

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

Attributes for the tables:

1. Branch

- Branch_no - Set as PRIMARY KEY
- Manager_Id
- Branch_address
- Contact_no

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

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

4. Customer

- Customer_Id - Set as PRIMARY KEY
- Customer_name
- Customer_address
- Reg_date

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

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

Display all the tables and Write the queries for the following :

1. Retrieve the book title, category, and rental price of all available books.
2. List the employee names and their respective salaries in descending order of salary.
3. Retrieve the book titles and the corresponding customers who have issued those books.
4. Display the total count of books in each category.
5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.
6. List the customer names who registered before 2022-01-01 and have not issued any books yet.
7. Display the branch numbers and the total count of employees in each branch.
8. Display the names of customers who have issued books in the month of June 2023.
9. Retrieve book_title from book table containing history.
10. Retrieve the branch numbers along with the count of employees for branches having more than 5 employees
11. Retrieve the names of employees who manage branches and their respective branch addresses.
12. Display the names of customers who have issued books with a rental price higher than Rs. 25.

Answers:

Queries for Table:

Create database Library;

Use Library;

CREATE TABLE Branch (

Branch_no INT PRIMARY KEY,

Manager_Id INT,

Branch_address VARCHAR(255),

Contact_no VARCHAR(15)

);

INSERT INTO Branch (Branch_no, Manager_Id, Branch_address, Contact_no) VALUES

(1, 101, '123 Main St', '123-456-7890'),

(2, 102, '456 Elm St', '234-567-8901'),

(3, 103, '789 Oak St', '345-678-9012'),

(4, 104, '101 Pine St', '456-789-0123'),

(5, 105, '202 Maple St', '567-890-1234');

Select* from Branch;

CREATE TABLE Employee (

Emp_Id INT PRIMARY KEY,

Emp_name VARCHAR(100),

Position VARCHAR(50),

Salary DECIMAL(10, 2),

Branch_no INT,

FOREIGN KEY (Branch_no) REFERENCES Branch(Branch_no)

);

INSERT INTO Employee (Emp_Id, Emp_name, Position, Salary, Branch_no) VALUES

(101, 'Alice Smith', 'Manager', 60000, 1),

(102, 'Bob Johnson', 'Assistant', 45000, 1),

(103, 'Carol White', 'Manager', 70000, 2),

(104, 'David Brown', 'Clerk', 40000, 3),

(105, 'Eve Black', 'Assistant', 55000, 3);

Select* from Employee;

CREATE TABLE Books (

ISBN VARCHAR(13) PRIMARY KEY,

Book_title VARCHAR(255),

Category VARCHAR(100),

Rental_Price DECIMAL(10, 2),

Status ENUM('yes', 'no'),

Author VARCHAR(100),

Publisher VARCHAR(100)

);

INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Publisher) VALUES

('978-3-16-1481', 'History of Art', 'Art', 30, 'yes', 'John Doe', 'ArtPub'),

('978-0-12-3456', 'Advanced Mathematics', 'Science', 25, 'no', 'Jane Roe', 'SciPub'),

('978-1-23-4567', 'Modern History', 'History', 35, 'yes', 'Mary Major', 'HisPub'),

('978-9-87-6543', 'World Geography', 'Geography', 20, 'yes', 'Paul Minor', 'GeoPub'),

('978-8-76-5432', 'Physics Fundamentals', 'Science', 40, 'no', 'Eve Adams', 'SciPub');

Select* from Books;

CREATE TABLE Customer (

Customer_Id INT PRIMARY KEY,

Customer_name VARCHAR(100),

Customer_address VARCHAR(255),

Reg_date DATE

);

INSERT INTO Customer (Customer_Id, Customer_name, Customer_address, Reg_date) VALUES

(201, 'John Williams', '123 Maple St', '2020-06-15'),

(202, 'Jane Miller', '456 Oak St', '2021-07-20'),

(203, 'Jack Davis', '789 Pine St', '2022-08-25'),

(204, 'Jill Wilson', '101 Elm St', '2023-09-30'),

(205, 'Jerry Martin', '202 Cedar St', '2019-10-05');

Select* from Customer;

