

Library Management System

Project Report

Introduction

The Library Management System is designed to automate the operations of a library, providing functionalities for book management, student registration, book issuance, and inventory tracking. This system offers an efficient alternative to traditional manual methods, improving accuracy, speed, and overall user experience.

Database Design

Tables

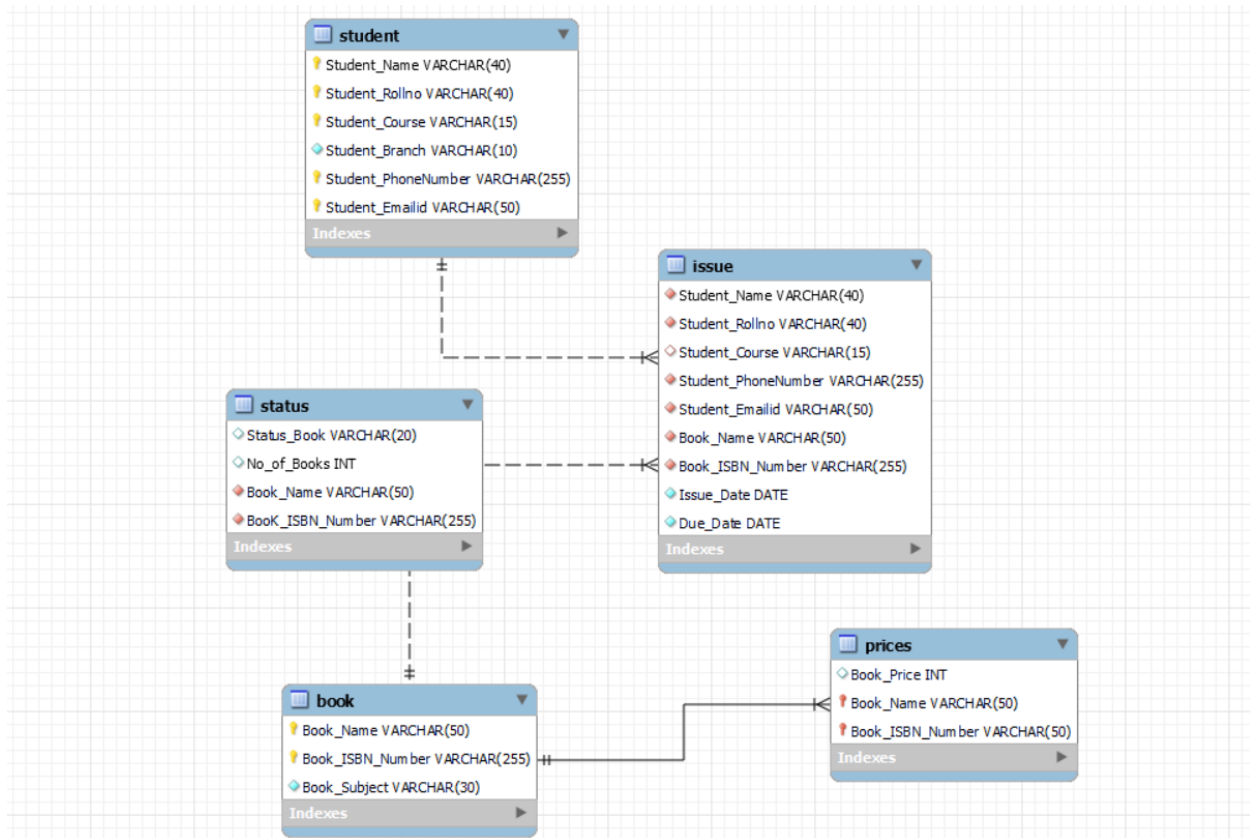
1. Student Table
 - Stores student details such as name, roll number, course, branch, phone number, and email ID.
2. Book Table
 - Contains information about books including name, ISBN number, and subject.
3. Issue Table
 - Tracks book issuance details, linking students to the books they have borrowed.
4. Prices Table
 - Stores book prices based on their name and ISBN number.
5. Status Table
 - Manages the availability status and quantity of books in the library.

Relationships

- The **Issue** table has foreign key relationships with the **Student** and **Book** tables to ensure data integrity.

- The **Prices** and **Status** tables are related to the **Book** table, providing additional information about book prices and availability.

Entity Relationship



Data Population

1. Student Table: Populated with sample student data.
2. Book Table: Populated with various book details.
3. Issue Table: Contains records of books issued to students.
4. Prices Table: Lists the prices of different books.
5. Status Table: Tracks the availability status and quantity of books.

