

# LIBRARY MANAGEMENT SYSTEM

**My SQL Project**

## **ABSTRACT**

This work built a library management system using My SQL.

**Lis Mary Antony**

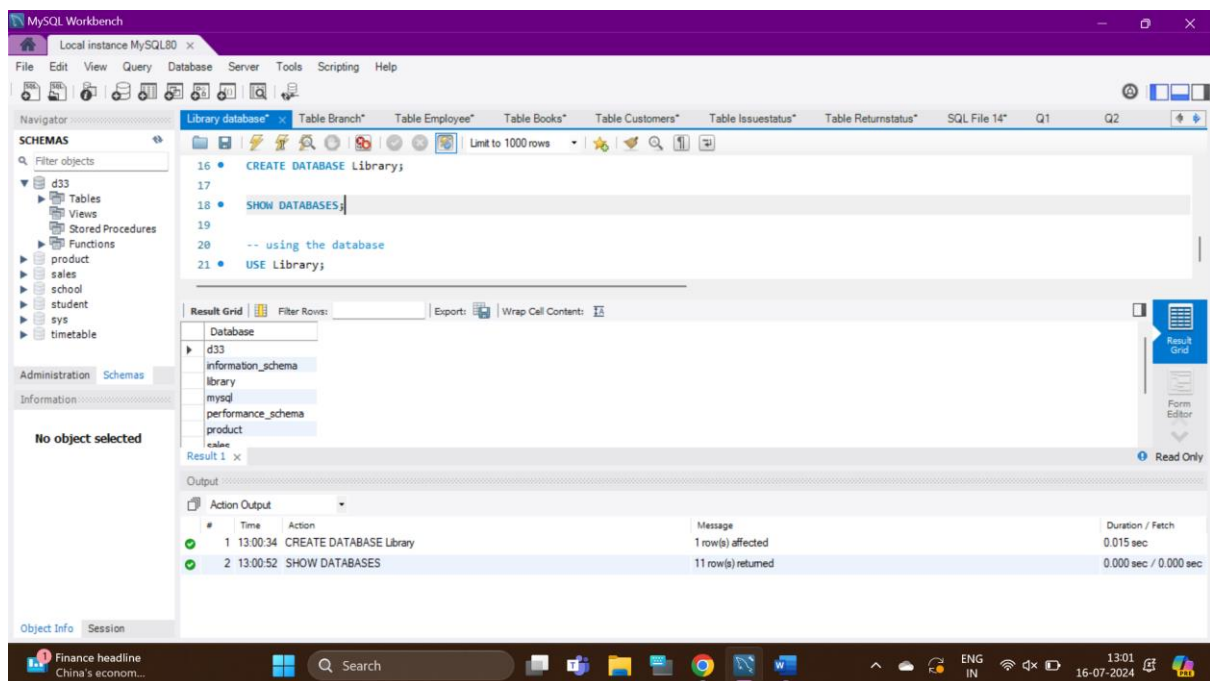
DSML D33

## Topic : Library Management System

You are going to build a project based on Library Management System. It keeps track of all information about books in the library, their cost, status, and total number of books available in the library.

Create a database named library and following TABLES in the database:

1. Branch
2. Employee
3. Books
4. Customer
5. IssueStatus
6. ReturnStatus



## 1. Branch

- Branch\_no - Set as PRIMARY KEY
- Manager\_Id
- Branch\_address
- Contact\_no

The screenshot shows the MySQL Workbench interface with the 'Table Branch' tab selected. The SQL editor contains the following code:

```
13 CREATE TABLE Branch (Branch_no INT PRIMARY KEY,  
14 Manager_Id INT,  
15 Branch_address VARCHAR(255),  
16 Contact_no VARCHAR(15));  
17  
18 DESC Branch;
```

The 'Result Grid' shows the table structure:

Field	Type	Null	Key	Default	Extra
Branch_no	int	NO	PRI		
Manager_Id	int	YES			
Branch_address	varchar(255)	YES			
Contact_no	varchar(15)	YES			

