

# Library Management System

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

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- attendance\_system
- customer
- employee
- employee\_earnings
- ineron\_first
- ineron\_sec
- inuron
- library
  - Tables
  - Views
  - Stored Procedures
  - Functions
- milk
- milkdb

No object selected

Information

Step 01  
Create Database for our project

```
/*
PROJECT: LIBRARY MANAGEMENT SYSTEM (V1.0)
DEVELOPER: [Your Name]
TOOLS: MySQL
*/
CREATE DATABASE IF NOT EXISTS library;
USE library;

-- 1. BRANCH TABLE
CREATE TABLE Branch (
    Branch_no VARCHAR(10) PRIMARY KEY,
    Manager_id VARCHAR(10),
    Branch_address VARCHAR(50),
    Contact_no VARCHAR(15)
);

-- 2. EMPLOYEE TABLE
CREATE TABLE Employee (
    Emp_id VARCHAR(10) PRIMARY KEY,
    Emp_name VARCHAR(30),
    Position VARCHAR(30),
    Salary DECIMAL(10,2),
    Branch_no VARCHAR(10),
    FOREIGN KEY (Branch_no) REFERENCES Branch(Branch_no) ON DELETE SET NULL
);
```

Output

Action Output	Time	Action	Message	Duration / Fetch
13 11:00:41	CREATE DATABASE IF NOT EXISTS library		1 row(s) affected. 1 warning(s): 1007 Can't create database 'library'; database exists	0.016 sec
14 11:00:41	USE library		0 row(s) affected	0.000 sec

Object Info Session

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- attendance\_system
- customer
- employee
- employee\_earnings
- ineron\_first
- ineron\_sec
- inuron
- library
  - Tables
    - branch
  - Views
  - Stored Procedures
  - Functions
- milk

No object selected

Query 1

```
18
19 -- 1. BRANCH TABLE
20 • 1 CREATE TABLE Branch (
21     Branch_no VARCHAR(10) PRIMARY KEY,
22     Manager_id VARCHAR(10),
23     Branch_address VARCHAR(50),
24     Contact_no VARCHAR(15)
25 );
26 • DESC Branch;
```

Result Grid

Field	Type	Null	Key	Default	Extra
Branch_no	varchar(10)	NO	PRI	NULL	
Manager_id	varchar(10)	YES		NULL	
Branch_address	varchar(50)	YES		NULL	
Contact_no	varchar(15)	YES		NULL	

Step 02  
Create table 'Branch'

Result 4

Action Output	Time	Action	Message	Duration / Fetch
15	11:01:39	CREATE TABLE Branch ( Branch_no VARCHAR(10) PRIMARY KEY, Manager_id VARCHAR(10), Bran...	0 row(s) affected	0.047 sec
16	11:01:39	DESC Branch	4 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- attendance\_system
- customer
- employee
- employee\_earnings
- ineron\_first
- ineron\_sec
- inuron
- library
  - Tables
    - branch
    - employee
  - Views
  - Stored Procedures
  - Functions

No object selected

Query 1

```
19
20 -- 2. EMPLOYEE TABLE
21 • CREATE TABLE Employee (
22     Emp_id VARCHAR(10) PRIMARY KEY,
23     Emp_name VARCHAR(30),
24     Position VARCHAR(30),
25     Salary DECIMAL(10,2),
26     Branch_no VARCHAR(10),
27     FOREIGN KEY (Branch_no) REFERENCES Branch(Branch_no) ON DELETE SET NULL
28 );
29 • DESC Employee;
```

Result Grid

Field	Type	Null	Key	Default	Extra
Emp_id	varchar(10)	NO	PRI	NULL	
Emp_name	varchar(30)	YES		NULL	
Position	varchar(30)	YES		NULL	
Salary	decimal(10,2)	YES		NULL	
Branch_no	varchar(10)	YES	MUL	NULL	

Result 5

#	Time	Action	Message	Duration / Fetch
17	11:03:29	CREATE TABLE Employee ( Emp_id VARCHAR(10) PRIMARY KEY, Emp_name VARCHAR(30), Positio... )	0 row(s) affected	0.109 sec
18	11:03:29	DESC Employee	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

Step 03  
Create table 'Employee'

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- attendance\_system
- customer
- employee
- employee\_earnings
- ineron\_first
- ineron\_sec
- inuron
- library
  - Tables
    - books
    - branch
    - employee
  - Views
  - Stored Procedures

Administration Schemas

No object selected

Result Grid

Query 1

```
29 • DESC Employee;
30
31 -- 3. BOOKS TABLE
32 • CREATE TABLE Books (
33     ISBN VARCHAR(25) PRIMARY KEY,
34     Book_title VARCHAR(80),
35     Category VARCHAR(30),
36     Rental_Price DECIMAL(10,2),
37     Status ENUM('Yes','No') DEFAULT 'Yes',
38     Author VARCHAR(30),
39     Publisher VARCHAR(30)
40 );
41 • DESC Books;
```

Result Grid

Field	Type	Null	Key	Default	Extra
ISBN	varchar(25)	NO	PRI	NULL	
Book_title	varchar(80)	YES		NULL	
Category	varchar(30)	YES		NULL	
Rental_Price	decimal(10,2)	YES		NULL	
Status	enum('Yes','No')	YES		Yes	
Author	varchar(30)	YES		NULL	
Publisher	varchar(30)	YES		NULL	

Result 6

Action Output

#	Time	Action	Message	Duration / Fetch
19	11:04:40	CREATE TABLE Books ( ISBN VARCHAR(25) PRIMARY KEY, Book_title VARCHAR(80), Category VA... )	0 row(s) affected	0.063 sec
20	11:04:40	DESC Books	7 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

Step 04  
Create table 'Books'

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- attendance\_system
- customer
- employee
- employee\_earnings
- ineron\_first
- ineron\_sec
- inuron
- library
  - Tables
    - books
    - branch
    - customer
    - employee
- Views

Administration Schemas

No object selected

Result Grid

Query 1

```
41 • DESC Books;
42
43 -- 4. CUSTOMER TABLE
44 • CREATE TABLE Customer (
45     Customer_Id VARCHAR(10) PRIMARY KEY,
46     Customer_name VARCHAR(30),
47     Customer_address VARCHAR(50),
48     Reg_date DATE
49 );
50 • DESC Customer;
```