CREATE TABLE IssueStatus (

```

Issue_Id INT PRIMARY KEY,
Issued_cust INT,
Issued_book_name VARCHAR(255),
Issue_date DATE,
Isbn_book VARCHAR(13),
FOREIGN KEY (Issued_cust) REFERENCES Customer(Customer_Id),
FOREIGN KEY (Isbn_book) REFERENCES Books(ISBN)
);

INSERT INTO IssueStatus (Issue_Id, Issued_cust, Issued_book_name, Issue_date, Isbn_book) VALUES
(1, 201, 'History of Art', '2023-06-05', '978-3-16-1481'),
(2, 202, 'Modern History', '2023-06-10', '978-1-23-4567'),
(3, 203, 'World Geography', '2023-06-15', '978-9-87-6543'),
(4, 204, 'History of Art', '2023-07-01', '978-3-16-1481'),
(5, 205, 'Advanced Mathematics', '2023-07-05', '978-0-12-3456');

Select* from IssueStatus;

CREATE TABLE ReturnStatus (
Return_Id INT PRIMARY KEY,
Return_cust INT,
Return_book_name VARCHAR(255),
Return_date DATE,
Isbn_book2 VARCHAR(13),
FOREIGN KEY (Return_cust) REFERENCES Customer(Customer_Id),
FOREIGN KEY (Isbn_book2) REFERENCES Books(ISBN)
);

INSERT INTO ReturnStatus (Return_Id, Return_cust, Return_book_name, Return_date, Isbn_book2)
VALUES
(1, 201, 'History of Art', '2023-06-20', '978-3-16-1481'),
(2, 202, 'Modern History', '2023-06-25', '978-1-23-4567'),
(3, 203, 'World Geography', '2023-06-30', '978-9-87-6543'),
(4, 204, 'History of Art', '2023-07-10', '978-3-16-1481'),
(5, 205, 'Advanced Mathematics', '2023-07-15', '978-0-12-3456');

```

Select* from ReturnStatus;

Screenshots of tables.

The first screenshot shows a MySQL Workbench window with a SQL query in the 'SQL File 3' editor. The query is:

```
11 (2, 102, '456 Elm St', '234-567-8901'),
12 (3, 103, '789 Oak St', '345-678-9012'),
13 (4, 104, '101 Pine St', '456-789-0123'),
14 (5, 105, '202 Maple St', '567-890-1234');
15 • Select* from Branch;
```

The 'Result Grid' shows the following data:

Branch_no	Manager_Id	Branch_address	Contact_no
1	101	123 Main St	123-456-7890
2	102	456 Elm St	234-567-8901
3	103	789 Oak St	345-678-9012
4	104	101 Pine St	456-789-0123
5	105	202 Maple St	567-890-1234

The 'Output' pane shows the following actions:

#	Time	Action	Message	Duration / Fetch
1	16:13:46	Create database Library	1 row(s) affected	0.000 sec
2	16:13:53	Use Library	0 row(s) affected	0.000 sec
3	16:16:30	CREATE TABLE Branch (Branch_no INT PRIMARY KEY, Manager_Id INT, ...	0 row(s) affected	0.016 sec
4	16:17:03	INSERT INTO Branch (Branch_no, Manager_Id, Branch_address, Contact_no) VAL...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.015 sec
5	16:17:23	Select* from Branch LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

The second screenshot shows the same MySQL Workbench window with a different SQL query in the 'SQL File 3' editor. The query is:

```
26 (102, 'Bob Johnson', 'Assistant', 45000, 1),
27 (103, 'Carol White', 'Manager', 70000, 2),
28 (104, 'David Brown', 'Clerk', 40000, 3),
29 (105, 'Eve Black', 'Assistant', 55000, 3);
30 • Select* from Employee;
```

The 'Result Grid' shows the following data:

Emp_Id	Emp_name	Position	Salary	Branch_no
101	Alice Smith	Manager	60000.00	1
102	Bob Johnson	Assistant	45000.00	1
103	Carol White	Manager	70000.00	2
104	David Brown	Clerk	40000.00	3
105	Eve Black	Assistant	55000.00	3

The 'Output' pane shows the following actions:

#	Time	Action	Message	Duration / Fetch
4	16:17:03	INSERT INTO Branch (Branch_no, Manager_Id, Branch_address, Contact_no) VA...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.015 sec
5	16:17:23	Select* from Branch LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
6	16:20:29	CREATE TABLE Employee (Emp_Id INT PRIMARY KEY, Emp_name VARCHAR...	0 row(s) affected	0.062 sec
7	16:20:57	INSERT INTO Employee (Emp_Id, Emp_name, Position, Salary, Branch_no) VALU...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.016 sec
8	16:21:14	Select* from Employee LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- country
- d32
- dated32
- employ
- managers
- products
- sales
- sales1
- school
- school1
- school2
- sys
- testdb
- training
- workers

Administration Schemas

Information

No object selected

Object Info Session

SQL File 3'

Limit to 1000 rows

```
42 ('978-0-12-3456', 'Advanced Mathematics', 'Science', 25, 'no', 'Jane Roe', 'SciPub'),
43 ('978-1-23-4567', 'Modern History', 'History', 35, 'yes', 'Mary Major', 'HisPub'),
44 ('978-9-87-6543', 'World Geography', 'Geography', 20, 'yes', 'Paul Minor', 'GeoPub'),
45 ('978-8-76-5432', 'Physics Fundamentals', 'Science', 40, 'no', 'Eve Adams', 'SciPub');
46 • Select* from Books;
```

Result Grid

ISBN	Book_title	Category	Rental_Price	Status	Author	Publisher
978-0-12-3456	Advanced Mathematics	Science	25.00	no	Jane Roe	SciPub
978-1-23-4567	Modern History	History	35.00	yes	Mary Major	HisPub
978-3-16-1481	History of Art	Art	30.00	yes	John Doe	ArtPub
978-8-76-5432	Physics Fundamentals	Science	40.00	no	Eve Adams	SciPub
978-9-87-6543	World Geography	Geography	20.00	yes	Paul Minor	GeoPub

Books 3 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
8	16:21:14	Select* from Employee LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
9	16:22:43	CREATE TABLE Books (ISBN VARCHAR(13) PRIMARY KEY, Book_title VA...	0 row(s) affected	0.031 sec
10	16:23:29	INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Pu...	Error Code: 1406. Data too long for column 'ISBN' at row 1	0.000 sec
11	16:24:54	INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Pu...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
12	16:25:05	Select* from Books LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Context Help Snippets

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- country
- d32
- dated32
- employ
- managers
- products
- sales
- sales1
- school
- school1
- school2
- sys
- testdb
- training
- workers

Administration Schemas

Information

No object selected

Object Info Session

SQL File 3'

Limit to 1000 rows

```
55 (202, 'Jane Miller', '456 Oak St', '2021-07-20'),
56 (203, 'Jack Davis', '789 Pine St', '2022-08-25'),
57 (204, 'Jill Wilson', '101 Elm St', '2023-09-30'),
58 (205, 'Jerry Martin', '202 Cedar St', '2019-10-05');
59 • Select* from Customer;
```

Result Grid

Customer_Id	Customer_name	Customer_address	Reg_date
201	John Williams	123 Maple St	2020-06-15
202	Jane Miller	456 Oak St	2021-07-20
203	Jack Davis	789 Pine St	2022-08-25
204	Jill Wilson	101 Elm St	2023-09-30
205	Jerry Martin	202 Cedar St	2019-10-05

Customer 4 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
11	16:24:54	INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Pu...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
12	16:25:05	Select* from Books LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
13	16:25:55	CREATE TABLE Customer (Customer_Id INT PRIMARY KEY, Customer_nam...	0 row(s) affected	0.031 sec
14	16:26:15	INSERT INTO Customer (Customer_Id, Customer_name, Customer_address, Reg_d...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
15	16:26:30	Select* from Customer LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Context Help Snippets

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- country
- d32
- dated32
- employ
- managers
- products
- sales
- sales1
- school
- school1
- school
- sys
- testdb
- training
- workers

Administration Schemas

Information

No object selected

SQL File 3" x

Limit to 1000 rows

```
71 (2, 202, 'Modern History', '2023-06-10', '978-1-23-4567'),
72 (3, 203, 'World Geography', '2023-06-15', '978-9-87-6543'),
73 (4, 204, 'History of Art', '2023-07-01', '978-3-16-1481'),
74 (5, 205, 'Advanced Mathematics', '2023-07-05', '978-0-12-3456');
75 • Select* from IssueStatus;
```