The 'Action Output' pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
1	13:00:34	CREATE DATABASE Library	1 row(s) affected	0.015 sec
2	13:00:52	SHOW DATABASES	11 row(s) returned	0.000 sec / 0.000 sec
3	13:02:00	USE Library	0 row(s) affected	0.000 sec
4	13:02:10	CREATE TABLE Branch (Branch_no INT PRIMARY KEY, Manager_Id INT, Branch...	0 row(s) affected	0.046 sec
5	13:02:14	DESC Branch	4 row(s) returned	0.000 sec / 0.000 sec

The screenshot shows the MySQL Workbench interface with the 'Table Branch' tab selected. The SQL editor contains the following code:

```
29 (7, 107, 'Maharajas Junction', '999894040'),  
30 (8, 108, 'Muttuchira', '999405050'),  
31 (9, 109, 'Kaduthuruthy', '999836060'),  
32 (10, 110, 'Kuravilangad', '999957070');  
33  
34 SELECT *FROM Branch;
```

The 'Result Grid' shows the data inserted into the table:

Branch_no	Manager_Id	Branch_address	Contact_no
6	106	Ernakulam Vytilla	999833030
7	107	Maharajas Junction	999894040
8	108	Muttuchira	999405050
9	109	Kaduthuruthy	999836060
10	110	Kuravilangad	999957070

The 'Action Output' pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
3	13:02:00	USE Library	0 row(s) affected	0.000 sec
4	13:02:10	CREATE TABLE Branch (Branch_no INT PRIMARY KEY, Manager_Id INT, Bran...	0 row(s) affected	0.046 sec
5	13:02:14	DESC Branch	4 row(s) returned	0.000 sec / 0.000 sec
6	13:03:23	INSERT INTO Branch (Branch_no, Manager_Id, Branch_address, Contact_no) VALU...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.016 sec
7	13:03:26	SELECT *FROM Branch LIMIT 0, 1000	10 row(s) returned	0.000 sec / 0.000 sec

## 2. Employee

- Emp\_Id – Set as PRIMARY KEY
- Emp\_name
- Position
- Salary
- Branch\_no - Set as FOREIGN KEY and it refer Branch\_no in Branch table

The screenshot shows the MySQL Workbench interface with the 'Table Employee' tab selected. The table structure is defined as follows:

```

15 Position VARCHAR(50),
16 Salary DECIMAL(10, 2),
17 Branch_No INT,
18 FOREIGN KEY (Branch_No) REFERENCES Branch(Branch_No));
19
20 • DESC Employee;

```

The 'Result Grid' shows the table structure:

Field	Type	Null	Key	Default	Extra
Emp_Id	int	NO	PRI		
Emp_Name	varchar(100)	YES			
Position	varchar(50)	YES			
Salary	decimal(10,2)	YES			
Branch_No	int	YES	MUL		

The 'Action Output' shows the execution of the following queries:

- 5 13:02:14 DESC Branch
- 6 13:03:23 INSERT INTO Branch (Branch\_no, Manager\_Id, Branch\_address, Contact\_no) VALUES (1, 1, '...', '...')
- 7 13:03:26 SELECT \* FROM Branch LIMIT 0, 1000
- 8 13:04:24 CREATE TABLE Employee (Emp\_Id INT PRIMARY KEY, Emp\_Name VARCHAR(100), Position VARCHAR(50), Salary DECIMAL(10,2), Branch\_No INT);
- 9 13:04:25 DESC Employee

The screenshot shows the MySQL Workbench interface with the 'Table Employee' tab selected. The table structure is defined as follows:

```

22 -- Inserting data into Employee table
23 • INSERT INTO Employee VALUES
24 (101, 'Alice George', 'Manager', 60000.00, 1),
25 (102, 'Mathew Johnson', 'Manager', 70000.00, 2),
26 (103, 'Charlie John', 'Manager', 62000.00, 3),
27 (104, 'David Mathew', 'Manager', 52000.00, 4),

```

The 'Result Grid' shows the data inserted into the Employee table:

Emp_Id	Emp_Name	Position	Salary	Branch_No
49	Hima S	Clerk	29000.00	4
50	Anu Sebastian	Clerk	21 21000.00	4
101	Alice George	Manager	60000.00	1
102	Mathew Joh...	Manager	70000.00	2
103	Charlie John	Manager	62000.00	3
104	David Mathew	Manager	52000.00	4

The 'Action Output' shows the execution of the following queries:

- 7 13:03:26 SELECT \* FROM Branch LIMIT 0, 1000
- 8 13:04:24 CREATE TABLE Employee (Emp\_Id INT PRIMARY KEY, Emp\_Name VARCHAR(100), Position VARCHAR(50), Salary DECIMAL(10,2), Branch\_No INT);
- 9 13:04:25 DESC Employee
- 10 13:04:55 INSERT INTO Employee VALUES (101, 'Alice George', 'Manager', 60000.00, 1), (102, 'Mathew Johnson', 'Manager', 70000.00, 2), (103, 'Charlie John', 'Manager', 62000.00, 3), (104, 'David Mathew', 'Manager', 52000.00, 4);
- 11 13:05:00 SELECT \* FROM Employee LIMIT 0, 1000



### 3. Books

- ISBN - Set as PRIMARY KEY
- Book\_title
- Category
- Rental\_Price
- Status [Give yes if book available and no if book not available]
- Author
- Publisher

The screenshot shows the MySQL Workbench interface with the 'Table Books' tab selected. The table structure is defined as follows:

Field	Type	Null	Key	Default	Extra
ISBN	varchar(20)	NO	PRI		
Book_title	varchar(100)	YES			
Category	varchar(50)	YES			
Rental_Price	decimal(10,2)	YES			
Status	varchar(3)	YES			
Author	varchar(100)	YES			
Publisher	varchar(100)	YES			

The Action Output pane shows the following sequence of operations:

- 9 13:04:25 DESC Employee: 5 row(s) returned
- 10 13:04:55 INSERT INTO Employee VALUES (101, 'Alice George', 'Manager', 60000.00, 1), (102, ...): 50 row(s) affected
- 11 13:05:00 SELECT \* FROM Employee LIMIT 0, 1000: 50 row(s) returned
- 12 20:09:27 CREATE TABLE Books (ISBN VARCHAR(20) PRIMARY KEY, Book\_title VARCHAR...): 0 row(s) affected
- 13 20:09:29 DESC Books: 7 row(s) returned

The screenshot shows the MySQL Workbench interface with the 'Table Books' tab selected. The table structure is defined as follows:

Field	Type	Null	Key	Default	Extra
ISBN	varchar(20)	NO	PRI		
Book_title	varchar(100)	YES			
Category	varchar(50)	YES			
Rental_Price	decimal(10,2)	YES			
Status	varchar(3)	YES			
Author	varchar(100)	YES			
Publisher	varchar(100)	YES			

The Action Output pane shows the following sequence of operations:

- 11 13:05:00 SELECT \* FROM Employee LIMIT 0, 1000: 50 row(s) returned
- 12 20:09:27 CREATE TABLE Books (ISBN VARCHAR(20) PRIMARY KEY, Book\_title VARCHAR...): 0 row(s) affected
- 13 20:09:29 DESC Books: 7 row(s) returned
- 14 20:10:17 INSERT INTO Books (ISBN, Book\_title, Category, Rental\_Price, Status, Author, Publi...): 20 row(s) affected
- 15 20:10:19 SELECT \* FROM Books LIMIT 0, 1000: 20 row(s) returned

#### 4. Customer

- Customer\_Id - Set as PRIMARY KEY
- Customer\_name
- Customer\_address
- Reg\_date

The screenshot shows the MySQL Workbench interface with the 'Table Customers' tab selected. The SQL editor contains the following code:

```
13 Customer_name VARCHAR(100),
14 Customer_address VARCHAR(255),
15 Reg_date DATE);
16
17 DESC Customer;
```

The 'Result Grid' shows the table structure for 'customer':

Field	Type	Null	Key	Default	Extra
Customer_Id	int	NO	PRI		
Customer_name	varchar(100)	YES			
Customer_address	varchar(255)	YES			
Reg_date	date	YES			

The 'Output' pane shows the execution log for the 'CREATE TABLE' statement:

#	Time	Action	Message	Duration / Fetch
14	20:10:17	INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Publis...	20 row(s) affected Records: 20 Duplicates: 0 Warnings: 0	0.000 sec
15	20:10:19	SELECT *FROM Books LIMIT 0, 1000	20 row(s) returned	0.000 sec / 0.000 sec
16	20:11:08	CREATE TABLE Customer (Customer_Id INT PRIMARY KEY, Customer_name VAR...	0 row(s) affected	0.031 sec
17	20:11:12	DESC Customer	4 row(s) returned	0.016 sec / 0.000 sec

