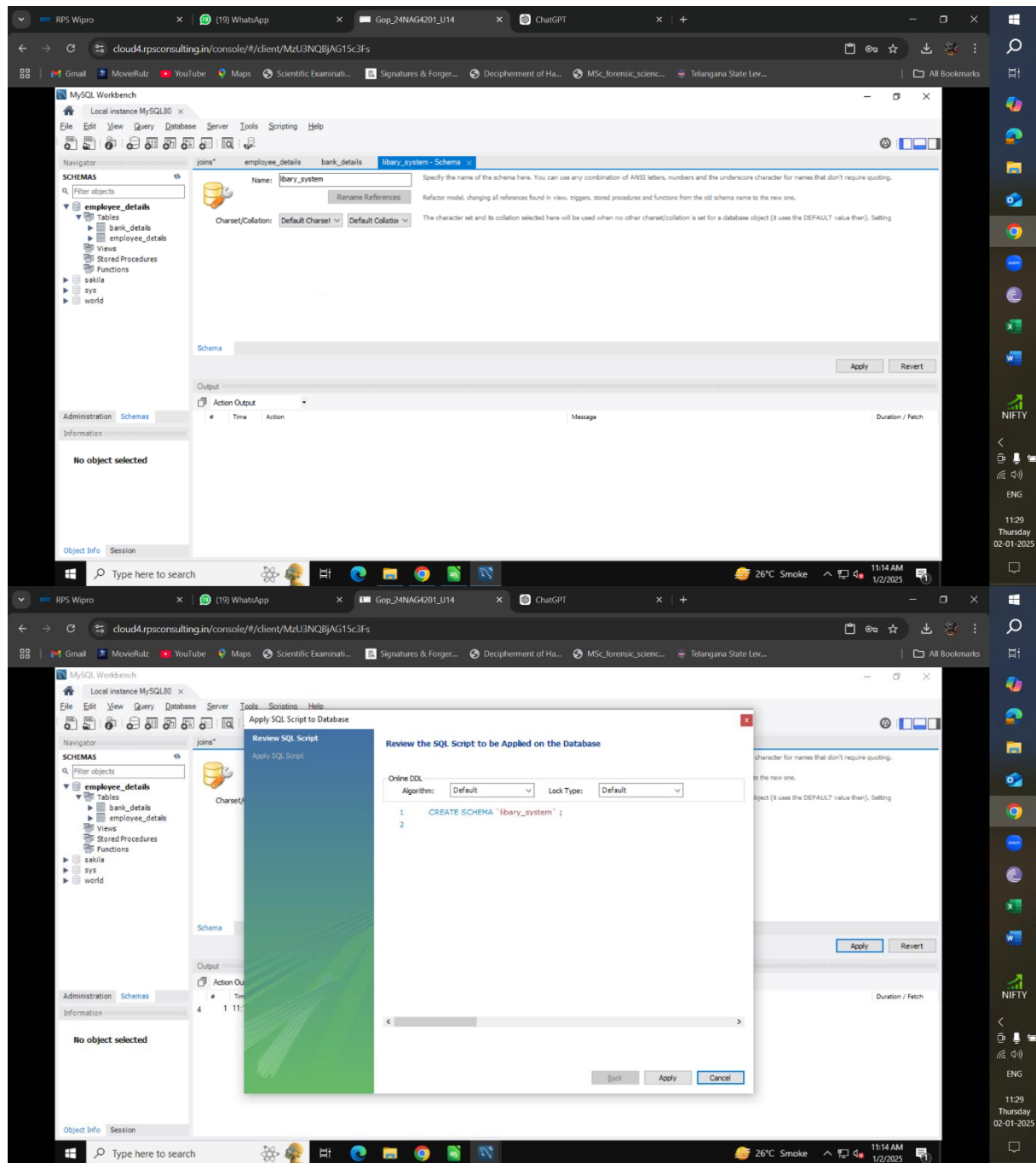