Result Grid

Field	Type	Null	Key	Default	Extra
Customer_Id	varchar(10)	NO	PRI	NULL	
Customer_name	varchar(30)	YES		NULL	
Customer_address	varchar(50)	YES		NULL	
Reg_date	date	YES		NULL	

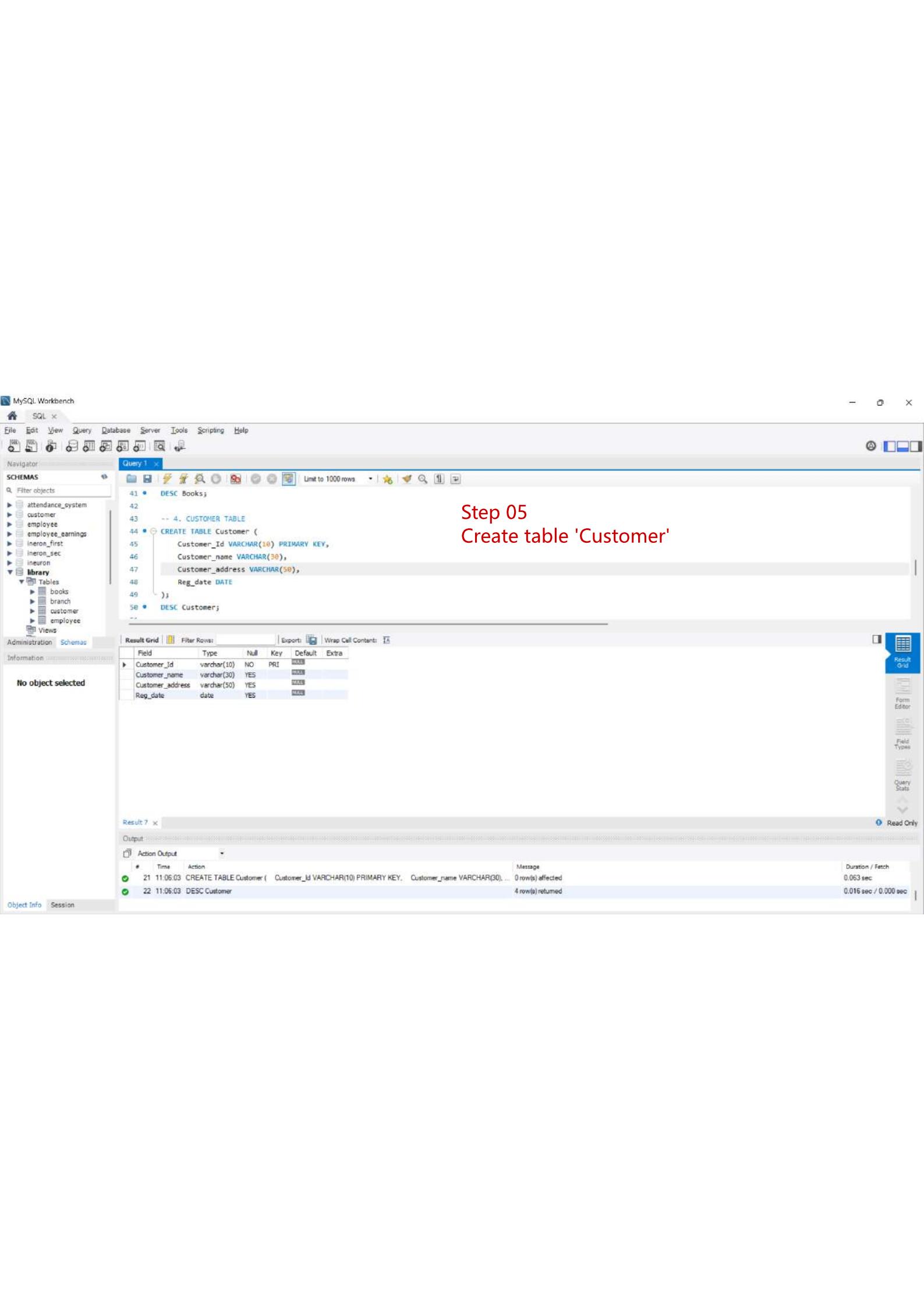
Result 7

Action Output

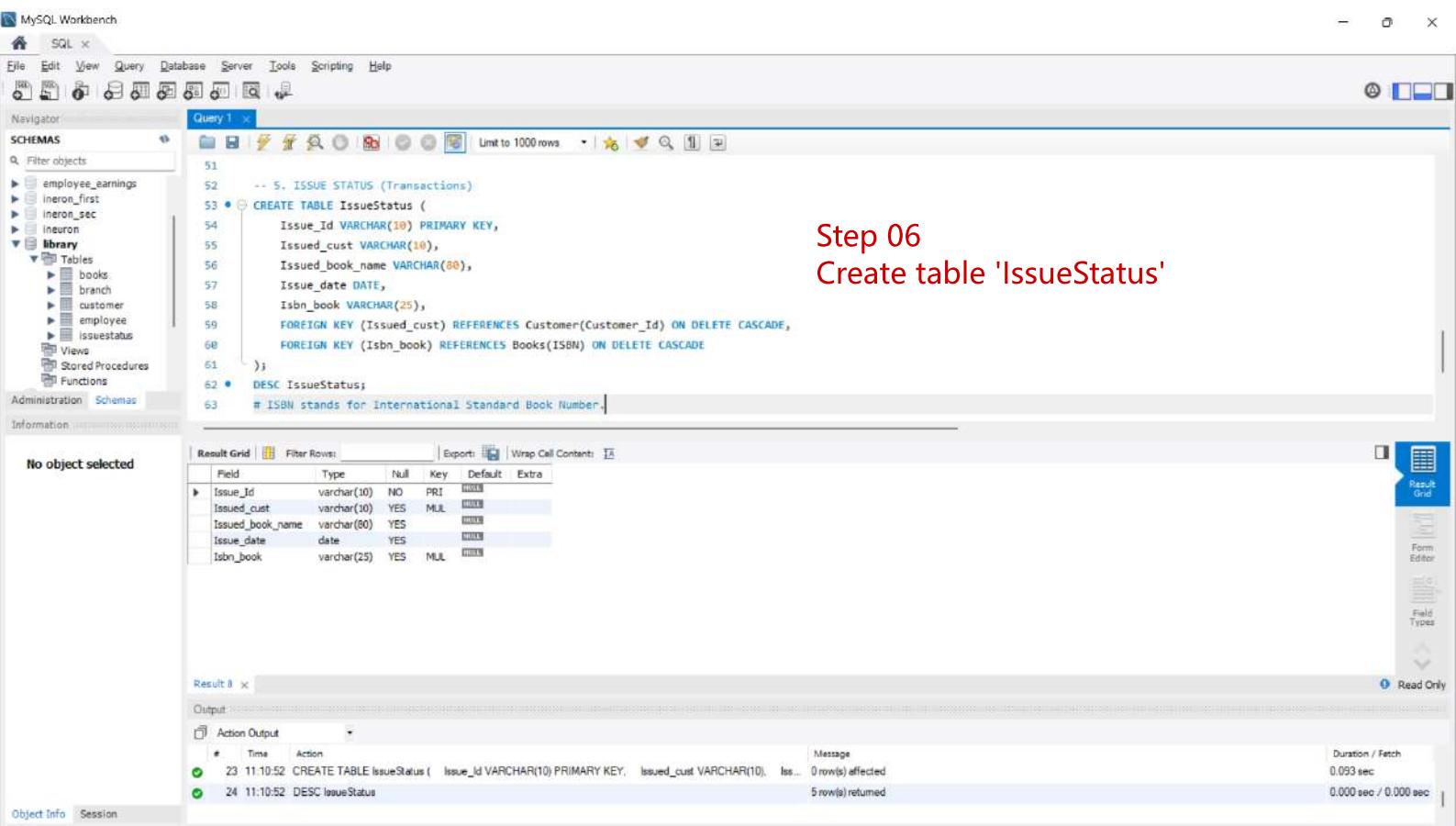
Time	Action	Message	Duration / Fetch
21 11:06:03	CREATE TABLE Customer ( Customer_Id VARCHAR(10) PRIMARY KEY, Customer_name VARCHAR(30), Customer_address VARCHAR(50), Reg_date DATE )	0 row(s) affected	0.063 sec
22 11:06:03	DESC Customer	4 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

Step 05  
Create table 'Customer'



**Step 06**  
**Create table 'IssueStatus'**



The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar, titled 'Navigator', shows the database schema with 'SCHEMAS' expanded to include 'employee\_earnings', 'ineron\_first', 'ineron\_sec', 'ineron', and 'library'. Under 'library', 'Tables' are listed: 'books', 'branch', 'customer', 'employee', 'issuesstatus', 'Views', 'Stored Procedures', and 'Functions'. The main area, 'Query 1', contains the SQL code for creating the 'IssueStatus' table:

```

51
52 -- 5. ISSUE STATUS (Transactions)
53 • CREATE TABLE IssueStatus (
54     Issue_Id VARCHAR(10) PRIMARY KEY,
55     Issued_cust VARCHAR(10),
56     Issued_book_name VARCHAR(80),
57     Issue_date DATE,
58     Isbn_book VARCHAR(25),
59     FOREIGN KEY (Issued_cust) REFERENCES Customer(Customer_Id) ON DELETE CASCADE,
60     FOREIGN KEY (Isbn_book) REFERENCES Books(ISBN) ON DELETE CASCADE
61 );
62 • DESC IssueStatus;
63 # ISBN stands for International Standard Book Number

```

The 'Result Grid' below the query shows the table structure with the following columns:

Field	Type	Null	Key	Default	Extra
