# LIBRARY MANAGEMENT SYSTEM

## Submitted in partial fulfilment for the degree of B.Tech

**By**

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Second Year Student of

## Siliguri Institute of Technology



### Under the Supervision of

Mr. Vishal Ray
**Sikharthy Infotech Pvt. Ltd.**

# <u>Department of Computer Science Engineering</u>

Date:

I hereby forward the documentation prepared by me **Sweta Kumari** under the supervision of Mr. Vishal Ray Sir entitled **Library Management System** accepted as fulfilment of the requirement for the Degree of Bachelor of Technology (B.Tech) in **Computer Science Engineering** from **Siliguri Institute of Technology** affiliated to **Maulana Abul Kalam Azad University of Technology** (MAKAUT).

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Sweta Kumari

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**Project Guide**

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THEIS SUBMITTED IN FULFILLMENT FOR THE REQUIREMENTS FOR THE DEGREE OF

**B.Tech**

IN

COMPUTER SCIENCE ENGINEERING (AIML)

**SILIGURI INSTITUTE OF TECHNOLOGY**

**AFFILIATED TO**

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# <u>Certificate of Approval</u>

The foregoing project is hereby approved as a creditable study for the B.Tech in Computer Science Engineering and presented in a manner of satisfactory to warrant its acceptance as a prerequisite to the degree for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approved any statement made, opinion express or conclusion therein but approve this project only for the purpose for which it is submitted.

Final Examination for
Evaluation of the Project

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Signatures of Examiners

# ABSTRACT

The purpose of the project entitled as "Library Management System" is to develop a program which is user friendly simple, fast, and cost effective. It deals with the management of books and managing and updating of data associated to the same. The main function of the system is to store library details. The "Library Management System" has a borrowing section, from where users can check for availability of books. Admin can add, update or remove any book or user from admin panel.

## GitHub Repository :

https://github.com/sweta-04/Library-Management-System

# <u>ACKNOWLEDGEMENT</u>

It is a great pleasure for me to acknowledge the assistance and participation of a large number of individuals to this attempt. Our project report has been structured under the valued suggestion, support and guidance of **Mr. Vishal Ray**. Under his guidance we have accomplished the challenging task in a very short time.

Finally, we express our sincere thankfulness to our family members for inspiring me all throughout and always encouraging us.

**Sweta Kumari**
**Department of Computer Science**
**Engineering**

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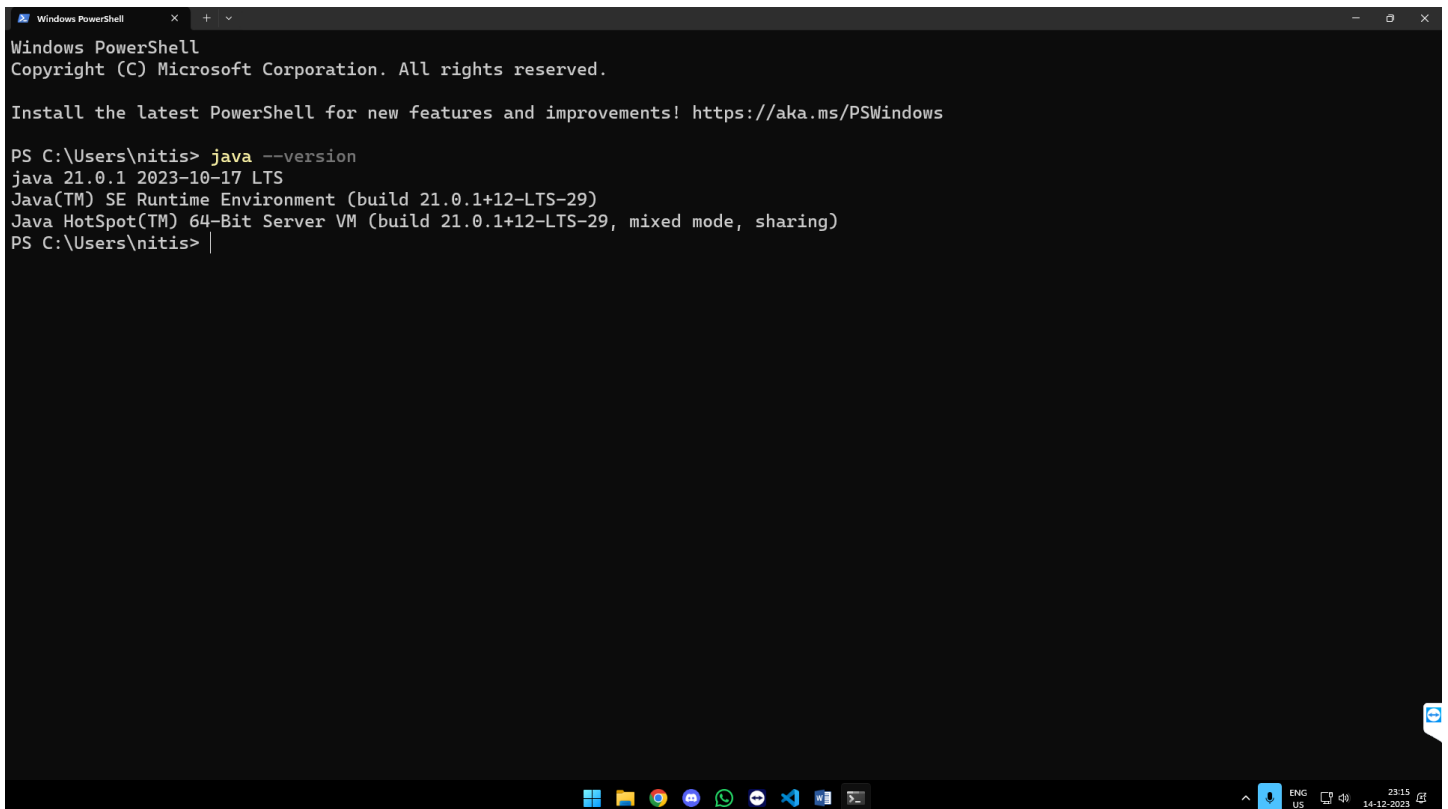
# 1. __INTRODUCTION__