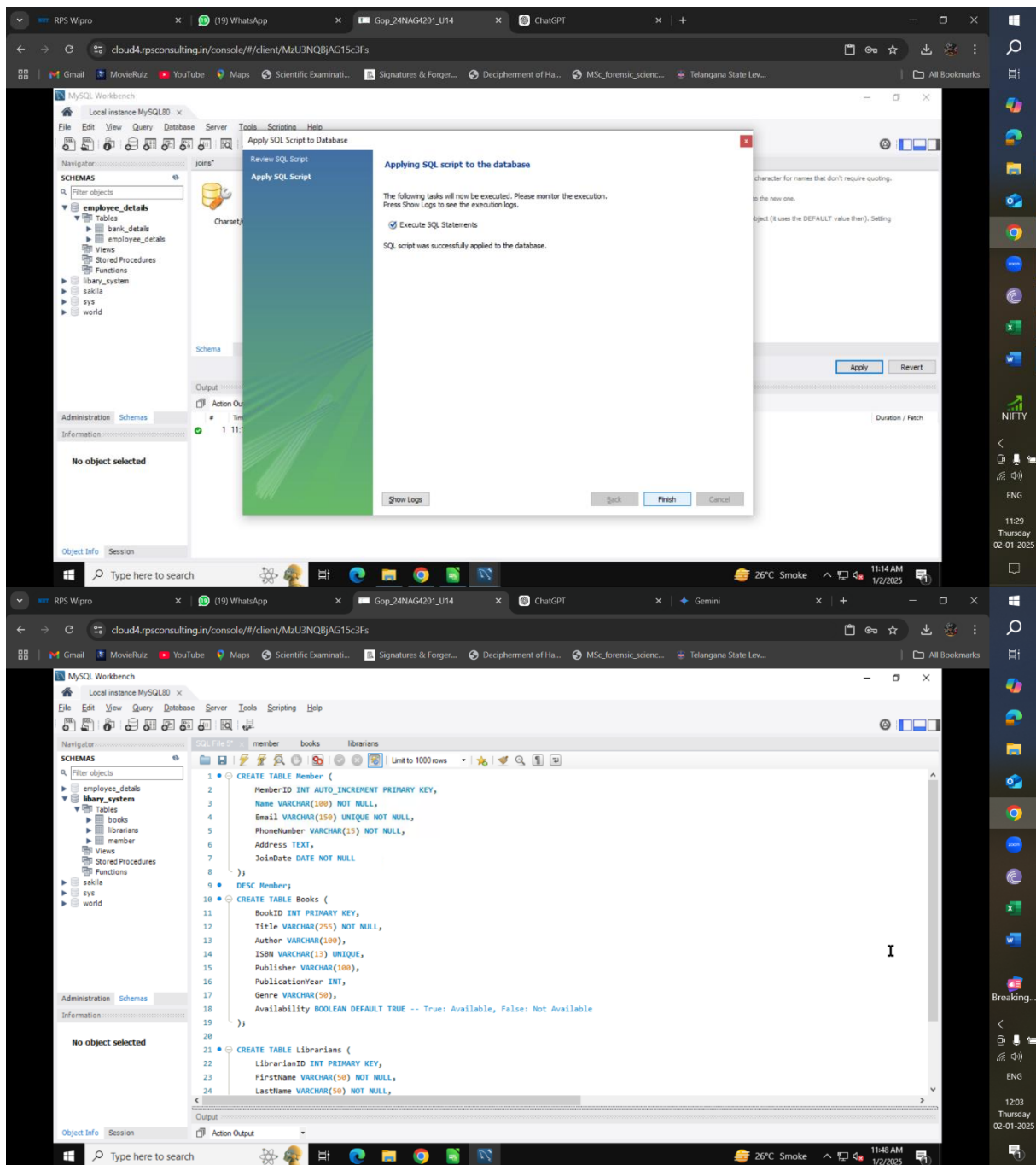