Issue_Id	varchar(10)	NO	PRI	NULL	
Issued_cust	varchar(10)	YES	MUL	NULL	
Issued_book_name	varchar(80)	YES		NULL	
Issue_date	date	YES		NULL	
Isbn_book	varchar(25)	YES	MUL	NULL	

The 'Result 2' pane at the bottom shows the execution log:

Action	Time	Action	Message	Duration / Fetch
23	11:10:52	CREATE TABLE IssueStatus ( Issue_Id VARCHAR(10) PRIMARY KEY, Issued_cust VARCHAR(10), Iss... )	0 row(s) affected	0.093 sec
24	11:10:52	DESC IssueStatus	5 row(s) returned	0.000 sec / 0.000 sec

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- employee\_earnings
- ineron\_first
- ineron\_sec
- ineron
- library
  - Tables
    - books
    - branch
    - customer
    - employee
    - issuesstatus
    - returnstatus
  - Views
  - Stored Procedures

Administration Schemas

No object selected

Query 1

```
62 • DESC IssueStatus;
63 # ISBN stands for International Standard Book Number.
64
65 -- 6. RETURN STATUS (Logs)
66 • CREATE TABLE ReturnStatus (
67     Return_Id VARCHAR(10) PRIMARY KEY,
68     Return_cust VARCHAR(30),
69     Return_book_name VARCHAR(80),
70     Return_date DATE,
71     isbn_book2 VARCHAR(25),
72     FOREIGN KEY (isbn_book2) REFERENCES Books(ISBN) ON DELETE CASCADE
73 );
74 • DESC ReturnStatus;
```

Result Grid

Field	Type	Null	Key	Default	Extra
Return_id	varchar(10)	NO	PRI	NULL	
Return_cust	varchar(30)	YES		NULL	
Return_book_name	varchar(80)	YES		NULL	
Return_date	date	YES		NULL	
isbn_book2	varchar(25)	YES	MUL	NULL	

Result 9

Action	Time	Action	Message	Duration / Fetch
25	11:15:24	CREATE TABLE ReturnStatus ( Return_id VARCHAR(10) PRIMARY KEY, Return_cust VARCHAR(30), ...	0 row(s) affected	0.109 sec
26	11:15:25	DESC ReturnStatus	5 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

Step 07  
Create table 'ReturnStatus'

