

Hackathon 1st Library Management System

-- Books Table

```
CREATE TABLE Books (  
    BookID INT PRIMARY KEY AUTO_INCREMENT,  
    ISBN VARCHAR(20) UNIQUE NOT NULL,  
    Title VARCHAR(100) NOT NULL,  
    Author VARCHAR(100) NOT NULL,  
    Genre VARCHAR(50),  
    Availability BOOLEAN DEFAULT TRUE  
);
```

-- Users Table

```
CREATE TABLE Users (  
    UserID INT PRIMARY KEY AUTO_INCREMENT,  
    Name VARCHAR(100) NOT NULL,  
    Email VARCHAR(100) UNIQUE NOT NULL  
);
```

-- Transactions Table

```
CREATE TABLE Transactions (  
    TransactionID INT PRIMARY KEY AUTO_INCREMENT,  
    UserID INT,  
    BookID INT,  
    IssueDate DATE,
```

```
ReturnDate DATE,

FOREIGN KEY (UserID) REFERENCES Users(UserID),

FOREIGN KEY (BookID) REFERENCES Books(BookID)

);

// Sample datas

INSERT INTO Books (ISBN, Title, Author, Genre, Availability)

VALUES

('978-3-16-148410-0', 'The Alchemist', 'Paulo Coelho', 'Fiction', TRUE),

('978-0-7432-7356-5', 'Angels and Demons', 'Dan Brown', 'Thriller', TRUE);

INSERT INTO Users (Name, Email)

VALUES

('Arjun Kumar', 'arjun@example.com'),

('divya Akash', 'divya@example.com'),

('Rajaram', 'rajaram@example.com'),

('Deepak Ramesh', 'deepak@example.com'),

('Vikram', 'vikram@example.com'),

('Saroja Devi', 'saroja@example.com'),

('Hari Chandran', 'hari@example.com'),

('Meerasekaran', 'meera@example.com'),

('Sundar Ramasamy', 'sundar@example.com'),

('Veera Ragupathy', 'ragupathy@example.com');

INSERT INTO Transactions (UserID, BookID, IssueDate, ReturnDate)

VALUES

(1, 1, '2025-03-01', '2025-03-10'),

(2, 2, '2025-03-05', NULL);
```

```
// Fetch Books by Genre
```

```
SELECT * FROM Books WHERE Genre = 'Fiction';
```

```
// Fetch Available Books
```

```
SELECT * FROM Books WHERE Availability = TRUE;
```

```
// Track Overdue Books
```

```
SELECT t.TransactionID, u.Name, b.Title, t.IssueDate, t.ReturnDate  
FROM Transactions t  
JOIN Users u ON t.UserID = u.UserID  
JOIN Books b ON t.BookID = b.BookID  
WHERE t.ReturnDate IS NULL AND t.IssueDate < CURDATE() - INTERVAL 14 DAY;
```

```
// User Borrowing History
```

```
SELECT u.Name, b.Title, t.IssueDate, t.ReturnDate  
FROM Transactions t  
JOIN Users u ON t.UserID = u.UserID  
JOIN Books b ON t.BookID = b.BookID  
WHERE u.UserID = 1;
```

```
// Generate Report on Late Returns
```

```
SELECT u.Name, b.Title, DATEDIFF(CURDATE(), t.IssueDate) AS DaysLate
```

FROM Transactions t

JOIN Users u ON t.UserID = u.UserID

JOIN Books b ON t.BookID = b.BookID

WHERE t.ReturnDate IS NULL AND DATEDIFF(CURDATE(), t.IssueDate) > 14;