browse..."/> No file selected.
Name	: <input type="text" value="Mr. Abcd Efgh"/>
Father Name	: <input type="text" value="Mr. Abcd Efgh"/>
Mother Name	: <input type="text" value="Ms. Abcd Efgh"/>
NEUB ID	: <input type="text" value="123456789101"/>
Department	: <input type="text" value="Select.."/>
Category	: <input type="text" value="Select.."/>
Designation	: <input type="text" value="CEO in example"/>
Contact	: <input type="text" value="01xxxxxxxx"/>
Email	: <input type="text" value="example@abcd.com"/>
Present Address	: <input type="text"/>
Permanent Address	: <input type="text"/>
<input type="button" value="Register"/>	

3.2 Hardware Interfaces

- Operating system : windows
- Hard disk :40 GB
- RAM: 512 MB.
- Processor : Pentium(R)Dual-core CPU

3.3 Software Interfaces

- XAMPP
- Notepad ++
- MySQL server

3.4 Communications Interfaces

The Customer must connect to the Internet to access the Website:

- ➔ Dialup Modem of 52 kbps
- ➔ Broadband Internet
- ➔ Dialup or Broadband Connection with a Internet Provider.

4. System Features

The users of the system should be provided the surely that their account is secure this is possibly by providing:

- ➔ User authentication and validation of members using their unique member ID.\
- ➔ Proper monitoring by the administrator which includes updating accounts status, showing a pop up if the member attempts to issue number of books that exceed the limit provided by the library policy, Assigning find to members who skip the date of return.
- ➔ Proper accountability which includes not allowing a member to see other member's account. Only administrator will see and manage all members account.

➔ Here member defined the Librarian.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

The capability of the computer depends on the performance of the software. The software can take any number of inputs provided the database size is larger enough. This would depend on the available memory space.

The proposed system that we are going to develop will be as the chief performance system within the different campuses of the university which interacts with the university stuff and students. Therefore it is expected that database would perform functionally at the requirements that are specified by the university.

- ➔ The performance of the system should be fast and accurate.
- ➔ Library Management System shall handle expected and non expected errors in ways that prevent loss in information and long downtime period. Thus it should have in built error testing to identify invalid username or password.
- ➔ The system should be able to handle large amount of data. Thus it should accommodate high number of books and users without any fault.

5.2 Safety Requirements

The database may get crushed at any certain time due to virus or operating system failure. There for it is required to take the database backup so that the database is not lost. Proper UPS/ Inverter facility should be there in case of power supply failure.

5.3 Security Requirements

- ➔ System will use secured database.
- ➔ Normal users can just read information but they cannot edit or modify anything.
- ➔ System will have different types of user and every user has access constraints.
- ➔ Proper user authentication should be provided.
- ➔ No one should be able to hack user password.
- ➔ There should be separate accounts for admin; librarian such that no member can access the database and only admin has the rights to update the database.

5.4 Software Quality Attributes

- ➔ There may be multiple admin's creating the project, all of them will have the right to create changes to the system. But the members or other users cannot do changes.
- ➔ The project should be open source.
- ➔ The quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database.
- ➔ The user be able to easily download and install the system.

5.5 Business Rules

A business rule is anything that captures and implements business policies and practices. A rule can enforce business policy, make a decision, or infer new data from existing data. This includes the rules and regulations that the system users should abide by. This includes the cost of the project and the discount offers provided. The users should avoid illegal rules and protocols. Neither admin nor members should cross the rules and regulations.

6. Other Requirements

There are different categories of users namely teaching staff, Librarian, Admin, students etc. Depending upon the category of user the access rights are decided. It means if the user is an administrator then he can be able to modify the data, delete, append etc. All other users except the librarian only have the rights to retrieve the information about database. Similarly there will be different categories of books available. According to the categories of books their relevant data should be displayed. The categories and data related to each category should be coded in the particular format.

Appendix A: Glossary

The following are the list of conventions and acronyms used in this document and the project as well:

- ➔ Administrator: A log in id representing a user with user administration privileges to the software.
- ➔ User: Normally user can comment or view details of books availability.
- ➔ Client: Intended users for the software.

- ➔ SQL: Structured Query Language; used to retrieve information from a database.
- ➔ SQL Server: A server used to store data in an organized format.
- ➔ Layer: Represents a section of the project.
- ➔ User Interface Layer: The section of the assignment referring to what the user interacts with directly.
- ➔ Application Logic Layer: The section of the assignment referring to the web server. This is where all computations are completed.
- ➔ Data Storage Level: The section of the assignment referring to where all data is recorded.
- ➔ Use Case: A broad level diagram of the project showing a basic overview.
- ➔ Class diagram: It is a type of static structure diagram that describes the structure of a system by showing the system's cases, their attributes, and the relationships between the classes.
- ➔ Interface: Something used to communicate across different mediums.
- ➔ Unique Key: Used to differentiate entries in a database.

