

## MySQL: Library Management System

-- Create Database

```
CREATE DATABASE LibraryDB;  
USE LibraryDB;
```

-- Create Books Table

```
CREATE TABLE Books (  
    book_id INT AUTO_INCREMENT PRIMARY KEY,  
    title VARCHAR(150) NOT NULL,  
    author VARCHAR(100) NOT NULL,  
    year_published YEAR,  
    available_copies INT DEFAULT 1  
);
```

-- Create Members Table

```
CREATE TABLE Members (  
    member_id INT AUTO_INCREMENT PRIMARY KEY,  
    name VARCHAR(100) NOT NULL,  
    email VARCHAR(100) UNIQUE,  
    phone VARCHAR(20)  
);
```

-- Create BorrowRecords Table

```
CREATE TABLE BorrowRecords (  
    borrow_id INT AUTO_INCREMENT PRIMARY KEY,  
    book_id INT,  
    member_id INT,  
    borrow_date DATE NOT NULL,  
    return_date DATE,  
    FOREIGN KEY (book_id) REFERENCES Books(book_id),  
    FOREIGN KEY (member_id) REFERENCES Members(member_id)  
);
```

-- Insert Sample Data into Books

```
INSERT INTO Books (title, author, year_published, available_copies) VALUES  
( 'Introduction to Databases', 'John Smith', 2015, 3),  
( 'Learning MySQL', 'Anna Brown', 2018, 2),  
( 'Advanced PHP Programming', 'David White', 2020, 4);
```

-- Insert Sample Data into Members

```
INSERT INTO Members (name, email, phone) VALUES  
( 'Alice Johnson', 'alice@example.com', '233501234567'),  
( 'Bob Anderson', 'bob@example.com', '233509876543'),  
( 'Cynthia Lee', 'cynthia@example.com', '233502345678');
```

-- Insert Sample Borrow Records

```
INSERT INTO BorrowRecords (book_id, member_id, borrow_date, return_date)
VALUES
(1, 1, '2025-08-01', '2025-08-15'),
(2, 2, '2025-08-05', NULL), -- Not yet returned
(3, 3, '2025-08-10', '2025-08-20');
```