Write SQL statements to CREATE a new database and tables that reflect the library schema you designed earlier. Use ALTER statements to modify the table structures and DROP statements to remove a redundant table





MySQL Workbench interface showing a local instance of MySQL80. The Navigator pane on the left displays the database schema, including tables like employee\_details, library\_system, member, books, and librarians. The main editor displays SQL code for creating tables and inserting data.

The SQL code in the editor is as follows:

```
7 JoinDate DATE NOT NULL
8 );
9
10 DESC Member;
11
12 CREATE TABLE Books (
13   BookID INT PRIMARY KEY,
14   Title VARCHAR(255) NOT NULL,
15   Author VARCHAR(100),
16   ISBN VARCHAR(13) UNIQUE,
17   Publisher VARCHAR(100),
18   PublicationYear INT,
19   Genre VARCHAR(50),
20   Availability BOOLEAN DEFAULT TRUE -- True: Available, False: Not Available
21 );
22
23 CREATE TABLE Librarians (
24   LibrarianID INT PRIMARY KEY,
25   FirstName VARCHAR(50) NOT NULL,
26   LastName VARCHAR(50) NOT NULL,
27   EmployeeID INT UNIQUE,
28   Department VARCHAR(50)
29 );
```

The bottom pane shows the Output window with the following SQL query and its results:

```
1 SELECT * FROM library_system.member;
2 INSERT INTO Member (Name, Email, PhoneNumber, Address, JoinDate)
3 VALUES
4   ('John Doe', 'john.doe@example.com', '1234567890', '123 Main St', '2023-11-22'),
5   ('Jane Smith', 'jane.smith@example.com', '9876543210', '456 Oak Ave', '2023-12-05'),
6   ('David Lee', 'david.lee@example.com', '5551234567', '789 Pine Rd', '2023-11-15');
```

The Output window displays the results of the SQL query, showing columns: #, Time, Action, Message, and Duration / Fetch.

MySQL Workbench interface showing a local instance of MySQL 8.0. The interface includes a Navigator pane on the left, a SQL Editor in the center, and a Result Grid/Output pane on the right.

**Navigator Pane:** Shows the database structure. The selected database is `library_system`. The selected table is `books`.

**SQL Editor:** Contains the following SQL queries:

```
1 SELECT * FROM library_system.member;
2 INSERT INTO member (Name, Email, PhoneNumber, Address, JoinDate)
3 VALUES
4 ('John Doe', 'john.doe@example.com', '1234567890', '123 Main St', '2023-11-22'),
5 ('Jane Smith', 'jane.smith@example.com', '9876543210', '456 Oak Ave', '2023-12-05'),
6 ('David Lee', 'david.lee@example.com', '5551234567', '789 Pine Rd', '2023-11-15');
```

**Result Grid:** Displays the results of the first query (SELECT \* FROM library\_system.member). The data is as follows:

MemberID	Name	Email	PhoneNumber	Address	JoinDate
1	John Doe	john.doe@example.com	1234567890	123 Main St	2023-11-22
2	Jane Smith	jane.smith@example.com	9876543210	456 Oak Ave	2023-12-05
3	David Lee	david.lee@example.com	5551234567	789 Pine Rd	2023-11-15

**Output Pane:** Shows the execution details of the first query (SELECT \* FROM library\_system.member). The output is:

#	Time	Action	Message	Duration / Fetch
1	11:49:28	SELECT * FROM library_system.member LIMIT 0.1000	3 row(s) returned	0.000 sec / 0.000 sec