Functionalities

1. Student Management

- Registration of new students.
- Update and deletion of student records.

2. Book Management

- Addition of new books.
- Update and deletion of book records.

3. Book Issuance

- Issue books to students.
- Return books and update the status.

4. Inventory Tracking

- Monitor the availability and quantity of books in the library.

Queries

- Retrieve all student records.
- Retrieve all book details.
- Retrieve all issued books.
- Retrieve book prices.
- Retrieve available books.

Outputs

- **Student Table**

	Student_Name	Student_Rollno	Student_Course	Student_Branch	Student_PhoneNumber	Student_Emailid
►	Aditya	CSE325	B.Tech	CSE	8967407565	aditya@gmail.com
	Animesh	M055	MGT	Finance	8487407565	animesh@gmail.com
	Apurva	M456	MGT	HR	8487407565	apurva@gmail.com
	Gaurav	CSE355	B.Tech	CSE	8987407565	gauravkumar1661635@gmail.com
	Himanshu	ME009	B.Tech	MECH	8987407525	himanshu@gmail.com
	Ishwar	ECE311	B.Tech	ECE	8987407515	ishwar@gmail.com
	Mahesh	CSE895	B.Tech	CSE	8987407565	mahesh@gmail.com
	Mitesh	CSE315	B.Tech	CSE	8986407565	mitesh@gmail.com
	Mithlesh	IT355	B.Tech	IT	8947407565	mithlesh@gmail.com
	Rajesh	EEE345	B.Tech	EEE	8287407565	rajesh@gmail.com

Books Table

Result Grid		Filter Rows:	Edit:	Export/Import:	Wrap Cell Content:
Book_Name	Book_ISBN_Number	Book_Subject			
A First Book of C++	978-1111531003	CSE			
A Handbook on Electronics Engineering	978-9393165473	ECE			
A Tb Of Elect. Techn. Vol Ii	978-8121924900	EEE			
A text book on Engineering Mechanics	978-0521558815	MECH			
A Textbook of Java Programming	978-9389520910	CSE			
C++ Programming Language	978-0275967307	CSE			
Computer Networks 5/e 5th Edition,	978-9332518742	CSE			
Data Communications and Networking	978-9355320940	CSE			
Data Structures And Algorithms Made Easy	978-8193245286	CSE			
DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2	CSE			
Database System Concepts 7th Edition	978-9390727506	CSE			
Electrical Technology	978-8121924405	EEE			
Electrical Technology 1	978-8121924405	EEE			
Fundamentals Of Financial Management-7...	978-9389811261	Finance			
Human Resource Management 10th Edition	978-9355323675	HR			
Microprocessors & Microcontrollers	978-81-933409-1-2	ECE			
Parallel Computer Organization and Design	978-0521886758	CSE			
Supply Chain Management 6/e	978-9332548237	Supply Chain			
The Principles of Quantum Mechanics	978-1607965602	MECH			

Book Issue Table

Student_Name	Student_Rolno	Student_Course	Student_PhoneNumber	Student_Emailid	Book_Name	Book_ISBN_Number	Issue_Date	Due_Date
Gaurav	CSE355	CSE	8987407565	gauravkumar1661635@gmail.com	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2	2024-04-02	2024-04-19
Ishwar	ECE311	ECE	8987407515	ishwar@gmail.com	Microprocessor and MicroController	978-81-933409-1-2	2023-12-28	2024-01-21
Rajesh	EEE345	EEE	83874075665	rajesh@gmail.com	Electrical Technology	978-8121924405	2023-10-20	2023-12-31
Mitesh	CSE315	CSE	8987407565	mitesh@gmail.com	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2	2024-02-12	2024-02-01
Mithlesh	IT355	IT	8987407565	mithlesh@gmail.com	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2	2024-01-23	2024-02-10
Himanshu	ME009	MECH	8987407565	himanshu@gmail.com	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2	2024-02-01	2024-02-23
Animesh	M055	MGT	8987407565	animesh@gmail.com	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2	2023-09-12	2024-09-28
Aditya	CSE325	CSE	8987407565	aditya@gmail.com	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2	2024-11-20	2024-12-10
Shubham	M908	MGT	8987407565	shubham@gmail.com	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2	2024-03-20	2024-04-19
Aditi	ME111	MECH	8987407565	aditi@gmail.com	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2	2024-02-11	2024-02-25
Aradhya	M322	MGT	8987407565	aradhya@gmail.com	Supply Chain Management	978-9332548237	2024-01-21	2024-02-13
Niraj	ECE240	ECE	8987407565	niraj@gmail.com	Microprocessor and MicroController	978-81-933409-1-2	2024-02-17	2024-03-11
Dev	CSE351	CSE	8987487565	dev@gmail.com	C++ Programming Languages	978-0275967307	2023-12-02	2023-12-20
Gaurav	CSE355	CSE	8987407565	gauravkumar1661635@gmail.com	Data Communications and Networ...	978-9355320940	2024-04-02	2024-04-19
Ishwar	ECE311	ECE	8987407515	ishwar@gmail.com	A HandBooks on Electronics Engin...	978-9393165473	2023-12-28	2024-01-21
Rajesh	EEE345	EEE	83874075665	rajesh@gmail.com	Computer Organization And Design	978-0521886758	2023-10-20	2023-12-31
Mitesh	CSE315	CSE	8987407565	mitesh@gmail.com	A Textbook Of Java Programming	978-9332548237	2024-02-12	2024-02-01