The screenshot shows the MySQL Workbench interface with the 'Table Customers' tab selected. The SQL editor contains the following code:

```
43 (23, 'Tina Sebastian', 'Marangolil', '2018-01-30'),
44 (24, 'Priya Mary', 'Kizhakkavattukulam', '2019-10-20'),
45 (25, 'Megha Manoj', 'Devinivas', '2021-05-30');
46
47 SELECT *FROM customer;
```

The 'Result Grid' shows the data inserted into the 'customer' table:

Customer_Id	Customer_name	Customer_address	Reg_date
19	Sandra Gijo	Puthenpurakal	2023-07-19
20	Joseph Andrew	Cheriyankunnil	2023-08-21
21	Radrika KS	Jalaveed	2021-12-15
22	Christy George	Pulkan	2021-11-30
23	Tina Sebastian	Marangolil	2018-01-30
24	Priya Mary	Kizhakkavattukulam	2019-10-20
25	Megha Manoj	Devinivas	2021-05-30

The 'Output' pane shows the execution log for the 'INSERT' statement:

#	Time	Action	Message	Duration / Fetch
15	20:10:19	SELECT *FROM Books LIMIT 0, 1000	20 row(s) returned	0.000 sec / 0.000 sec
16	20:11:08	CREATE TABLE Customer (Customer_Id INT PRIMARY KEY, Customer_name VAR...	0 row(s) affected	0.031 sec
17	20:11:12	DESC Customer	4 row(s) returned	0.016 sec / 0.000 sec
18	20:11:41	INSERT INTO Customer VALUES (1,'Antony Mathew', 'Pallivathuckal', '2020-01-01'), (...	25 row(s) affected Records: 25 Duplicates: 0 Warnings: 0	0.016 sec
19	20:11:44	SELECT *FROM customer LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec

## 5. IssueStatus

- Issue\_Id - Set as PRIMARY KEY
- Issued\_cust – Set as FOREIGN KEY and it refer customer\_id in CUSTOMER table Issued\_book\_name
- Issue\_date
- Isbn\_book – Set as FOREIGN KEY and it should refer isbn in BOOKS table

The screenshot shows the MySQL Workbench interface with the 'Table IssueStatus' selected in the 'Table Customers' tab. The SQL editor displays the following code:

```

16  Isbn_book VARCHAR(20),
17  FOREIGN KEY (Issued_cust) REFERENCES Customer(Customer_Id),
18  FOREIGN KEY (Isbn_book) REFERENCES Books(ISBN));
19
20 • DESC IssueStatus;

```

The 'Result Grid' shows the table structure:

Field	Type	Null	Key	Default	Extra
Issue_Id	int	NO	PRI		
Issued_cust	int	YES	MUL		
Issued_book_name	varchar(255)	YES			
Issue_date	date	YES			
Isbn_book	varchar(20)	YES	MUL		

The 'Output' pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
17	20:11:12	DESC Customer	4 row(s) returned	0.016 sec / 0.000 sec
18	20:11:41	INSERT INTO Customer VALUES (1, 'Antony Mathew', 'Pallvathuckal', '2020-01-01'), (...	25 row(s) affected Records: 25 Duplicates: 0 Warnings: 0	0.016 sec
19	20:11:44	SELECT *FROM customer LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
20	20:12:38	CREATE TABLE IssueStatus (Issue_Id INT PRIMARY KEY, Issued_cust INT, Is...	0 row(s) affected	0.078 sec
21	20:12:40	DESC IssueStatus	5 row(s) returned	0.000 sec / 0.000 sec

The screenshot shows the MySQL Workbench interface with the 'Table IssueStatus' selected in the 'Table Customers' tab. The SQL editor displays the following code:

```

61  (36, 13, 'Book Sixteen', '2024-05-25', '978-0-8129-8234-3'),
62  (39, 14, 'Book Seventeen', '2024-06-05', '978-0-14-312656-0'),
63  (40, 15, 'Book Eighteen', '2024-06-05', '978-0-7432-7357-2');
64
65 • SELECT *FROM IssueStatus;

```

The 'Result Grid' shows the data inserted into the table:

Issue_Id	Issued_cust	Issued_book_name	Issue_date	Isbn_book
34	9	Book Twelve	2024-05-15	978-1-4555-7347-4
35	10	Book Thirteen	2024-05-25	978-1-5011-7329-6
36	11	Book Fourteen	2024-05-15	978-0-345-53484-2
37	12	Book Fifteen	2024-05-13	978-0-399-16517-6
38	13	Book Sixteen	2024-05-25	978-0-8129-8234-3
39	14	Book Seventeen	2024-06-05	978-0-14-312656-0
40	15	Book Eighteen	2024-06-05	978-0-7432-7357-2

The 'Output' pane shows the execution log:

#	Time	Action	Message	Duration / Fetch
19	20:11:44	SELECT *FROM customer LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
20	20:12:38	CREATE TABLE IssueStatus (Issue_Id INT PRIMARY KEY, Issued_cust INT, Is...	0 row(s) affected	0.078 sec
21	20:12:40	DESC IssueStatus	5 row(s) returned	0.000 sec / 0.000 sec
22	20:13:04	INSERT INTO IssueStatus (Issue_Id, Issued_cust, Issued_book_name, Issue_date, Is...	40 row(s) affected Records: 40 Duplicates: 0 Warnings: 0	0.016 sec
23	20:13:07	SELECT *FROM IssueStatus LIMIT 0, 1000	40 row(s) returned	0.000 sec / 0.000 sec



## 6. ReturnStatus

- Return\_Id - Set as PRIMARY KEY
- Return\_cust
- Return\_book\_name
- Return\_date
- Isbn\_book2 - Set as FOREIGN KEY and it should refer isbn in BOOKS table

The screenshot shows the MySQL Workbench interface with the 'Table ReturnStatus' selected in the 'Table Customers' tab. The SQL editor displays the following code:

```
17  Isbn_book2 VARCHAR(20),
18  FOREIGN KEY (Return_cust) REFERENCES Customer(Customer_Id),
19  FOREIGN KEY (Isbn_book2) REFERENCES Books(ISBN));
20
21  • DESC ReturnStatus;
```

The 'Result Grid' shows the table structure:

Field	Type	Null	Key	Default	Extra
Return_Id	int	NO	PRI		
Return_cust	int	YES	MUL		
Return_book_name	varchar(255)	YES			
Return_date	date	YES			
Isbn_book2	varchar(20)	YES	MUL		

The 'Action Output' pane shows the execution of the following queries:

- 21 20:12:40 DESC IssueStatus: 5 row(s) returned
- 22 20:13:04 INSERT INTO IssueStatus (Issue\_Id, Issued\_cust, Issued\_book\_name, Issue\_date, Is...): 40 row(s) affected Records: 40 Duplicates: 0 Warnings: 0
- 23 20:13:07 SELECT \*FROM IssueStatus LIMIT 0, 1000: 40 row(s) returned
- 24 20:13:55 CREATE TABLE ReturnStatus (Return\_Id INT PRIMARY KEY, Return\_cust INT, ...): 0 row(s) affected
- 25 20:13:58 DESC ReturnStatus: 5 row(s) returned

The screenshot shows the MySQL Workbench interface with the 'Table ReturnStatus' selected in the 'Table Customers' tab. The SQL editor displays the following code:

```
47  (23, 23, 'Book One', '2019-02-15', '978-3-16-148410-8'),
48  (24, 24, 'Book Two', '2022-11-20', '978-1-234-56789-7'),
49  (25, 25, 'Book Three', '2023-12-05', '978-1-4028-9462-6');
50
51  • SELECT *FROM ReturnStatus;
```

The 'Result Grid' shows the data inserted into the table:

Return_Id	Return_cust	Return_book_name	Return_date	Isbn_book2
19	19	Book Seventeen	2024-06-05	978-0-14-312656-0
20	20	Book Eighteen	2024-05-15	978-0-7432-7357-2
21	21	Book One	2023-01-01	978-3-16-148410-0
22	22	Book Two	2022-12-15	978-1-234-56789-7
23	23	Book One	2019-02-15	978-3-16-148410-0
24	24	Book Two	2022-11-20	978-1-234-56789-7
25	25	Book Three	2023-12-05	978-1-4028-9462-6

The 'Action Output' pane shows the execution of the following queries:

