

Project Proposal  
SE 3112 - Software Project Lab II  
Project Name: IIT Library

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## Introduction

This is a proposal report for Software Project Lab II. This project will be developed during the 5<sup>th</sup> semester of BSSE, Institute of Information Technology, Noakhali Science and Technology University from 12 June 2022 by the proposal presentation, and the final project will be delivered on 08 September 2022. Our team will work along with our regular academic courses.

## Motivation

A library is a collection of books that are accessible for use. We can borrow books and have to return them within a specific period. In our institute, we also have a seminar library. But it is a matter of regret that we don't have any automated and online library management system. Our existing library performs all operations manually and can't keep track of the books accurately. It's too difficult to find a book from the library. The solution is either we have to buy paid software or develop a web-based library system of our own.

For our team, it is the best time to utilize the period of SPL II and build a web-based library system that can save the external costs to buy expensive software and protect national resources. We will also implement a feature where a member can make a request for a book remotely. Our web-based system will show who is

the last person to take a specific book and when will return the book. The system will also store electronic copies that are permitted by the publisher.

## Objectives

Our system will fulfill the following objectives to provide a hassle-free system.

1. **Manage Membership:** Our first objective is to maintain a detailed database of the members. The system will generate a library card for each and individual authentic member of the IIT Library.
2. **Book Tracing:** Our second objective is to trace the movement of books. The location of any book at any point in time can be traced. Misplaced or missing books can be traced easily.
3. **Borrow Books:** We have to borrow new books and add them digitally. Irrelevant and outdated books are deleted.
4. **Bar-coding and Scanning:** Our system will give specific identification to each book. All books, old and new, are bar-coded based on title, author, topic, and date of publishing. The database is automatically updated when books are scanned while issuing or returning.
5. **Searching:** Our system will help both the office staff and the members to search the catalog of books in the library. The search functions can be filtered to the need of each user.
6. **Fine Calculation:** The system calculates the fine due for non-return or lost and damaged books. The members will be notified about the fines by the system.

## Target Customers

The target customers for our system are students, faculty members denoted as members in the proposal. We have a role for permitting to get the library card which will be performed by the Director of IIT, NSTU. The work of checking in or checking out and adding new books to the system will be performed by one of the staff of the office.

## Application Features & Description

1. **New Member Application:** New members can apply for a library card using the valid information required by the system and get permission to use the library.
2. **Sign-in and Sign-out:** Any member can sign in after providing valid information and sign out anytime.

3. Search book: Any member can search for a book by title, subject, author, and date of publishing.
4. Advanced Booking: Any member can make an advanced booking to take a book using our system. The member will get an online receipt which will be valid for a specific period of days. After that period the validity will be expired.
5. Member-End Information: A member can see all information of check-in and check-out of books performed by him/her and fine amount.
6. Generate Library Card: Library card will be generated by our system.
7. Verify Member: Member applications must be verified by any faculty member. For our system the Director of IIT, NSTU will permit us to generate library cards.
8. Borrow and Return Books: Members will make a request online and get an online receipt. After showing the receipt, one of the office staff will update the book data from the system and provide the book. In the same way when a member will return a book then it will be checked into the system and received by the office staff.
9. Electronic Copy of Books: Members can get electronic copies of our books too only if the copies are permitted to be distributed by the publisher.
10. Fine Calculation: A specific amount of fine will be calculated for late check-in of the book. If the book is lost or damaged, the fine amount will vary according to the price of the book.

## Models, Tools, and Resources

### Model

Our project is highly inspired by SPL I. We faced different problems with our selected model to develop our project which was an iterative process. This time, taking experience from the previous year's project, we want to implement something new and we have selected the agile model to develop this project. Agile Model break tasks into smaller iterations. The division of the entire project into smaller parts helps to minimize the project risk and to reduce the overall project delivery time requirements.