**Step 08**  
Insert Values into each tables  
and show data in it

The screenshot shows the MySQL Workbench interface. In the top-left, the Navigator pane displays the schema structure, including the library schema which contains the books and branch tables. The SQL editor tab is active, showing the following SQL code:

```

76 -- 2. INSERT VALUES (The Data)
77
78
79
80
81 • INSERT INTO branch VALUES
82 ('B001', 'M101', '123 Main St', '+919099988676'),
83 ('B002', 'M102', '456 Elm St', '+919099988677'),
84 ('B003', 'M103', '789 Oak St', '+919099988678'),
85 ('B004', 'M104', '567 Pine St', '+919099988679'),
86 ('B005', 'M105', '890 Maple St', '+919099988680');
87 • SELECT * FROM branch;
88

```

The Results Grid below shows the data inserted into the branch table:

Branch_no	Manager_id	Branch_address	Contact_no
B001	M101	123 Main St	+919099988676
B002	M102	456 Elm St	+919099988677
B003	M103	789 Oak St	+919099988678
B004	M104	567 Pine St	+919099988679
B005	M105	890 Maple St	+919099988680

The Output pane at the bottom shows the log entries for the insert and select operations:

Action	Time	Action	Message	Duration / Fetch
27	11:19:08	INSERT INTO branch VALUES ('B001', 'M101', '123 Main St', '+919099988676'), ('B002', 'M102', '456 Elm St', '+919099988677'), ('B003', 'M103', '789 Oak St', '+919099988678'), ('B004', 'M104', '567 Pine St', '+919099988679'), ('B005', 'M105', '890 Maple St', '+919099988680')	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.062 sec
28	11:19:08	SELECT * FROM branch LIMIT 0, 1000	5 row(s) returned	0.016 sec / 0.000 sec

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

employee

- Columns
- Emp\_id
- Emp\_name
- Position
- Salary
- Branch\_no

Indexes

Foreign Keys

Triggers

issuestatus

returnstatus

Views

Administration Schemas

Information

Table: employee

Columns:

Emp_id	varchar(10) PK
Emp_name	varchar(30)
Position	varchar(30)
Salary	decimal(10, 2)
Branch_no	varchar(10)

Result Grid

Emp_id	Emp_name	Position	Salary	Branch_no
E101	John Doe	Manager	60000.00	B001
E102	Jane Smith	Clerk	45000.00	B002
E103	Mike Johnson	Librarian	55000.00	B003
E104	Emily Davis	Assistant	40000.00	B004
E105	Sarah Brown	Assistant	42000.00	B005

employee 11 x

Action Output

#	Time	Action	Message	Duration / Fetch
31	11.24.09	INSERT INTO employee VALUES ('E101', 'John Doe', 'Manager', 60000.00, 'B001'), ('E102', 'Jane Smith', 'Clerk', 45000.00, 'B002'), ('E103', 'Mike Johnson', 'Librarian', 55000.00, 'B003'), ('E104', 'Emily Davis', 'Assistant', 40000.00, 'B004'), ('E105', 'Sarah Brown', 'Assistant', 42000.00, 'B005');	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.031 sec
32	11.24.09	SELECT * FROM employee LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS library

Tables books

Columns ISBN Book\_title Category Rental\_Price Status Author Publisher

Indexes Foreign Keys

Administration Schemas Information

Table: books

Columns:

ISBN	Book_title	Category	Rental_Price	Status	Author	Publisher
varchar(25)	varchar(80)	varchar(30)	decimal(10,2)	enum('Yes','No')	varchar(30)	varchar(30)

97  
98 • INSERT INTO books VALUES  
99 ('978-0-553-29698-2', 'The Catcher in the Rye', 'Classic', 7.00, 'yes', 'J.D. Salinger', 'Little, Brown and Company'),  
100 ('978-0-330-25864-8', 'Animal Farm', 'Classic', 5.50, 'yes', 'George Orwell', 'Penguin Books'),  
101 ('978-0-14-118776-1', 'One Hundred Years of Solitude', 'Literary Fiction', 6.50, 'yes', 'Gabriel Garcia Marquez', 'Penguin Books'),  
102 ('978-0-525-47535-5', 'The Great Gatsby', 'Classic', 8.00, 'yes', 'F. Scott Fitzgerald', 'Scribner'),  
103 ('978-0-141-44171-6', 'Jane Eyre', 'Classic', 4.00, 'yes', 'Charlotte Bronte', 'Penguin Classics'),  
104 ('978-0-387-37848-1', 'The Alchemist', 'Fiction', 2.50, 'yes', 'Paulo Coelho', 'HarperOne'),  
105 ('978-0-679-70489-8', 'Harry Potter and the Sorcerer's Stone', 'Fantasy', 7.00, 'yes', 'J.K. Rowling', 'Scholastic'),  
106 ('978-0-7432-4722-4', 'The Da Vinci Code', 'Mystery', 8.00, 'yes', 'Dan Brown', 'Doubleday'),  
107 ('978-0-89-957887-9', 'A Game of Thrones', 'Fantasy', 7.50, 'yes', 'George R.R. Martin', 'Bantam'),  
108 ('978-0-393-85081-8', 'A People's History of the United States', 'History', 9.00, 'yes', 'Howard Zinn', 'Harper Perennial'),  
109 ('978-0-19-280551-1', 'The Guns of August', 'History', 7.00, 'yes', 'Barbara W. Tuchman', 'Oxford University Press'),  
110 ('978-0-387-58837-1', 'Sapiens: A Brief History of Humankind', 'History', 8.00, 'yes', 'Yuval Noah Harari', 'Harper Perennial'),  
111 ('978-0-375-41398-8', 'The Diary of a Young Girl', 'History', 6.50, 'yes', 'Anne Frank', 'Bantam'),  
112 ('978-0-14-044930-3', 'The Histories', 'History', 5.50, 'yes', 'Herodotus', 'Penguin Classics'),  
113 ('978-0-393-91257-8', 'Guns, Germs, and Steel: The Fates of Human Societies', 'History', 7.00, 'yes', 'Jared Diamond', 'W. W. Norton & Company'),  
114 ('978-0-141-44171-6', '1491: New Revelations of the Americas Before Columbus', 'History', 6.50, 'yes', 'Charles C. Mann', 'Vintage Books')  
115 ('978-0-7432-7357-1', '1491: New Revelations of the Americas Before Columbus', 'History', 6.50, 'yes', 'Charles C. Mann', 'Vintage Books')  
116 • SELECT \* FROM books;  
117