**SQL Editor (Second Screenshot):** Contains the following SQL queries:

```
1 SELECT * FROM library_system.books;
2 INSERT INTO books (BookID, Title, Author, ISBN, Publisher, PublicationYear, Genre)
3 VALUES
4 (1, 'The Lord of the Rings', 'J.R.R. Tolkien', '9780547926538', 'HarperCollins', 1954, 'Fantasy'),
5 (2, 'To Kill a Mockingbird', 'Harper Lee', '9780061120084', 'HarperCollins', 1960, 'Southern Gothic'),
6 (3, '1984', 'George Orwell', '9780451524935', 'New American Library', 1949, 'Dystopian'),
7 (4, 'Pride and Prejudice', 'Jane Austen', '9780141439518', 'Penguin Classics', 1813, 'Romance'),
8 (5, 'The Alchemist', 'Paulo Coelho', '9780061803483', 'HarperCollins', 1988, 'Philosophical Fiction');
```

**Output Pane (Second Screenshot):** Shows the execution details of the first query (SELECT \* FROM library\_system.books). The output is:

#	Time	Action	Message	Duration / Fetch
1	11:49:28	SELECT * FROM library_system.books LIMIT 0.1000	3 row(s) returned	0.000 sec / 0.000 sec

MySQL Workbench interface showing a SQL query and its results.

**SQL Query:**

```
1 SELECT * FROM library_system.books;
2 INSERT INTO Books (BookID, Title, Author, ISBN, Publisher, PublicationYear, Genre)
3 VALUES
4 (1, 'The Lord of the Rings', 'J.R.R. Tolkien', '9780547926538', 'HarperCollins', 1954, 'Fantasy'),
5 (2, 'To Kill a Mockingbird', 'Harper Lee', '9780061120884', 'HarperCollins', 1960, 'Southern Gothic'),
6 (3, '1984', 'George Orwell', '9780451524935', 'New American Library', 1949, 'Dystopian'),
```

**Result Grid:**

BookID	Title	Author	ISBN	Publisher	PublicationYear	Genre	Availability
1	The Lord of the Rings	J.R.R. Tolkien	9780547926538	HarperCollins	1954	Fantasy	1
2	To Kill a Mockingbird	Harper Lee	9780061120884	HarperCollins	1960	Southern Gothic	1
3	1984	George Orwell	9780451524935	New American Library	1949	Dystopian	1
4	Pride and Prejudice	Jane Austen	9780141439518	Penguin Classics	1813	Romance	1
5	The Alchemist	Paulo Coelho	9780061803463	HarperCollins	1988	Philosophical Fiction	1

**Output:**

#	Time	Action	Message	Duration / Fetch
1	11:49:28	SELECT * FROM library_system.member LIMIT 0.1000	3 row(s) returned	0.000 sec / 0.000 sec
2	11:49:38	SELECT * FROM library_system.books LIMIT 0.1000	5 row(s) returned	0.015 sec / 0.000 sec

MySQL Workbench interface showing a SQL query and its results.

**SQL Query:**

```
1 SELECT * FROM library_system.librarians;
2 INSERT INTO Librarians (LibrarianID, FirstName, LastName, EmployeeID, Department)
3 VALUES
4 (1, 'John', 'Doe', 1001, 'Circulation'),
5 (2, 'Jane', 'Smith', 1002, 'Reference'),
6 (3, 'David', 'Lee', 1003, 'Childrens'),
7 (4, 'Sarah', 'Jones', 1004, 'Acquisitions');
```

**Output:**

#	Time	Action	Message	Duration / Fetch
1	11:49:28	SELECT * FROM library_system.member LIMIT 0.1000	3 row(s) returned	0.000 sec / 0.000 sec
2	11:49:38	SELECT * FROM library_system.books LIMIT 0.1000	5 row(s) returned	0.015 sec / 0.000 sec

MySQL Workbench interface showing a database schema and SQL queries.