Book Price Table

Book_Price	Book_Name	Book_ISBN_Number
943	A First Book of C++	978-1111531003
650	A Handbook on Electronics Engineering	978-9393165473
1010	A Tb Of Elect. Techn. Vol Iii	978-8121924900
450	A text book on Engineering Mechanics	978-0521558815
870	A Textbook of Java Programming	978-9389520910
780	C++ Programming Language	978-0275967307
720	Computer Networks 5/e 5th Edition,	978-9332518742
333	Data Communications and Networking	978-9355320940
673	Data Structures And Algorithms Made Easy	978-8193245286
860	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2
893	Database System Concepts 7th Edition	978-9390727506
710	Electrical Technology	978-8121924405
933	Electrical Technology 1	978-8121924405
565	Fundamentals Of Financial Management-7...	978-9389811261
750	Human Resource Management 10th Edition	978-9355323675
490	Microprocessors & Microcontrollers	978-81-933409-1-2
730	Parallel Computer Organization and Design	978-0521886758
760	Supply Chain Management 6/e	978-9332548237
980	The Principles of Quantum Mechanics	978-1607965602
NULL	NULL	NULL

- **Book Status Table**

	Status_Book	No_of_Books	Book_Name	Book_ISBN_Number
▶	Available	23	Microprocessors & Microcontrollers	978-81-933409-1-2
	Available	10	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2
	Not-Available	11	C++ Programming Language	978-0275967307
	Available	20	Human Resource Management 10th Edition	978-9355323675
	Available	5	Fundamentals Of Financial Management-7th Edi...	978-9389811261
	Not-Available	23	A First Book of C++	978-1111531003
	Available	13	Parallel Computer Organization and Design	978-0521886758
	Not-Available	22	Computer Networks 5/e 5th Edition,	978-9332518742
	Available	12	Database System Concepts 7th Edition	978-9390727506
	Available	50	Data Communications and Networking	978-9355320940
	Available	45	Electrical Technology	978-8121924405
	Not-Available	2	A Tb Of Elect. Techn. Vol Iii	978-8121924900
	Not-Available	3	The Principles of Quantum Mechanics	978-1607965602
	Not-Available	4	Data Structures And Algorithms Made Easy	978-8193245286
	Available	44	A Handbook on Electronics Engineering	978-9393165473

- **Availability of Books Which books are available**

	Status_Book	No_of_Books	Book_Name	Book_ISBN_Number
▶	Available	23	Microprocessors & Microcontrollers	978-81-933409-1-2
	Available	10	DATABASE MANAGEMENT SYSTEM	978-93-86532-86-2
	Available	20	Human Resource Management 10th Edition	978-9355323675
	Available	5	Fundamentals Of Financial Management-7th Edi...	978-9389811261
	Available	13	Parallel Computer Organization and Design	978-0521886758
	Available	12	Database System Concepts 7th Edition	978-9390727506
	Available	50	Data Communications and Networking	978-9355320940
	Available	45	Electrical Technology	978-8121924405
	Available	44	A Handbook on Electronics Engineering	978-9393165473

Conclusion

The Library Management System offers a comprehensive solution for managing library resources efficiently. It streamlines library operations, enhances user experience, and ensures accurate tracking of books and student information. Future enhancements can include features like fine calculation, reservation system, and advanced search capabilities.

This report provides an overview of the library management system, highlighting its design, functionalities, and data population. It can be expanded further with additional details, analysis, and screenshots to provide a more comprehensive view of the project.