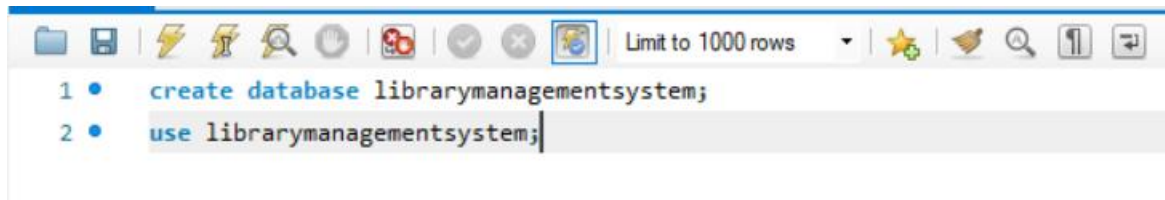


Assignment 4: Write SQL statements to CREATE a new database and tables that reflect the library schema you designed earlier. Use ALTER statements to modify the table structures and DROP statements to remove a redundant table.

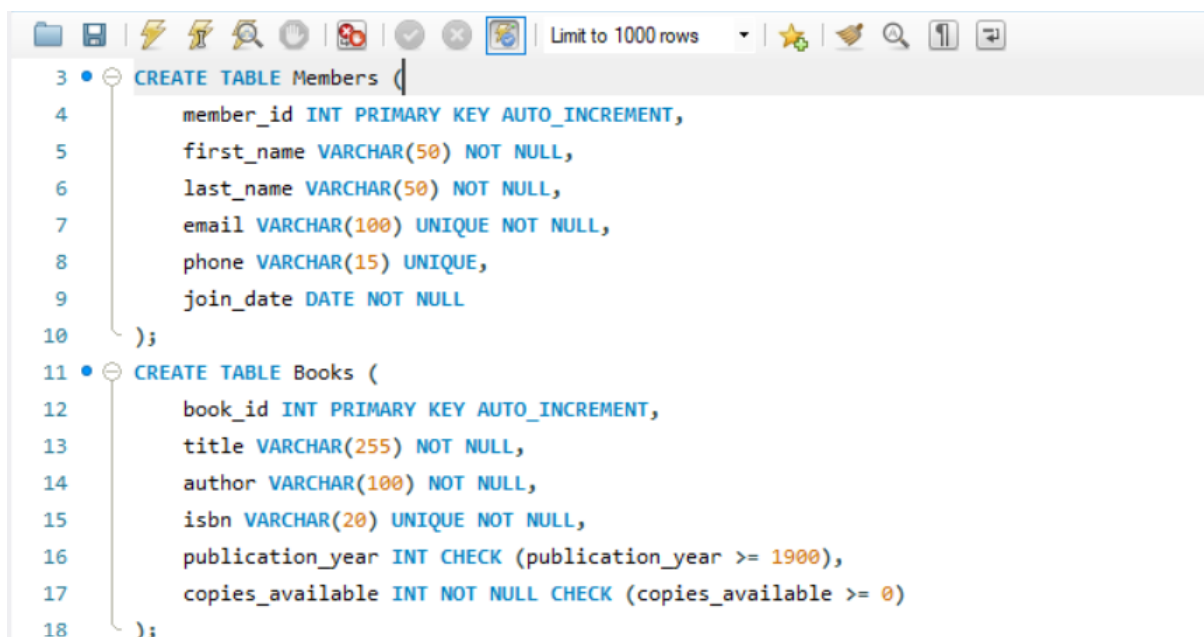
Step 1 : Create Database.



A screenshot of a SQL IDE interface. The toolbar at the top includes icons for file operations, execution, and search. A dropdown menu shows 'Limit to 1000 rows'. The SQL editor contains two lines of code:

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

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



A screenshot of a SQL IDE interface showing the creation of two tables. The toolbar and 'Limit to 1000 rows' dropdown are visible. The SQL editor contains the following code:

```
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 );
```

```
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 );
```

Step 3 : Modify the Table Structures Using ALTER.

```
40 • ALTER TABLE Members ADD COLUMN membership_type ENUM('Regular', 'Premium') NOT NULL DEFAULT 'Regular';  
41 • ALTER TABLE Books MODIFY title VARCHAR(300) NOT NULL;  
42 • ALTER TABLE Books ADD INDEX idx_isbn (isbn);  
43 • ALTER TABLE Staff ADD COLUMN salary DECIMAL(10,2) NOT NULL CHECK (salary >= 2000);  
44  
45
```

Step 4: Drop a Redundant Table.

```
44 • DROP TABLE IF EXISTS Staff;  
45  
46
```