Result Grid | Filter Rows: | Edits | Export/Import: | Wrap Cell Contents: |

ISBN	Book_title	Category	Rental_Price	Status	Author	Publisher
978-0-09-957807-9	A Game of Thrones	Fantasy	7.50	Yes	George R.R. Martin	Bantam
978-0-14-044930-3	The Histories	History	5.50	Yes	Herodotus	Penguin Classics
978-0-14-118776-1	One Hundred Years of Solitude	Literary Fiction	6.50	Yes	Gabriel Garcia Marquez	Penguin Books
978-0-141-44171-6	Jane Eyre	Classic	4.00	Yes	Charlotte Bronte	Penguin Classics
978-0-19-280551-1	The Guns of August	History	7.00	Yes	Barbara W. Tuchman	Oxford University Press

books 13 x

Output

Action Output

\* Time Action

34 11:25:44 SELECT \* FROM books LIMIT 0, 1000

Message 16 row(s) returned

Duration / Fetch 0.015 sec / 0.000 sec

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

library

- Tables
  - books
  - branch
  - customer
- Columns
- Indexes
- Foreign Keys
- Triggers
- employee
- issuesstatus
- returnstatus

Views

Stored Procedures

Administration Schemas

Information

Table: customer

Columns:

Customer_Id	Customer_name	Customer_address	Reg_date
Customer_Id	varchar(10)		PK
Customer_name	varchar(30)		
Customer_address	varchar(50)		
Reg_date	date		

```

109   ('978-0-353-05081-8', 'A People's History of the United States', 'History', 9.00, 'yes', 'Howard Zinn', 'Harper Perennial'),
110   ('978-0-19-280551-1', 'The Guns of August', 'History', 7.00, 'yes', 'Barbara W. Tuchman', 'Oxford University Press'),
111   ('978-0-307-50837-1', 'Sapiens: A Brief History of Humankind', 'History', 6.00, 'yes', 'Yuval Noah Harari', 'Harper Perennial'),
112   ('978-0-375-41398-8', 'The Diary of a Young Girl', 'History', 6.50, 'yes', 'Anne Frank', 'Bantam'),
113   ('978-0-14-044930-3', 'The Histories', 'History', 5.50, 'yes', 'Herodotus', 'Penguin Classics'),
114   ('978-0-393-91257-8', 'Guns, Germs, and Steel: The Fates of Human Societies', 'History', 7.00, 'yes', 'Jared Diamond', 'W. W. Norton & Company'),
115   ('978-0-7432-7357-1', '1491: New Revelations of the Americas Before Columbus', 'History', 6.50, 'yes', 'Charles C. Mann', 'Vintage Books');

116 • SELECT * FROM books
117
118

119 • INSERT INTO customer VALUES
120   ('C101', 'Alice Johnson', '123 Main St', '2021-05-15'),
121   ('C102', 'Bob Smith', '456 Elm St', '2021-06-20'),
122   ('C103', 'Carol Davis', '789 Oak St', '2021-07-10'),
123   ('C104', 'Dave Wilson', '567 Pine St', '2021-08-05'),
124   ('C105', 'Eve Brown', '890 Maple St', '2021-09-25');

125 • SELECT * FROM CUSTOMER;
126
127
128

```

Result Grid

Customer_Id	Customer_name	Customer_address	Reg_date
C101	Alice Johnson	123 Main St	2021-05-15
C102	Bob Smith	456 Elm St	2021-06-20
C103	Carol Davis	789 Oak St	2021-07-10
C104	Dave Wilson	567 Pine St	2021-08-05
C105	Eve Brown	890 Maple St	2021-09-25

CUSTOMER 14 ×

Output

Action Output

*	Time	Action	Message	Duration / Fetch
36	11:29:27	INSERT INTO customer VALUES (C101,'Alice Johnson','123 Main St','2021-05-15'),(C102,'Bob Smith','456 Elm St','2021-06-20'),(C103,'Carol Davis','789 Oak St','2021-07-10'),(C104,'Dave Wilson','567 Pine St','2021-08-05'),(C105,'Eve Brown','890 Maple St','2021-09-25');	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.047 sec

Object Info Session

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

library

Tables

books branch customer employee issuestatus

Columns

Indexes Foreign Keys Triggers returnstatus Views Stored Procedures

Administration Schemas

Information

Table: issuestatus

Columns:

Issue_Id	varchar(10) PK
Issued_cust	varchar(10)
Issued_book_name	varchar(80)
Issue_date	date
Isbn_book	varchar(25)

Query 1

```
126
127
128
129 • INSERT INTO IssueStatus VALUES
130 ('IS101', 'C101', 'The Catcher in the Rye', '2023-05-01', '978-0-553-29698-2'),
131 ('IS102', 'C102', 'The Da Vinci Code', '2023-05-02', '978-0-7432-4722-4'),
132 ('IS103', 'C103', '1491: New Revelations of the Americas Before Columbus', '2023-05-03', '978-0-7432-7357-1'),
133 ('IS104', 'C104', 'Sapiens: A Brief History of Humankind', '2023-05-04', '978-0-307-58837-1'),
134 ('IS105', 'C105', 'The Diary of a Young Girl', '2023-05-05', '978-0-375-41398-8');
135 • SELECT * FROM issuestatus;
136
137
138
139
140
141
142
143
144
145
146
```

Result Grid

Issue_Id	Issued_cust	Issued_book_name	Issue_date	Isbn_book
IS101	C101	The Catcher in the Rye	2023-05-01	978-0-553-29698-2
IS102	C102	The Da Vinci Code	2023-05-02	978-0-7432-4722-4
IS103	C103	1491: New Revelations of the Americas Before Columbus	2023-05-03	978-0-7432-7357-1
IS104	C104	Sapiens: A Brief History of Humankind	2023-05-04	978-0-307-58837-1
IS105	C105	The Diary of a Young Girl	2023-05-05	978-0-375-41398-8

issuestatus 15 x

Output

Action Output

Message

38 11:31:23 INSERT INTO IssueStatus VALUES (IS101, 'C101', 'The Catcher in the Rye', '2023-05-01', '978-0-553-29698-2') 5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0 Duration / Fetch 0.032 sec

Object Info Session

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS library

Tables books branch customer employee issuesstatus returnstatus

Columns

- Return\_id
- Return\_cust
- Return\_book\_name
- Return\_date

Administration Schemas

Information Table: returnstatus

Columns:

