**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

('Arun Kumar', 'arun@example.com'),

('Priya Ramesh', 'priya@example.com'),

('Karthik Raja', 'karthik@example.com'),

('Deepa Suresh', 'deepa@example.com'),

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

('Anjali Devi', 'anjali@example.com'),

('Ravi Chandran', 'ravi@example.com'),

('Meera Venkat', 'meera@example.com'),

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

('Lakshmi Narayan', 'lakshmi@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;