Appendix B: Analysis Models

➔ Admin Table:

127.0.0.1 » neub_library » sys_lib_admin							
Browse Structure SQL Search Insert Export Import							
#	Name	Type	Collation	Attributes	Null	Default	Extra
<input type="checkbox"/> 1	<u>admin_id</u>	int(11)			No	None	AUTO_INCREMENT
<input type="checkbox"/> 2	username	varchar(255)	utf8_general_ci		No	None	
<input type="checkbox"/> 3	password	varchar(255)	utf8_general_ci		No	None	
<input type="checkbox"/> 4	name	varchar(255)	utf8_general_ci		No	None	
<input type="checkbox"/> 5	email	varchar(255)	utf8_general_ci		No	None	
<input type="checkbox"/> 6	neub_id_no	varchar(255)	utf8_general_ci		No	None	
<input type="checkbox"/> 7	picture	varchar(255)	utf8_general_ci		Yes	NULL	
<input type="checkbox"/> 8	status	enum('active', 'inactive')	utf8_general_ci		No	None	
<input type="checkbox"/> 9	contact	varchar(255)	utf8_general_ci		No	None	

➔ Book Table:

127.0.0.1 » neub_library » sys_lib_book							
Browse Structure SQL Search Insert Export Import							
#	Name	Type	Collation	Attributes	Null	Default	Extra
<input type="checkbox"/> 1	<u>book_id</u>	int(11)			No	None	AUTO_INCREMENT
<input type="checkbox"/> 2	book_name	varchar(255)	utf8_general_ci		No	None	
<input type="checkbox"/> 3	writer	varchar(255)	utf8_general_ci		No	None	
<input type="checkbox"/> 4	dept_id	int(11)			No	None	
<input type="checkbox"/> 5	status	enum('active', 'inactive')	utf8_general_ci		No	None	

→ Book details table:

#	Name	Type	Collation	Attributes	Null	Default	Extra	Action
1	<u>book_det_id</u>	int(11)			No	None	AUTO_INCREMENT	
2	book_code	varchar(255)	utf8_general_ci		No	None		
3	book_id	int(11)			Yes	NULL		
4	status	enum('active', 'inactive', 'destroy')	utf8_general_ci		No	None		

→ Book registry table:

#	Name	Type	Collation	Attributes	Null	Default	Extra	Action
1	<u>take_id</u>	int(11)			No	None	AUTO_INCREMENT	Change
2	admin_id	int(11)			No	None		Change
3	book_det_id	int(11)			No	None		Change
4	user_id	int(11)			No	None		Change
5	taken_time	varchar(255)	utf8_general_ci		No	None		Change
6	taken_date	varchar(255)	utf8_general_ci		No	None		Change
7	status	enum('active', 'inactive')	utf8_general_ci		No	None		Change
8	time	varchar(255)	utf8_general_ci		No	None		Change

→ User Table:

127.0.0.1 » neub_library » sys_lib_user									
Browse Structure SQL Search Insert Export Import Operations Track									
#	Name	Type	Collation	Attributes	Null	Default	Extra	Action	
<input type="checkbox"/> 1	user_id	int(11)			No	None	AUTO_INCREMENT	Change	Drop
<input type="checkbox"/> 2	dept_id	int(11)			No	None		Change	Drop
<input type="checkbox"/> 3	name	varchar(255)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 4	f_name	varchar(255)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 5	m_name	varchar(255)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 6	category	enum('Under Graduate Student', 'Graduate Student')	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 7	designation	varchar(255)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 8	neub_id_no	varchar(255)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 9	picture	varchar(255)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 10	present_address	varchar(1000)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 11	permanent_address	varchar(1000)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 12	contact	varchar(255)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 13	email	varchar(255)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 14	join_date	varchar(255)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 15	join_time	varchar(255)	utf8_general_ci		No	None		Change	Drop
<input type="checkbox"/> 16	status	enum('active', 'inactive')	utf8_general_ci		No	None		Change	Drop

→ Department Table:

#	Name	Type	Collation	Attributes	Null	Default	Extra	Action
1	<u>dept_id</u>	int(11)			No	None	AUTO_INCREMENT	Change Drop
2	dept_title	varchar(255)	utf8_general_ci		No	None		Change Drop
3	status	enum('active', 'inactive')	utf8_general_ci		No	None		Change Drop

→ Comment Table:

#	Name	Type	Collation	Attributes	Null	Default	Extra	Action
1	<u>comment_id</u>	int(11)			No	None	AUTO_INCREMENT	Change Drop
2	name	varchar(255)	utf8_general_ci		No	None		Change Drop
3	neub_id_no	varchar(255)	utf8_general_ci		No	None		Change Drop
4	email	varchar(255)	utf8_general_ci		No	None		Change Drop
5	comment	text	utf8_general_ci		No	None		Change Drop
6	status	enum('active', 'inactive')	utf8_general_ci		No	None		Change Drop
7	time	varchar(255)	utf8_general_ci		No	None		Change Drop
8	date	varchar(255)	utf8_general_ci		No	None		Change Drop

Appendix C: To Be Determined List

<Collect a numbered list of the TBD (to be determined) references that remain in the SRS so they can be tracked to closure.>