Return_id	varchar(10) PK	Return_cust	varchar(30)	Return_book_name	varchar(80)	Return_date	date	isbn_book2	varchar(20)
RS101	C101			The Catcher in the Rye	'2023-06-06'		978-0-553-29698-2		
RS102	C102			The Da Vinci Code	'2023-06-07'		978-0-7432-4722-4		
RS103	C105			The Diary of a Young Girl	'2023-06-08'		978-0-375-41398-6		
RS104	C108			The Histories	'2023-06-09'		978-0-14-044930-3		
RS105	C110			A Game of Thrones	'2023-06-10'		978-0-09-957807-9		

Result Grid

Return_id	Return_cust	Return_book_name	Return_date	isbn_book2
RS101	C101	The Catcher in the Rye	2023-06-06	978-0-553-29698-2
RS102	C102	The Da Vinci Code	2023-06-07	978-0-7432-4722-4
RS103	C105	The Diary of a Young Girl	2023-06-08	978-0-375-41398-6
RS104	C108	The Histories	2023-06-09	978-0-14-044930-3
RS105	C110	A Game of Thrones	2023-06-10	978-0-09-957807-9

returnstatus 16 x

Output

Action Output

Message

40 11:32:50 INSERT INTO ReturnStatus VALUES (RS101', 'C101', 'The Catcher in the Rye', '2023-06-06', '978-0-553-29698-2') 5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0 Duration / Fetch 0.015 sec

Object Info Session

# Queries

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

The screenshot shows the MySQL Workbench interface. The top navigation bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar displays the Navigator with SCHEMAS (library) and TABLES (books, branch, customer, employee, issuestatus, returnstatus). Below the Navigator are sections for Views, Stored Procedures, and Functions, along with links to milk, milkdb, and student databases. The main area is titled 'Query 1' and contains the following SQL code:

```
149
150
151
152 /*Queries*/
153
154 # 1. Retrieve the book title, category, and rental price of all available books.
155
156 • SELECT
157     Book_title, Category, Rental_Price
158     FROM
159     Books
160     WHERE
161     Status = 'YES';
162
```

The results are displayed in a 'Result Grid' table:

Book_title	Category	Rental_Price
A Game of Thrones	Fantasy	7.50
The Histories	History	5.50
One Hundred Years of Solitude	Literary Fiction	6.50
Jane Eyre	Classic	4.00
The Guns of August	History	7.00
The Alchemist	Fiction	2.50
Sapiens: A Brief History of Humankind	History	8.00
Animal Farm	Classic	5.50
The Diary of a Young Girl	History	6.50
A People's History of the United States	History	9.00
Guns, Germs, and Steel: The Fates of...	History	7.00
The Great Gatsby	Classic	8.00
The Catcher in the Rye	Classic	7.00
Uncle Tom's Cabin	Entertainment	7.00

Below the table, the 'Output' section shows the query log:

#	Time	Action	Message	Duration / Fetch
44	11:39:04	SELECT COUNT(Book_title) from books LIMIT 0, 1000	1 row(s) returned	0.016 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 top navigation bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar has sections for Navigator, Schemas, Administration, and Information. The Navigator section shows the library schema with tables books, branch, customer, and employee. The employee table has columns Emp\_id, Emp\_name, Position, Salary, and Branch\_no. The Administration section shows Schemas. The main area is titled 'Query 1' and contains the following SQL code:

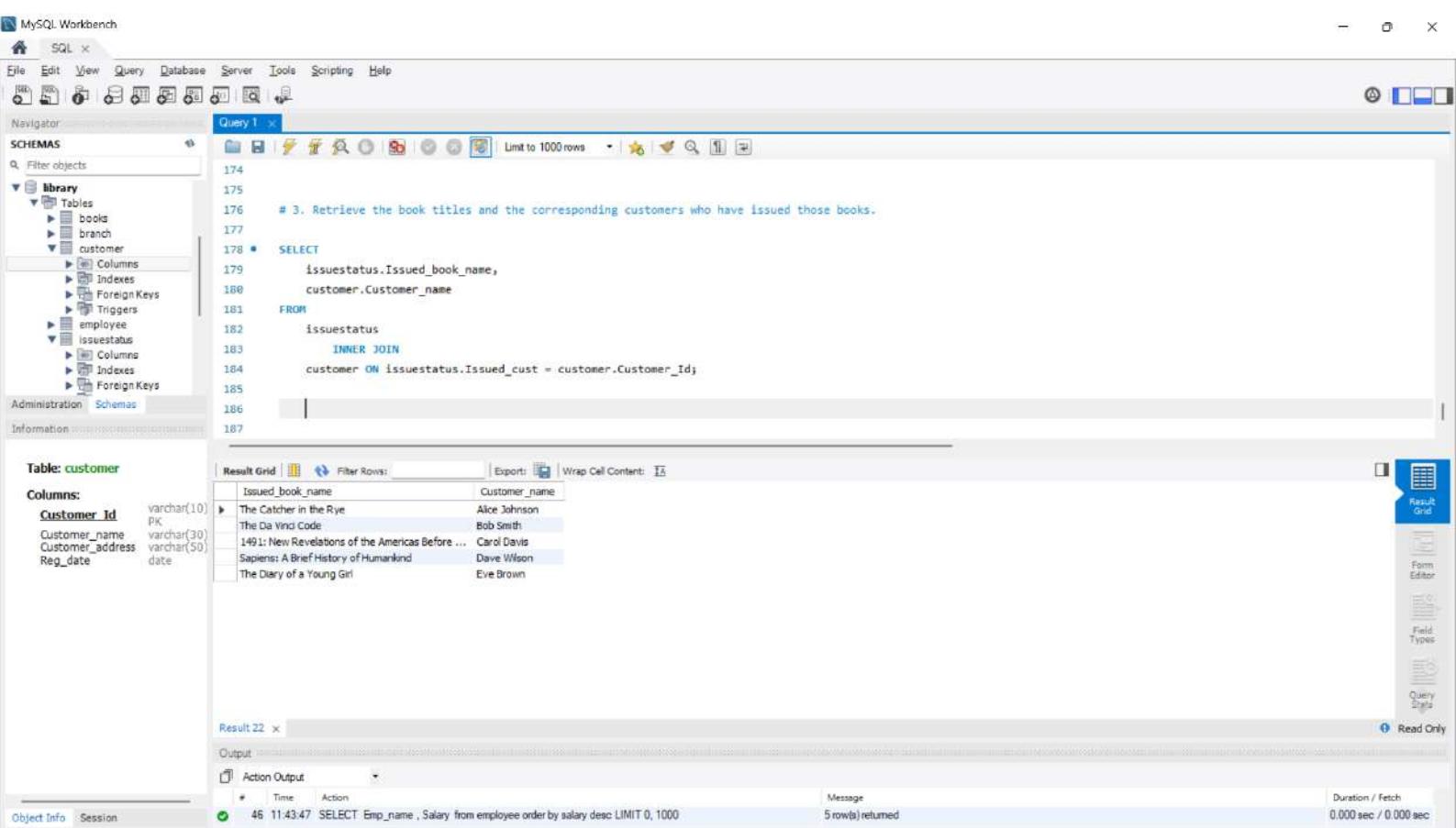
```
164
165
166 # 2. List the employee names and their respective salaries in descending order of salary.
167
168 • SELECT
169     Emp_name, Salary
170     FROM
171     employee
172     ORDER BY salary DESC;
173
174
175
176
177
```