Result Grid

Issue_Id	Issued_cust	Issued_book_name	Issue_date	Isbn_book
1	201	History of Art	2023-06-05	978-3-16-1481
2	202	Modern History	2023-06-10	978-1-23-4567
3	203	World Geography	2023-06-15	978-9-87-6543
4	204	History of Art	2023-07-01	978-3-16-1481
5	205	Advanced Mathematics	2023-07-05	978-0-12-3456

IssueStatus 5 x

Apply Revert Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
14	16:26:15	INSERT INTO Customer (Customer_Id, Customer_name, Customer_address, Reg_d...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
15	16:26:30	Select* from Customer LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
16	16:27:10	CREATE TABLE IssueStatus (Issue_Id INT PRIMARY KEY, Issued_cust INT...	0 row(s) affected	0.063 sec
17	16:30:59	INSERT INTO IssueStatus (Issue_Id, Issued_cust, Issued_book_name, Issue_date...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
18	16:32:06	Select* from IssueStatus LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

83°

Search

ENG IN

16:32

14-07-2024

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- country
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- dated32
- employ
- managers
- products
- sales
- sales1
- school
- school1
- school
- sys
- testdb
- training
- workers

Administration Schemas

Information

No object selected

SQL File 3" x

Limit to 1000 rows

```
87 (2, 202, 'Modern History', '2023-06-25', '978-1-23-4567'),
88 (3, 203, 'World Geography', '2023-06-30', '978-9-87-6543'),
89 (4, 204, 'History of Art', '2023-07-10', '978-3-16-1481'),
90 (5, 205, 'Advanced Mathematics', '2023-07-15', '978-0-12-3456');
91 • Select* from ReturnStatus;
```

Result Grid

Return_Id	Return_cust	Return_book_name	Return_date	Isbn_book2
1	201	History of Art	2023-06-20	978-3-16-1481
2	202	Modern History	2023-06-25	978-1-23-4567
3	203	World Geography	2023-06-30	978-9-87-6543
4	204	History of Art	2023-07-10	978-3-16-1481
5	205	Advanced Mathematics	2023-07-15	978-0-12-3456

ReturnStatus 6 x

Apply Revert Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
17	16:30:59	INSERT INTO IssueStatus (Issue_Id, Issued_cust, Issued_book_name, Issue_date...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
18	16:32:06	Select* from IssueStatus LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
19	16:34:32	CREATE TABLE ReturnStatus (Return_Id INT PRIMARY KEY, Return_cust I...	0 row(s) affected	0.078 sec
20	16:36:17	INSERT INTO ReturnStatus (Return_Id, Return_cust, Return_book_name, Return...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
21	16:36:29	Select* from ReturnStatus LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

83°

Search

ENG IN

16:36

14-07-2024

Questions and answers:

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

```
SELECT Book_title, Category, Rental_Price
```

```
FROM Books
```

```
WHERE Status = 'yes';
```

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

```
(5, 205, 'Advanced Mathematics', '2023-07-15', '978-0-12-3456');  
Select* from ReturnStatus;  
SELECT Book_title, Category, Rental_Price  
FROM Books  
WHERE Status = 'yes';
```

The Results Grid shows the following data:

Book_title	Category	Rental_Price
Modern History	History	35.00
History of Art	Art	30.00
World Geography	Geography	20.00

The Output tab shows the following log entries:

#	Time	Action	Message	Duration / Fetch
18	16:32:06	Select* from IssueStatus LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
19	16:34:32	CREATE TABLE ReturnStatus (Return_Id INT PRIMARY KEY, Return_cust ...	0 row(s) affected	0.078 sec
20	16:36:17	INSERT INTO ReturnStatus (Return_Id, Return_cust, Return_book_name, Return...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
21	16:36:29	Select* from ReturnStatus LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
22	16:37:08	SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LI...	3 row(s) returned	0.000 sec / 0.000 sec

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

```
SELECT Emp_name, Salary
```

```
FROM Employee
```

```
ORDER BY Salary DESC;
```

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

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- sales1
- school
- school1
- sys
- testdb
- training
- workers

Administration Schemas

Information

No object selected

SQL File 3"