**Schema:** library\_system

- employee\_details
- library\_system
  - books
  - libraries
  - member
- sys
- world

**SQL File 5:**

```
1 SELECT * FROM library_system.member LIMIT 0, 1000;
2 INSERT INTO library_system.libraries (LIBRARYID, FIRSTNAME, Lastname, EmployeeID, Department)
3 VALUES
4 ('John Doe', 'john.doe@example.com', '1234567890', '123 Main St', '2023-11-22'),
5 ('Jane Smith', 'jane.smith@example.com', '9876543210', '456 Oak Ave', '2023-12-05'),
6 ('David Lee', 'david.lee@example.com', '5551234567', '789 Pine Rd', '2023-11-15');
7
8
9 START TRANSACTION;
10 SELECT * FROM Member WHERE MemberID = 1 FOR UPDATE;
11 UPDATE Member SET Name = 'Updated Name' WHERE MemberID = 1;
12 COMMIT;
```

**Output:**

#	Time	Action	Message	Duration / Fetch
1	11:49:28	SELECT * FROM library_system.member LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
2	11:49:38	INSERT * FROM library_system.libraries LIMIT 0, 1000	5 row(s) returned	0.015 sec / 0.000 sec
3	11:49:48	SELECT * FROM library_system.libraries LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
4	12:09:38	START TRANSACTION	0 row(s) affected	0.016 sec
5	12:09:59	SELECT * FROM library_system.member LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
6	12:10:10	UPDATE Member SET Name = 'Updated Name' WHERE MemberID = 1	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0	0.000 sec



MySQL Workbench interface showing a SQL script execution for a library system database. The script includes a SELECT statement, an INSERT INTO statement, and a VALUES clause. The output shows the execution results, including the number of rows affected and the duration of the query.

SQL File 5: member, books, librarians

```
1 SELECT * FROM library_system.member;
2 INSERT INTO Member (Name, Email, PhoneNumber, Address, JoinDate)
3 VALUES
4 ('John Doe', 'john.doe@example.com', '1234567890', '123 Main St', '2023-11-22'),
5 ('Jane Smith', 'jane.smith@example.com', '9876543210', '456 Oak Ave', '2023-12-05'),
6 ('David Lee', 'david.lee@example.com', '5551234567', '789 Pine Rd', '2023-11-15');
```

Result Grid

MemberID	Name	Email	PhoneNumber	Address	JoinDate
1	Updated Name	john.doe@example.com	1234567890	123 Main St	2023-11-22
2	Jane Smith	jane.smith@example.com	9876543210	456 Oak Ave	2023-12-05
3	David Lee	david.lee@example.com	5551234567	789 Pine Rd	2023-11-15

member 3 x

Output

#	Time	Action	Message	Duration / Fetch
5	12:09:59	SELECT * FROM library_system.member LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
6	12:10:10	UPDATE Member SET Name = 'Updated Name' WHERE MemberID = 1	1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0	0.000 sec
7	12:10:48	COMMIT	0 row(s) affected	0.000 sec
8	12:10:51	SELECT * FROM library_system.member LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec

member 4 x

Output

#	Time	Action	Message	Duration / Fetch
10	12:40:44	create user 'test1'@localhost identified by 'test1'	Error Code: 1396. Operation CREATE USER failed for 'test1'@localhost	0.016 sec
11	12:40:50	SELECT * FROM library_system.books LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
12	12:41:40	desc librarians	5 row(s) returned	0.016 sec / 0.000 sec
13	14:50:17	SELECT * FROM library_system.member LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec

MySQL Workbench interface showing a database schema and SQL queries.