The results are displayed in a 'Result Grid' table:

Emp_name	Salary
John Doe	60000.00
Mike Johnson	55000.00
Jane Smith	45000.00
Sarah Brown	42000.00
Emily Davis	40000.00

The bottom status bar shows the session details: Action Output, Time 45 11:39:22, Action SELECT Book\_Title, Category, Rental\_Price FROM Books WHERE Status = 'YES' LIMIT 0, 1000, Message 16 row(s) returned, Duration / Fetch 0.016 sec / 0.000 sec, and Read Only.

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



The screenshot shows the MySQL Workbench interface with a query editor and a results grid. The query editor contains the following SQL code:

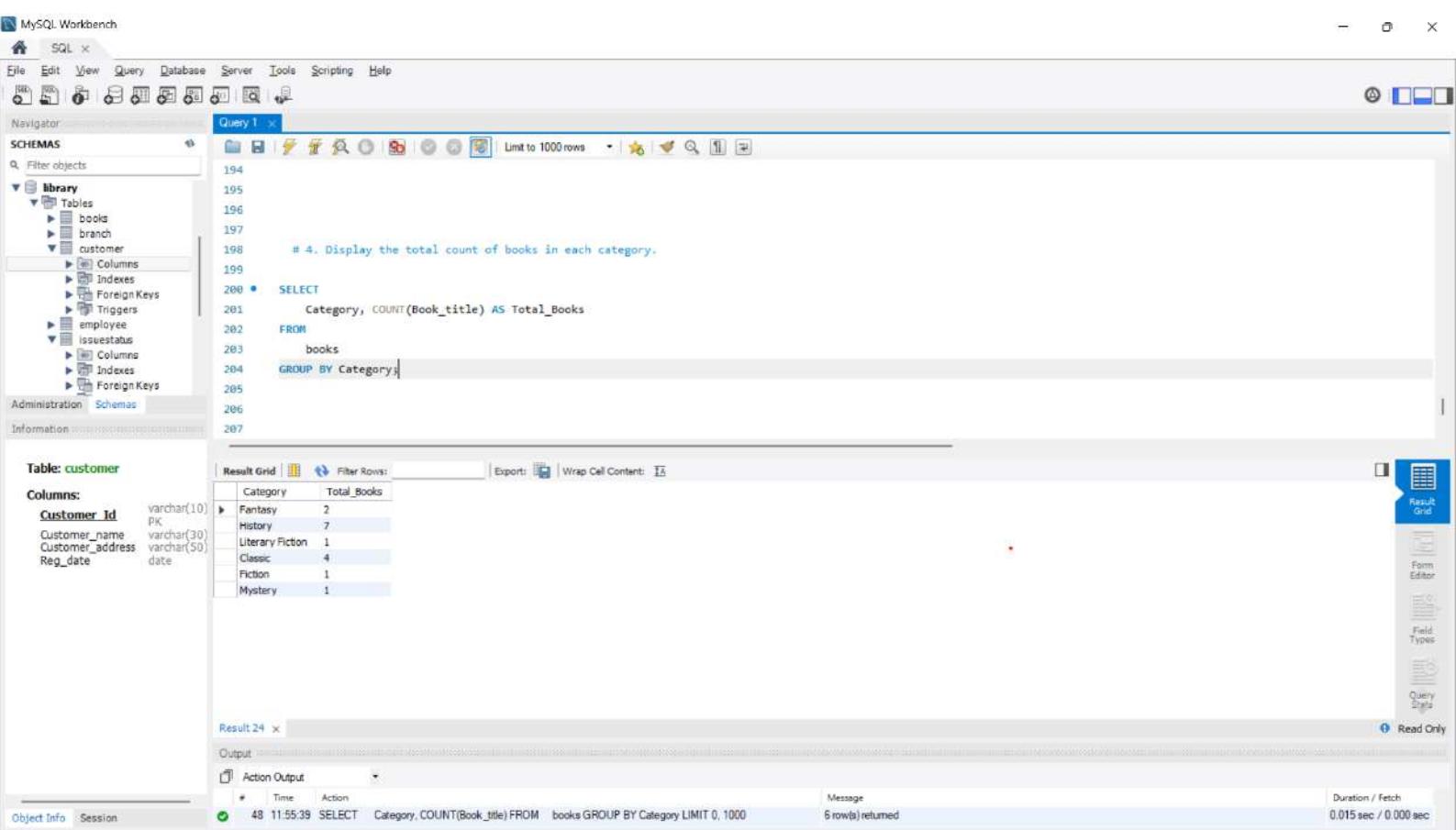
```
174
175
176 # 3. Retrieve the book titles and the corresponding customers who have issued those books.
177
178 * SELECT
179     issuestatus.Issued_book_name,
180     customer.Customer_name
181 FROM
182     issuestatus
183     INNER JOIN
184     customer ON issuestatus.Issued_cust = customer.Customer_Id;
185
186
187
```

The results grid displays the following data:

Issued_book_name	Customer_name
The Catcher in the Rye	Alice Johnson
The Da Vinci Code	Bob Smith
1491: New Revelations of the Americas Before Columbus	Carol Davis
Sapiens: A Brief History of Humankind	Dave Wilson
The Diary of a Young Girl	Eve Brown

Below the results grid, the message "5 row(s) returned" is displayed. The status bar at the bottom shows the query was executed at 11:43:47 and took 0.000 sec / 0.000 sec.