Library Management System is a program created specifically for managing the library needs. This method will help admins to take charge of the library operations such as adding books, updating user details and changing availability of books through means of a simple software.
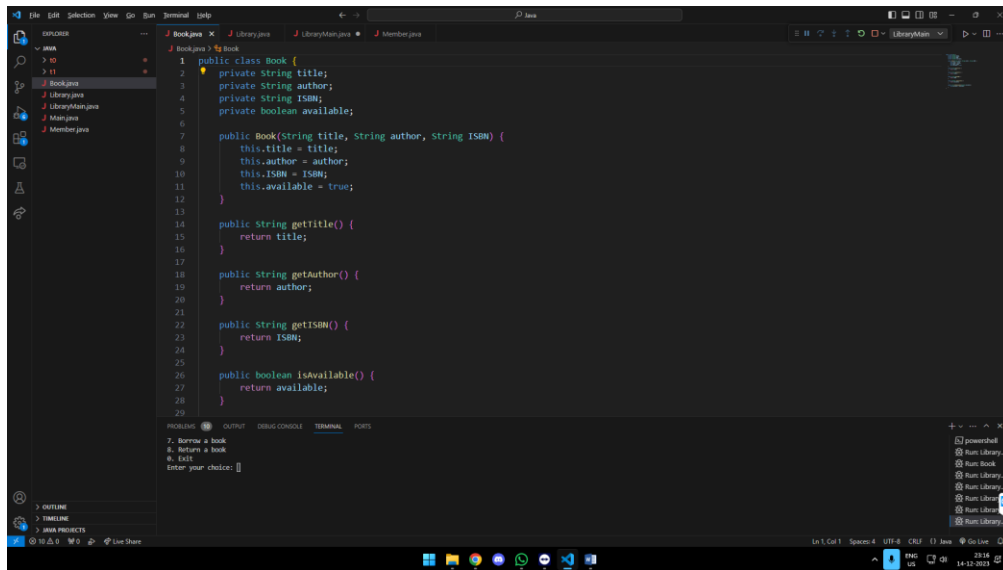
## 2.1 __JAVA__

We used java 21, in this project we learned java datatypes, methods, class, sorting, OOPs concept, loops and many elements in our java program.

## 2.2 IDE

We used Visual Studio Code as the IDE for coding this project.



## 3. Functionality of the System

The program can be used for accessing the total details of the books in the library, managing or creating users and also for updating the existing data.