**Schema:** library\_system

- Tables: books, member, librarians

**SQL File 5:**

```
1 SELECT * FROM library_system.member;
2 INSERT INTO member (Name, Email, PhoneNumber, Address, JoinDate)
3 VALUES
4 ('John Doe', 'john.doe@example.com', '1234567890', '123 Main St', '2023-11-22'),
5 ('Jane Smith', 'jane.smith@example.com', '9876543210', '456 Oak Ave', '2023-12-05'),
6 ('David Lee', 'david.lee@example.com', '5551234567', '789 Pine Rd', '2023-11-15');
7
8
9 START TRANSACTION;
10 SELECT * FROM member WHERE MemberID = 1 FOR UPDATE;
```

**Result Grid:**

MemberID	Name	Email	PhoneNumber	Address	JoinDate
1	Updated Name	john.doe@example.com	1234567890	123 Main St	2023-11-22
2	Jane Smith	jane.smith@example.com	9876543210	456 Oak Ave	2023-12-05
3	David Lee	david.lee@example.com	5551234567	789 Pine Rd	2023-11-15

**member 4 x**

**Output:**

#	Time	Action	Message	Duration / Fetch
10	12:40:44	create user 'berti'@localhost identified by 'berti'	Error Code: 1396. Operation CREATE USER failed for 'berti'@localhost '@%'	0.016 sec
11	12:40:50	SELECT * FROM library_system.books LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
12	12:41:40	desc librarians	5 row(s) returned	0.016 sec / 0.000 sec
13	14:50:17	SELECT * FROM library_system.member LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec

**SQL File 5:**

```
1 SELECT * FROM library_system.books;
2 INSERT INTO books (BookID, Title, Author, ISBN, Publisher, PublicationYear, Genre)
3 VALUES
4 (1, 'The Lord of the Rings', 'J.R.R. Tolkien', '9780547926538', 'HarperCollins', 1954, 'Fantasy'),
5 (2, 'To Kill a Mockingbird', 'Harper Lee', '9780061120044', 'HarperCollins', 1960, 'Southern Gothic'),
6 (3, '1984', 'George Orwell', '9780451524935', 'New American Library', 1949, 'Dystopian'),
7 (4, 'Pride and Prejudice', 'Jane Austen', '9780141439518', 'Penguin Classics', 1813, 'Romance'),
8 (5, 'The Alchemist', 'Paulo Coelho', '9780061803483', 'HarperCollins', 1988, 'Philosophical Fiction');
9
10 ALTER TABLE Books
11 ADD Column NumberOfCopies INT DEFAULT 1;
```

**Result Grid:**

BookID	Title	Author	ISBN	Publisher	PublicationYear	Genre	Availability
1	The Lord of the Rings	J.R.R. Tolkien	9780547926538	HarperCollins	1954	Fantasy	1
2	To Kill a Mockingbird	Harper Lee	9780061120044	HarperCollins	1960	Southern Gothic	1
3	1984	George Orwell	9780451524935	New American Library	1949	Dystopian	1
4	Pride and Prejudice	Jane Austen	9780141439518	Penguin Classics	1813	Romance	1
5	The Alchemist	Paulo Coelho	9780061803483	HarperCollins	1988	Philosophical Fiction	1

**books 3 x**

**Output:**

#	Time	Action	Message	Duration / Fetch
11	12:40:50	SELECT * FROM library_system.books LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
12	12:41:40	desc librarians	5 row(s) returned	0.016 sec / 0.000 sec
13	14:50:17	SELECT * FROM library_system.member LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
14	14:50:58	SELECT * FROM library_system.books LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec



MySQL Workbench interface showing a SQL script and its execution results.