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



The screenshot shows the MySQL Workbench interface. The left sidebar displays the 'SCHEMAS' tree, which includes the 'library' schema with tables like 'books', 'branch', and 'customer'. The main area contains a SQL editor window titled 'Query 1' with the following code:

```
194
195
196
197
198    # 4. Display the total count of books in each category.
199
200 •   SELECT
201     Category, COUNT(Book_title) AS Total_Books
202   FROM
203     books
204   GROUP BY Category;
```

The results are displayed in a 'Result Grid' table:

Category	Total_Books
Fantasy	2
History	7
Literary Fiction	1
Classic	4
Fiction	1
Mystery	1

The status bar at the bottom shows the query was executed successfully with 6 rows returned in 0.015 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. In the top navigation bar, 'File', 'Edit', 'View', 'Query', 'Database', 'Server', 'Tools', 'Scripting', and 'Help' are visible. The 'Query' tab is selected. Below the menu is the 'Navigator' pane, which displays the 'SCHEMAS' section with 'library' expanded, showing 'Tables' (books, branch, customer, employee), 'Columns' (Emp\_Id, Emp\_name, Position, Salary, Branch\_no), 'Indexes', and 'Foreign Keys'. The 'Administration' and 'Schemas' tabs are also present. The main area contains a 'Query 1' window with the following SQL code:

```
209
210  # 5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.
211
212  • SELECT
213      emp_name, Position
214  FROM
215      employee
216  WHERE
217      salary > 50000;
218
219
220
```

Below the code is a 'Result Grid' showing the results of the query:

emp_name	Position
John Doe	Manager
Mike Johnson	Librarian

The 'Object Info' and 'Session' tabs are at the bottom left, and a 'Read Only' button is at the bottom right.

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

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

library

- Tables
  - books
  - branch
  - customer
  - employee
    - Columns
    - Indexes
    - Foreign Keys
  - issuestatus
    - Columns
    - Indexes
    - Foreign Keys

Administration Schemas

Information

Table: employee

Columns:

Emp_id	varchar(10)
PK	
Emp_name	varchar(30)
Position	varchar(30)
Salary	decimal(10,2)
Branch_no	varchar(10)

Query 1

```
222
223
224
225 # 6. Display the branch numbers and the total count of employees in each branch.
226
227
228 • SELECT
229     branch_no, COUNT(emp_id) AS total_count
230     FROM
231         employee
232     GROUP BY branch_no;
```

Result Grid

branch_no	total_count
B001	1
B002	1
B003	1
B004	1
B005	1

Result 28

Action Output

#	Time	Action	Message	Duration / Fetch
53	12:09:12	select branch_no , count(emp_id) from employee group by branch_no LIMIT 0, 1000	Error Code: 1054. Unknown column 'branch_no' in 'field list'	0.015 sec
54	12:09:30	select branch_no , count(emp_id) from employee group by branch_no LIMIT 0, 1000	Error Code: 1054. Unknown column 'branch_no' in 'group statement'	0.000 sec
55	12:09:47	select branch_no , count(emp_id) from employee group by branch_no LIMIT 0, 1000	5 row(s) returned	0.015 sec / 0.000 sec
56	12:10:05	select branch_no , count(emp_id) AS total_count from employee group by branch_no LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

7. Display the names of customers who have issued books in the month of May 2023.

The screenshot shows the MySQL Workbench interface with a query editor window. The query is:

```
233
234
235
236
237 # 7. Display the names of customers who have issued books in the month of May 2023.
238
239
240 • SELECT
241     customer.Customer_name
242     FROM
243         customer
244     INNER JOIN
245         issuestatus ON customer.Customer_Id = issuestatus.Issued_cust
246     WHERE
247         issuestatus.Issue_date >= "2023-05-01"
248         AND issuestatus.Issue_date <= '2023-05-30';
249
```

The results grid shows the following data:

Customer_name
Alice Johnson
Bob Smith
Carol Davis
Dave Wilson
Eve Brown

The output pane shows the following log entries:

#	Time	Action	Message	Duration / Fetch
58	12:16:11	SELECT	customer.Customer_name FROM customer INNER JOIN issuestatus ON customer.Cus...	0 row(s) returned 0.000 sec / 0.000 sec
59	12:16:51	SELECT	customer.Customer_name FROM customer INNER JOIN issuestatus ON customer.Cus...	5 row(s) returned 0.000 sec / 0.000 sec

8. Retrieve book\_title from book table containing

MySQL Workbench

File Edit View Query Database Server Tools Scripting Help

Navigator

Schemas library

Tables books branch customer employee issuestatus

Columns

Indexes

Foreign Keys

Triggers

returnstatus

Views

Stored Procedures

Administration Schemas

Information

Table: issuestatus

Columns:

Issue_Id	varchar(10)
Issued_cust	PK
Issued_book_name	varchar(100)
Issue_date	date
ISBN_book	varchar(25)

Result Grid | Filter Rows: \_\_\_\_\_ | Export: | Wrap Cell Content: |

book_title
The Histories
The Guns of August
Sapiens: A Brief History of Humankind
The Diary of a Young Girl
A People's History of the United States
Guns, Germs, and Steel: The Fates of Human S...
1491: New Revelations of the Americas Before ...

Query 1 x

260  
261  
262 # 8. Retrieve book\_title from book table containing 'history'.  
263  
264  
265 • SELECT  
266 book\_title  
267 FROM  
268 books  
269 WHERE  
270 Category = 'history';  
271  
272  
273  
274

books31 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
59	12:16:51	SELECT customer.Customer_name FROM customer INNER JOIN issuestatus ON customer.Cus... 5 row(s) returned	5 row(s) returned	0.000 sec / 0.000 sec
60	12:18:22	SELECT book_title FROM books WHERE Category = 'history' LIMIT 0, 1000 7 row(s) returned	7 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

\*\*\*\*\*