# 4. **Features**

It comes with all necessary features for a library management need, which includes creating, retrieving, updating and deleting data.
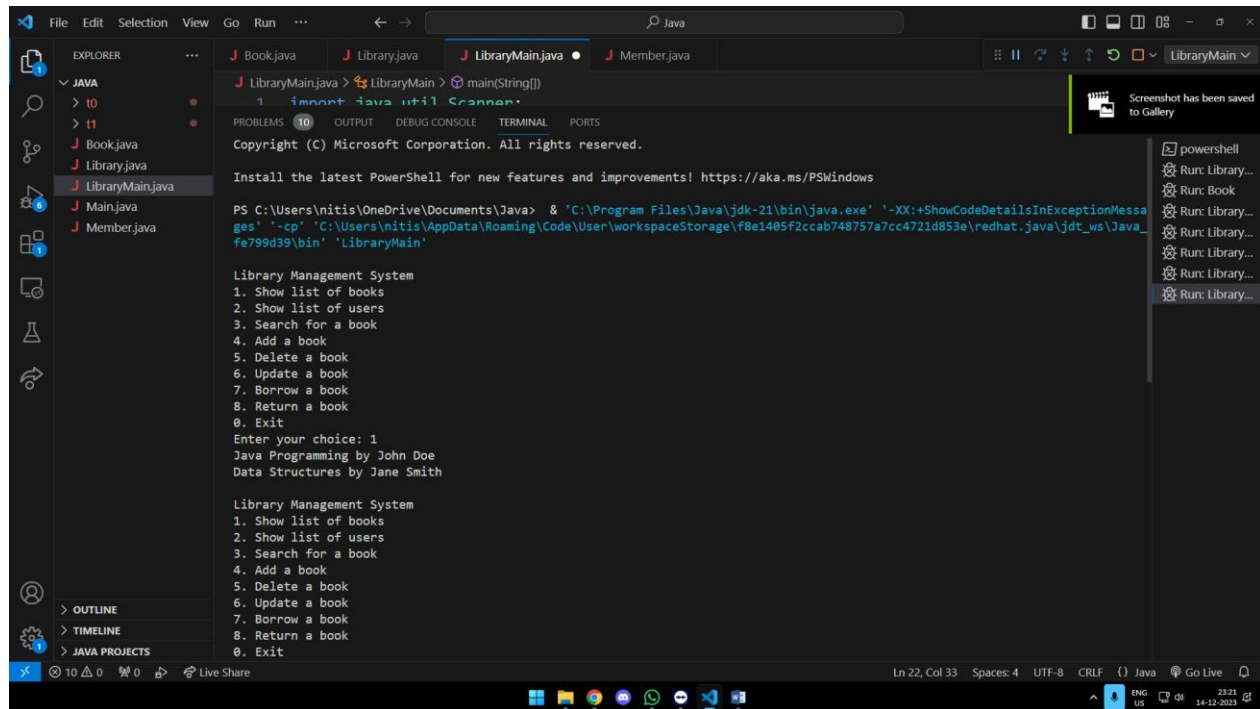


## 4.1 Secure System Access
At any instance, the person managing the program has to log in with proper credentials, only then he/she will be granted access to the admin panel.
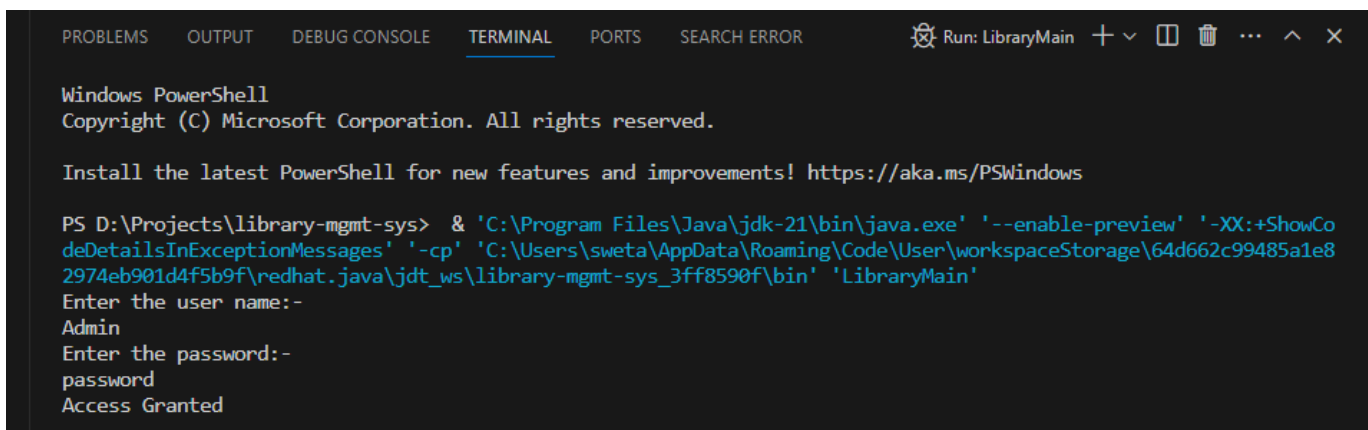
## 4.2 Searching for a Book

The Search feature shows the results of the book for its presence in the library and also shows if the book is available for borrowing or not.

```
Library Management System
1. Show list of books
2. Show list of users
3. Search for a book
4. Add a book
5. Delete a book
6. Update a book
7. Borrow a book
8. Return a book
9. List the Authors
0. Exit
Enter your choice: 3
Enter ISBN to search for a book: 12345
Book found: Python Basics by Raghuvind Kumar
```