**SQL Script:**

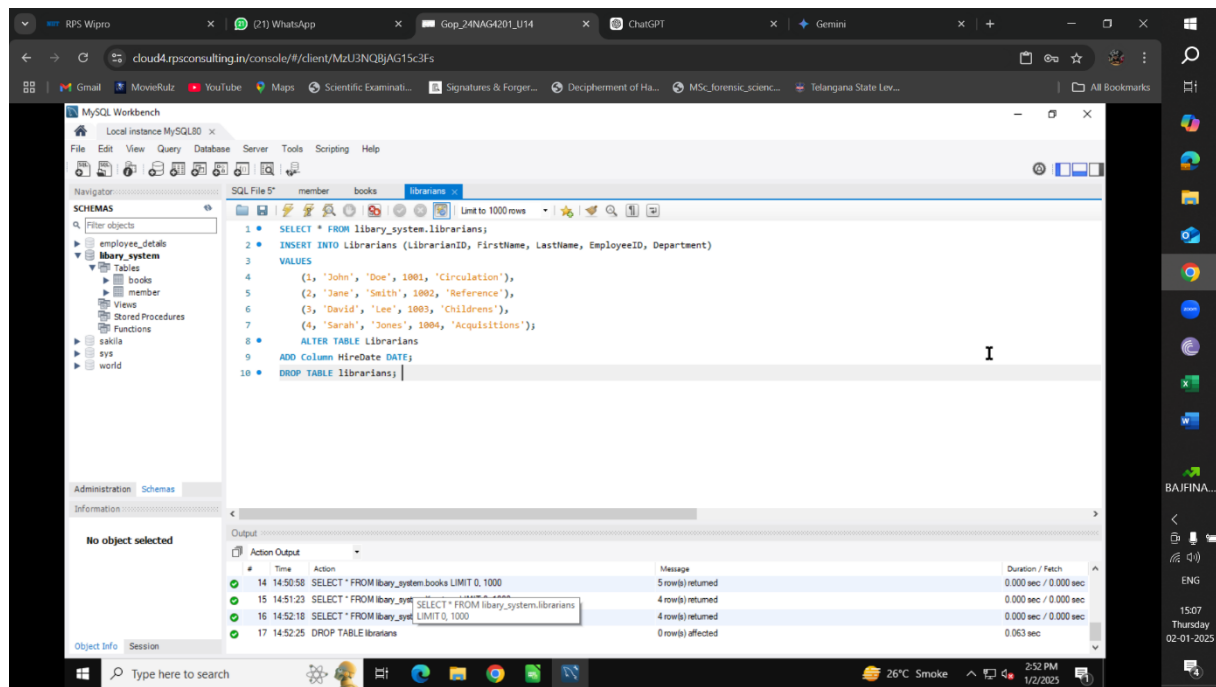
```
1 SELECT * FROM library_system.librarians;
2 INSERT INTO Librarians (LibrarianID, FirstName, LastName, EmployeeID, Department)
3 VALUES
4   (1, 'John', 'Doe', 1001, 'Circulation'),
5   (2, 'Jane', 'Smith', 1002, 'Reference'),
6   (3, 'David', 'Lee', 1003, 'Childrens'),
7   (4, 'Sarah', 'Jones', 1004, 'Acquisitions');
8 ALTER TABLE Librarians
9 ADD Column HireDate DATE;
10 DROP TABLE Librarians;
```

**Result Grid:**

LibrarianID	FirstName	LastName	EmployeeID	Department
1	John	Doe	1001	Circulation
2	Jane	Smith	1002	Reference
3	David	Lee	1003	Childrens
4	Sarah	Jones	1004	Acquisitions

**Output:**

#	Time	Action	Message	Duration / Fetch
12	12:41:40	desc librarians	5 row(s) returned	0.016 sec / 0.000 sec
13	14:50:17	SELECT * FROM library_system.member LIMIT 0.1000	3 row(s) returned	0.000 sec / 0.000 sec
14	14:50:58	SELECT * FROM library_system.books LIMIT 0.1000	5 row(s) returned	0.000 sec / 0.000 sec
15	14:51:23	SELECT * FROM library_system.librarians LIMIT 0.1000	4 row(s) returned	0.000 sec / 0.000 sec



**Members:** Adds a new column MembershipType with an ENUM data type to categorize members (Regular, Student, Staff).

**Books:** Adds a new column NumberOfCopies to track the number of copies available for each book.

**Librarians:** Adds a new column HireDate to store the hire date of each librarian.

The DROP statement removes the Librarians table, assuming it is redundant and no longer needed.