- 26 20:14:19 INSERT INTO ReturnStatus (Return\_Id, Return\_cust, Return\_book\_name, Return\_da...): 40 row(s) affected Records: 40 Duplicates: 0 Warnings: 0
- 27 20:14:22 SELECT \*FROM ReturnStatus LIMIT 0, 1000: 40 row(s) returned
- 28 20:14:50 truncate table returnstatus: 0 row(s) affected
- 29 20:15:58 INSERT INTO ReturnStatus (Return\_Id, Return\_cust, Return\_book\_name, Return\_da...): 25 row(s) affected Records: 25 Duplicates: 0 Warnings: 0
- 30 20:16:01 SELECT \*FROM ReturnStatus LIMIT 0, 1000: 25 row(s) returned



1. Retrieve the book title, category, and rental price of all available books.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```
3 USE Library;
4
5 SELECT Book_title, Category, Rental_Price
6 FROM Books
7 WHERE Status = 'yes';
```

The Result Grid displays the following data:

Book_title	Category	Rental_Price
Book Eight	Non-Fiction	15.00
Book Eleven	Fiction	13.00
Book Fourteen	History	24.00
Book Ten	History	27.00
Book Five	Science	20.00
Book Two	Non-Fiction	15.00
Book Three	Fiction	12.00
Book Thirteen	Science	21.00

The Output pane shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
27	20:14:22	SELECT *FROM ReturnStatus LIMIT 0, 1000	40 row(s) returned	0.000 sec / 0.000 sec
28	20:14:50	truncate table returnstatus	0 row(s) affected	0.062 sec
29	20:15:58	INSERT INTO ReturnStatus (Return_Id, Return_Cust, Return_book_name, Return_da...	25 row(s) affected Records: 25 Duplicates: 0 Warnings: 0	0.000 sec
30	20:16:01	SELECT *FROM ReturnStatus LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
31	20:17:37	SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIM...	10 row(s) returned	0.000 sec / 0.000 sec

2. List the employee names and their respective salaries in descending order of salary.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```
3 USE Library;
4
5 SELECT Emp_name, Salary
6 FROM Employee
7 ORDER BY Salary DESC;
```

The Result Grid displays the following data:

Emp_name	Salary
Eve Anna James	80000.00
Ivy Martin	73000.00
Matthew Johnson	70000.00
Jack James	64000.00
Charlie John	62000.00
Hanna William	61000.00
Alice George	60000.00
Grace Leo	59000.00

The Output pane shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
28	20:14:50	truncate table returnstatus	0 row(s) affected	0.062 sec
29	20:15:58	INSERT INTO ReturnStatus (Return_Id, Return_Cust, Return_book_name, Return_da...	25 row(s) affected Records: 25 Duplicates: 0 Warnings: 0	0.000 sec
30	20:16:01	SELECT *FROM ReturnStatus LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
31	20:17:37	SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIM...	10 row(s) returned	0.000 sec / 0.000 sec
32	20:18:20	SELECT Emp_name, Salary FROM Employee ORDER BY Salary DESC LIMIT 0, 1000	50 row(s) returned	0.016 sec / 0.000 sec

3. Retrieve the book titles and the corresponding customers who have issued those books.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL query:

```

4
5 SELECT B.Book_title, C.Customer_name
6 FROM Books B
7 JOIN IssueStatus I ON B.ISBN = I.ISbn_book
8 JOIN Customer C ON I.Issued_cust = C.Customer_Id;

```

The Result Grid displays the following data:

Book_title	Customer_name
Book Thirteen	Liju George
Book Thirteen	Sreejith Anil
Book Seven	Amal John
Book Seven	Binoy Davis
Book One	Antony Mathew
Book One	Aleena Iju
Book One	Radhika KS
Book One	Tina Sebastian

The Output pane shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
29	20:15:58	INSERT INTO ReturnStatus (Return_Id, Return_Cust, Return_book_name, Return_da...	25 row(s) affected Records: 25 Duplicates: 0 Warnings: 0	0.000 sec
30	20:16:01	SELECT *FROM ReturnStatus LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
31	20:17:37	SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIM...	10 row(s) returned	0.000 sec / 0.000 sec
32	20:18:20	SELECT Emp_name, Salary FROM Employee ORDER BY Salary DESC LIMIT 0, 1000	50 row(s) returned	0.016 sec / 0.000 sec
33	20:18:56	SELECT B.Book_title, C.Customer_name FROM Books B JOIN IssueStatus I ON B.IS...	40 row(s) returned	0.000 sec / 0.000 sec