### Tools and Resources

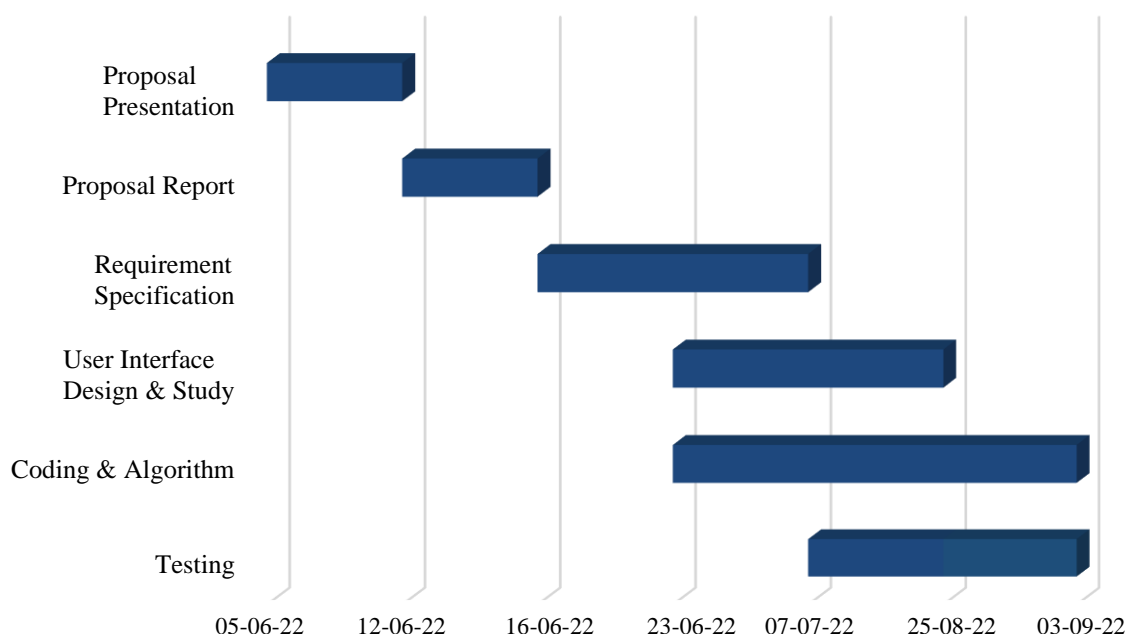
Category	Name or Description
Text Editor	Visual Studio Code
Server	Xampp

RDBMS	MySQL
Language	HTML, CSS, JavaScript, PHP, SQL
Learning Resource	<ol style="list-style-type: none"> <li>1. Head First HTML and CSS: A Learner's Guide to Creating Standards-Based Web Pages 2nd Edition by Elisabeth Robson</li> <li>2. Head First JavaScript Programming: A Brain-Friendly Guide 1st Edition by Eric Freeman</li> <li>3. PHP &amp; MySQL: Server-side Web Development by Jon Duckett</li> </ol>

## Work Distribution

Task	Members (First Name)
Proposal Presentation	Prosanto, Abdullah, Ratna
Proposal Report	Prosanto, Ratna
Requirement Specification & Analysis	Prosanto, Abdullah, Ratna
Database Design	Prosanto, Abdullah
User Interface Design & Study	Prosanto, Abdullah, Ratna
Coding & Algorithm	Prosanto, Abdullah, Ratna
Testing	Abdullah, Ratna

## Proposed Timeline



## Deliverables

- Source File
- Documentation of Software Requirements and Specification
- User Manual
- Video Tutorial of the system

## Challenges

The main challenges to face during developing this system are,

1. Defining strict rules and regulations for each operation and making accountable each member for any problems created by them.
2. Implementing a payment gateway and developing a transaction system for taking due and membership amounts from the members of our system.
3. Solving the complexity of distributing a specific book when the quantity of the book is less than the number of requests made by the library members.
4. Validate each member and check if he/she is an authentic member of IIT or not.
5. Generating library cards as soon as possible after the application form is completed by the member.
6. Tracking a book precisely and making the member responsible to keep the book safe and return before the due date.