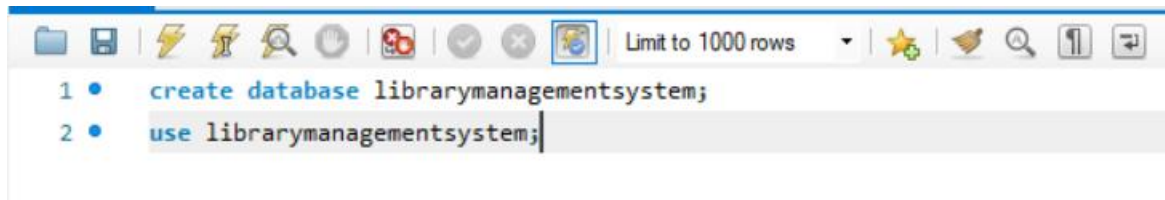


**Assignment 2:** Design a database schema for a library system, including tables, fields, and constraints like NOT NULL, UNIQUE, and CHECK. Include primary and foreign keys to establish relationships between tables.

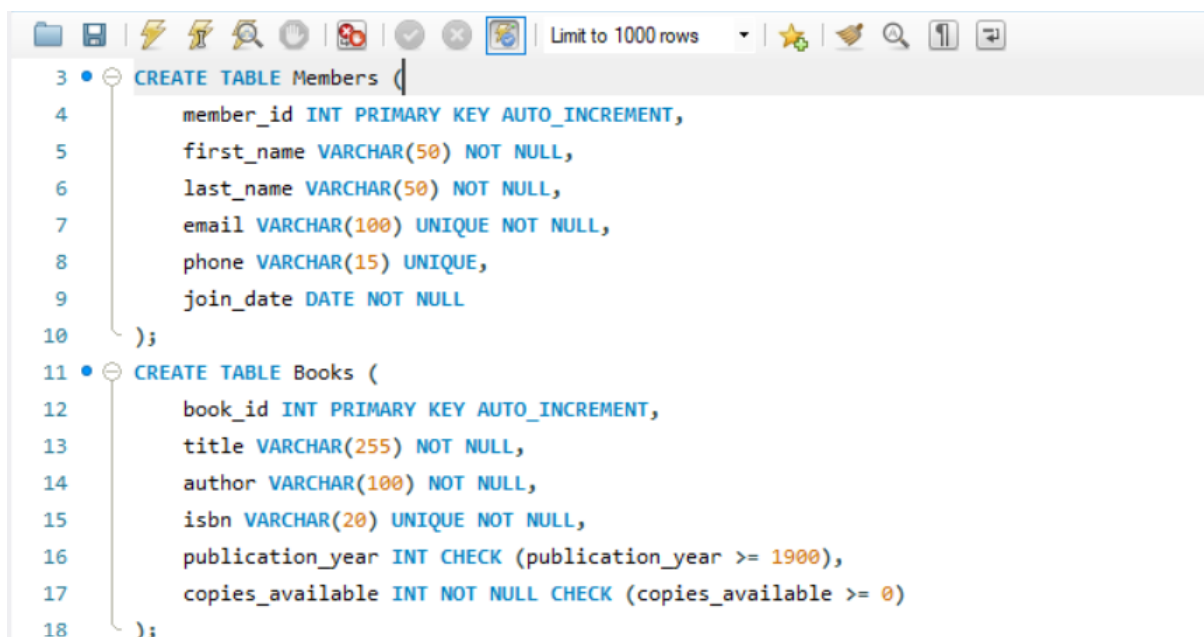
**Step 1 :** Create Database.



A screenshot of a database management tool's SQL editor. The toolbar at the top includes icons for file operations, execution, and search. The text area contains two SQL statements: 'create database librarymanagementsystem;' and 'use librarymanagementsystem;'. The second statement is currently selected and highlighted.


```
1 • create database librarymanagementsystem;
2 • use librarymanagementsystem;
```

**Step 2 :** Create Members, Books, Borrowings & Staff tables.



A screenshot of a database management tool's SQL editor showing the creation of two tables. The first table, 'Members', has columns for member\_id (primary key, auto-increment), first\_name, last\_name, email (unique), phone (unique), and join\_date. The second table, 'Books', has columns for book\_id (primary key, auto-increment), title, author, isbn (unique), publication\_year (with a check constraint for years 1900 and above), and copies\_available (with a check constraint for values greater than or equal to 0).

```
3 • CREATE TABLE Members (
4     member_id INT PRIMARY KEY AUTO_INCREMENT,
5     first_name VARCHAR(50) NOT NULL,
6     last_name VARCHAR(50) NOT NULL,
7     email VARCHAR(100) UNIQUE NOT NULL,
8     phone VARCHAR(15) UNIQUE,
9     join_date DATE NOT NULL
10 );
11 • CREATE TABLE Books (
12     book_id INT PRIMARY KEY AUTO_INCREMENT,
13     title VARCHAR(255) NOT NULL,
14     author VARCHAR(100) NOT NULL,
15     isbn VARCHAR(20) UNIQUE NOT NULL,
16     publication_year INT CHECK (publication_year >= 1900),
17     copies_available INT NOT NULL CHECK (copies_available >= 0)
18 );
```



Limit to 1000 rows

```
19 • CREATE TABLE Borrowings (  
20     borrowing_id INT PRIMARY KEY AUTO_INCREMENT,  
21     member_id INT NOT NULL,  
22     book_id INT NOT NULL,  
23     borrow_date DATE NOT NULL,  
24     return_date DATE,  
25     FOREIGN KEY (member_id) REFERENCES Members(member_id) ON DELETE CASCADE,  
26     FOREIGN KEY (book_id) REFERENCES Books(book_id) ON DELETE CASCADE  
27 );  
28 • CREATE TABLE Staff (  
29     staff_id INT PRIMARY KEY AUTO_INCREMENT,  
30     first_name VARCHAR(50) NOT NULL,  
31     last_name VARCHAR(50) NOT NULL,  
32     email VARCHAR(100) UNIQUE NOT NULL,  
33     phone VARCHAR(15) UNIQUE,  
34     role ENUM('Librarian', 'Assistant') NOT NULL,  
35     hire_date DATE NOT NULL  
36 );
```