4. Display the total count of books in each category.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL query:

```

3 USE Library;
4
5 SELECT Category, COUNT(*) AS Total_Books
6 FROM Books
7 GROUP BY Category;

```

The Result Grid displays the following data:

Category	Total_Books
Non-Fiction	6
Science	4
Fiction	6
History	4

The Output pane shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
30	20:16:01	SELECT *FROM ReturnStatus LIMIT 0, 1000	25 row(s) returned	0.000 sec / 0.000 sec
31	20:17:37	SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LIM...	10 row(s) returned	0.000 sec / 0.000 sec
32	20:18:20	SELECT Emp_name, Salary FROM Employee ORDER BY Salary DESC LIMIT 0, 1000	50 row(s) returned	0.016 sec / 0.000 sec
33	20:18:56	SELECT B.Book_title, C.Customer_name FROM Books B JOIN IssueStatus I ON B.IS...	40 row(s) returned	0.000 sec / 0.000 sec
34	20:19:53	SELECT Category, COUNT(*) AS Total_Books FROM Books GROUP BY Category LI...	4 row(s) returned	0.000 sec / 0.000 sec

5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```

3 • USE Library;
4
5 • SELECT Emp_name, Position
6 FROM Employee
7 WHERE Salary > 50000;

```

The Result Grid displays the following data:

Emp_name	Position
Mathew Johnson	Manager
Charlie John	Manager
David Mathew	Manager
Eve Anna James	Manager
Grace Leo	Manager
Hanna William	Manager
Ivy Martin	Manager
Jack James	Manager

The Output panel shows the execution log with the following entry for the current query:

#	Time	Action	Message	Duration / Fetch
35	20:20:33	SELECT Emp_name, Position FROM Employee WHERE Salary > 50000 LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec

6. List the customer names who registered before 2022-01-01 and have not issued any books yet.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```

4
5 • SELECT C.Customer_name
6 FROM Customer C
7 LEFT JOIN IssueStatus I ON C.Customer_Id = I.Issued_cust
8 WHERE C.Reg_date < '2022-01-01' AND I.Issued_cust IS NULL;

```

The Result Grid displays the following data:

Customer_name
Christy George
Priya Mary

The Output panel shows the execution log with the following entry for the current query:

#	Time	Action	Message	Duration / Fetch
36	20:21:35	SELECT C.Customer_name FROM Customer C LEFT JOIN IssueStatus I ON C.Customer_Id = I.Issued_cust WHERE C.Reg_date < '2022-01-01' AND I.Issued_cust IS NULL	2 row(s) returned	0.000 sec / 0.000 sec

7. Display the branch numbers and the total count of employees in each branch.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```

3  USE Library;
4
5  SELECT Branch_no, COUNT(*) AS Total_Employees
6  FROM Employee
7  GROUP BY Branch_no;

```

The Result Grid shows the following data:

Branch_no	Total_Employees
1	8
2	4
3	7
4	6
5	5
6	4
7	4
8	4

The Action Output pane shows the execution of the query and other database operations, including a message: "40 row(s) returned".

8. Display the names of customers who have issued books in the month of June 2023.

The screenshot shows the MySQL Workbench interface. The query editor contains the following SQL code:

```

4
5  SELECT C.Customer_name
6  FROM Customer C
7  JOIN IssueStatus I ON C.Customer_Id = I.Issued_cust
8  WHERE I.Issue_date BETWEEN '2023-06-01' AND '2023-06-30';

```

The Result Grid shows the following data:

Customer_name
David John
Misha Hari

The Action Output pane shows the execution of the query and other database operations, including a message: "2 row(s) returned".



9. Retrieve book\_title from book table containing history.

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```

3 • USE Library;
4
5 • SELECT Book_title
6 FROM Books
7 WHERE Category LIKE "%history%";

```

The Result Grid shows the following data:

Book_title
Book Fourteen
Book Ten
Book Six
Book Eighteen

The Output tab shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
35	20:20:33	SELECT Emp_name, Position FROM Employee WHERE Salary > 50000 LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec
36	20:21:35	SELECT C.Customer_name FROM Customer C LEFT JOIN IssueStatus I ON C.Custo...	2 row(s) returned	0.000 sec / 0.000 sec
37	20:22:10	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY B...	10 row(s) returned	0.000 sec / 0.000 sec
38	20:22:54	SELECT C.Customer_name FROM Customer C JOIN IssueStatus I ON C.Customer_id...	2 row(s) returned	0.000 sec / 0.000 sec
39	20:23:23	SELECT Book_title FROM Books WHERE Category LIKE "%history%" LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec

10. Retrieve the branch numbers along with the count of employees for branches having more than 5 employees

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```

4
5 • SELECT Branch_no, COUNT(*) AS Total_Employees
6 FROM Employee
7 GROUP BY Branch_no
8 HAVING COUNT(*) > 5;

```

The Result Grid shows the following data:

Branch_no	Total_Employees
1	8
3	7
4	6

The Output tab shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
36	20:21:35	SELECT C.Customer_name FROM Customer C LEFT JOIN IssueStatus I ON C.Custo...	2 row(s) returned	0.000 sec / 0.000 sec
37	20:22:10	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY B...	10 row(s) returned	0.000 sec / 0.000 sec
38	20:22:54	SELECT C.Customer_name FROM Customer C JOIN IssueStatus I ON C.Customer_id...	2 row(s) returned	0.000 sec / 0.000 sec
39	20:23:23	SELECT Book_title FROM Books WHERE Category LIKE "%history%" LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
40	20:23:53	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY B...	3 row(s) returned	0.000 sec / 0.000 sec

11. Retrieve the names of employees who manage branches and their respective branch addresses.

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```

3  USE Library;
4
5  SELECT E.Emp_name, B.Branch_address
6  FROM Employee E
7  JOIN Branch B ON E.Emp_Id = B.Manager_Id;

```

The Result Grid displays the following data:

Emp_name	Branch_address
Alice George	Pala Civil
Mathew Johnson	Kottayam Collectorate
Charlie John	Ernakulam Junction
David Mathew	Pala B.Ed College
Eve Anna James	Kottayam Junction
Grace Leo	Maharajas Junction
Hanna William	Muttuchira
Ivy Martin	Kaduthuruthy

The Output pane shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
37	20:22:10	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY B...	10 row(s) returned	0.000 sec / 0.000 sec
38	20:22:54	SELECT C.Customer_name FROM Customer C JOIN IssueStatus I ON C.Customer_Id...	2 row(s) returned	0.000 sec / 0.000 sec
39	20:23:23	SELECT Book_title FROM Books WHERE Category LIKE "history"; LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
40	20:23:53	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY B...	3 row(s) returned	0.000 sec / 0.000 sec
41	20:24:20	SELECT E.Emp_name, B.Branch_address FROM Employee E JOIN Branch B ON E...	9 row(s) returned	0.000 sec / 0.000 sec

12. Display the names of customers who have issued books with a rental price higher than Rs. 25.

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```

5  SELECT DISTINCT C.Customer_name
6  FROM Customer C
7  JOIN IssueStatus I ON C.Customer_Id = I.Issued_cust
8  JOIN Books B ON I.Isbn_book = B.ISBN
9  WHERE B.Rental_Price > 25;

```

The Result Grid displays the following data:

Customer_name
Ashwathi Thampi
Albert Joseph
Joseph Andrew
Linju George

The Output pane shows the execution log with the following entries:

#	Time	Action	Message	Duration / Fetch
38	20:22:54	SELECT C.Customer_name FROM Customer C JOIN IssueStatus I ON C.Customer_Id...	2 row(s) returned	0.000 sec / 0.000 sec
39	20:23:23	SELECT Book_title FROM Books WHERE Category LIKE "history"; LIMIT 0, 1000	4 row(s) returned	0.000 sec / 0.000 sec
40	20:23:53	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY B...	3 row(s) returned	0.000 sec / 0.000 sec
41	20:24:20	SELECT E.Emp_name, B.Branch_address FROM Employee E JOIN Branch B ON E...	9 row(s) returned	0.000 sec / 0.000 sec
42	20:24:51	SELECT DISTINCT C.Customer_name FROM Customer C JOIN IssueStatus I ON C...	4 row(s) returned	0.015 sec / 0.000 sec