Limit to 1000 rows

```

93 FROM Books
94 WHERE Status = 'yes';
95 SELECT Emp_name, Salary
96 FROM Employee
97 ORDER BY Salary DESC;

```

Result Grid

Emp_name	Salary
Carol White	70000.00
Alice Smith	60000.00
Eve Black	55000.00
Bob Johnson	45000.00
David Brown	40000.00

Output

Action Output

#	Time	Action	Message	Duration / Fetch
19	16:34:32	CREATE TABLE ReturnStatus (Return_id INT PRIMARY KEY, Return_cust ...	0 row(s) affected	0.078 sec
20	16:36:17	INSERT INTO ReturnStatus (Return_id, Return_cust, Return_book_name, Return...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
21	16:36:29	Select* from ReturnStatus LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
22	16:37:08	SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LI...	3 row(s) returned	0.000 sec / 0.000 sec
23	16:42:07	SELECT Emp_name, Salary FROM Employee ORDER BY Salary DESC LIMIT 0, 1...	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

83°

Search

ENG IN

16:42

14-07-2024

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

```

SELECT b.Book_title, c.Customer_name
FROM IssueStatus i
JOIN Books b ON i.Issbn_book = b.ISBN
JOIN Customer c ON i.Issued_cust = c.Customer_Id;

```

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

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- employ
- managers
- products
- sales
- sales1
- school
- school1
- sys
- testdb
- training
- workers

Administration Schemas

Information

No object selected

SQL File 3"

Limit to 1000 rows

```

97 ORDER BY Salary DESC;
98 SELECT b.Book_title, c.Customer_name
99 FROM IssueStatus i
100 JOIN Books b ON i.Issbn_book = b.ISBN
101 JOIN Customer c ON i.Issued_cust = c.Customer_Id;

```

Result Grid

Book_title	Customer_name
History of Art	John Williams
Modern History	Jane Miller
World Geography	Jack Davis
History of Art	Jill Wilson
Advanced Mathematics	Jerry Martin

Output

Action Output

#	Time	Action	Message	Duration / Fetch
20	16:36:17	INSERT INTO ReturnStatus (Return_id, Return_cust, Return_book_name, Return...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
21	16:36:29	Select* from ReturnStatus LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
22	16:37:08	SELECT Book_title, Category, Rental_Price FROM Books WHERE Status = 'yes' LI...	3 row(s) returned	0.000 sec / 0.000 sec
23	16:42:07	SELECT Emp_name, Salary FROM Employee ORDER BY Salary DESC LIMIT 0, 1...	5 row(s) returned	0.000 sec / 0.000 sec
24	16:43:43	SELECT b.Book_title, c.Customer_name FROM IssueStatus i JOIN Books b ON i.Is...	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

