

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

('Akash Kumar', 'akash@example.com'),

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

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

('Deepika Ramesh', 'deepika@example.com'),

('Duraipandi', 'Duraipand@example.com'),

('Eswaran', 'Eswaran @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;
```