## 4.3 Add a Book

Apart from the books whose data has been pre feeded into the program, the admin can also add a new book or even delete a book from the collection.

```
Library Management System
1. Show list of books
2. Show list of users
3. Search for a book
4. Add a book
5. Delete a book
6. Update a book
7. Borrow a book
8. Return a book
9. List the Authors
0. Exit
Enter your choice: 4
Enter book title: Life Lessons
Enter author: Sweta Kumari
Enter ISBN: 44233
Book added successfully.
```

## 4.4 Updating Existing Details

The details of the books can be updated as per as the requirements.

```
Enter your choice: 6
Enter ISBN to update a book: 44233
Enter new title: Thorough Life Lessons
Enter new author: Sweta KS
Book updated successfully.
```

## 4.5 Borrow/Return Books

Library members can borrow books from the library, and that data can be updated through this program. Admin can also see which member has borrowed which book.

```
Library Management System
1. Show list of books
2. Show list of users
3. Search for a book
4. Add a book
5. Delete a book
6. Update a book
7. Borrow a book
8. Return a book
9. List the Authors
0. Exit
Enter your choice: 7
Enter member ID: M001
Enter ISBN of the book to borrow: 12345
Sweta has successfully borrowed Python Basics
```

```
Library Management System
1. Show list of books
2. Show list of users
3. Search for a book
4. Add a book
5. Delete a book
6. Update a book
7. Borrow a book
8. Return a book
9. List the Authors
0. Exit
Enter your choice: 8
Enter member ID: M001
Sweta has successfully returned Python Basics
```

# 5. SYSTEM ANALYSIS

## 5.1 IDENTIFICATION OF NEED

At the behind of any project, there are mainly two important parts i.e. Proper Plans and Right execution of those plans. This is the key of success. That will always help to execute the ideas.

Here that same process we followed during that development. We made the plan of making this **Library Management System Site** to make it easy for the admins to hold control over the library data.

## 5.2 PRELIMINARY INVESTIGATION

Preliminary investigations involve collecting information that helps to evaluate the merits of a project and make an informed judgement about the feasibility of the proposed project.

While we planned about "LIBRARY MANAGEMENT SYSTEM", on the Internet a lot of consideration was given to all these issues. Extensive thought was given to the various minimum-offering levels that can be provided against the possible returns from such offerings.

## 5.3 FEASIBILITY STUDY

The feasibility of the project is analysed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to both the public and the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

### 5.3.1 Economic Feasibility

This study is carried out to check the economic impact on the system of the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified.

### 5.3.2 Technical Feasibility

This study is carried out to check the technical feasibility i.e. the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes for implementing this system.

### 5.3.3 Operational Feasibility

 The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it.

## 6. Project Planning and Scheduling

Scheduling is an important activity of any project management. Scheduling a software project involves first breaking down an entire problem into a logical set of tasks which would be assigned to developers.
In order to Schedule the "LIBRARY MANAGEMENT SYSTEM" we have to do the following:
▪ Identify the tasks needed to complete the project.
▪ Determine the dependency among different tasks.
▪ Establish the most likely estimates for the duration of the identified tasks.
▪ Plan the starting and ending dates for various tasks.
▪  Determine the critical path i.e. the chain of tasks that determine the duration of the project.

# 7. <u>Functional Requirement of the System</u>

Being a language based solution the first and foremost thing that starts acquiring importance in this project is the way the complete package needs to be configured. Language based solutions by virtue of their designs are mostly thin client solutions (unless they are heavy on memory). To run this kind of a solution properly it is necessary that the IDE configurations are properly worked out. It is the machine that will have to ultimately scale up as and when the numbers of users start increasing.

## 7.1 HARDWARE REQUIREMENTS

The minimum Hardware requirements for the application to run smoothly should have the following configuration:

| Processor | Intel Core 2 DUO |
|:---:|:---:|
| RAM | 1GB or more |
| HDD | 2GB or more |

## 7.2 SOFTWARE SPECIFICATIONS

The minimum software requirements are as follows:

| Operating System | Windows / Linux |
|:---:|:---:|
| Language Used | Java Language |
| Working IDE | Visual Studio Code |

## 8. **<u>CONCLUSION</u>**

The project "LIBRARY MANAGEMENT SYSTEM" has been built for easy administration for the library workings. Admin can have complete control over all the activities that go on through out the library, ranging rom registration of books, members, lending and borrowing of books. Users can access their stud account and see their stats and also a list of books they have borrowed and the deadline by which they need to submit it back to the library. This application eliminates the need for register and pen/paper work needed to maintain and keep track of the library activities.

## **9.<u>REFERENCES</u>**

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3. https://www.programiz.com/