83°

Search

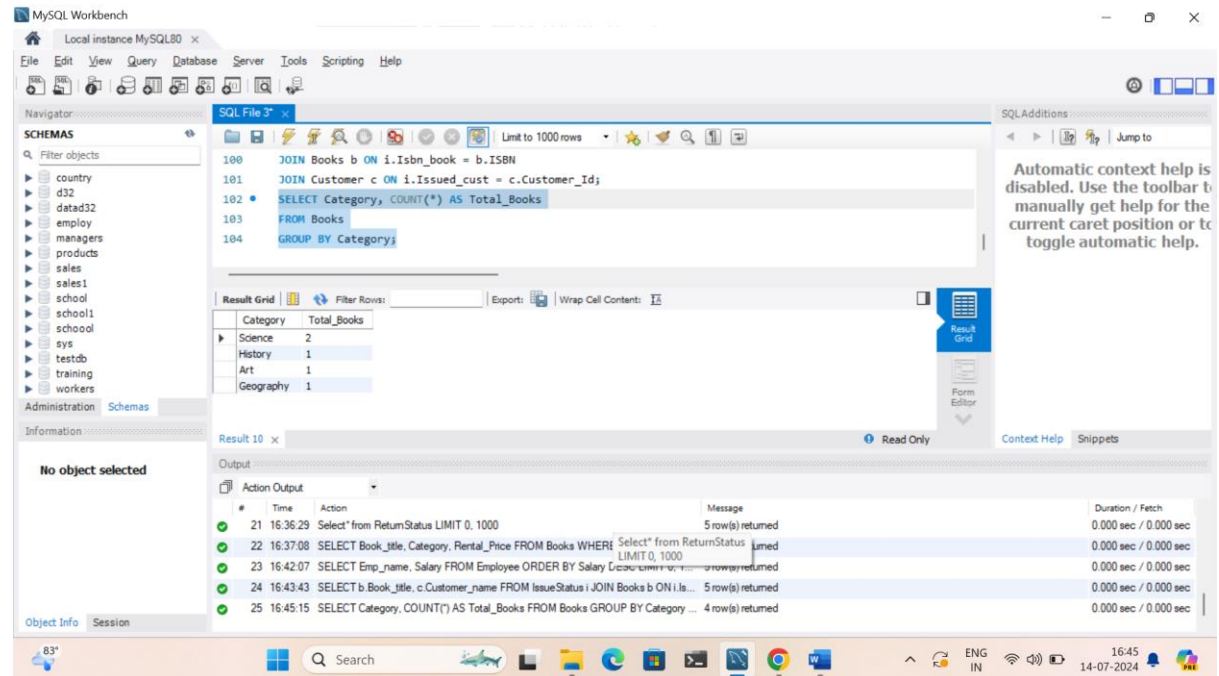
ENG IN

16:44

14-07-2024

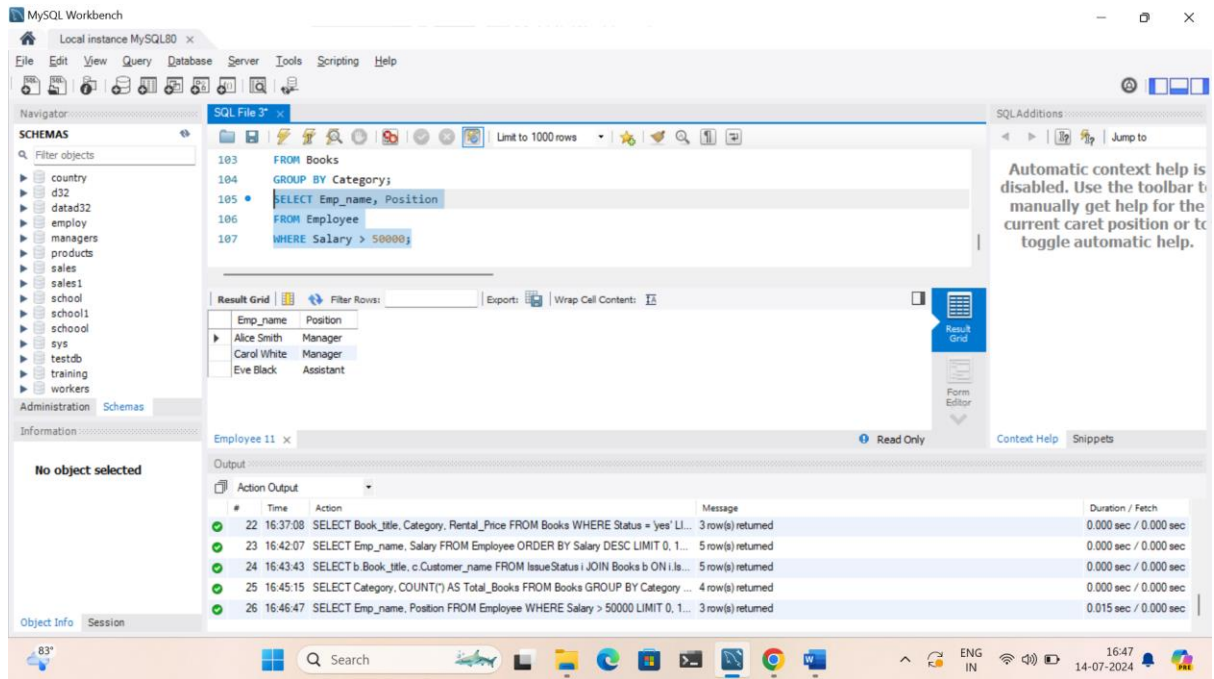
4. Display the total count of books in each category.

```
SELECT Category, COUNT(*) AS Total_Books  
FROM Books  
GROUP BY Category;
```



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

```
SELECT Emp_name, Position  
FROM Employee  
WHERE Salary > 50000;
```

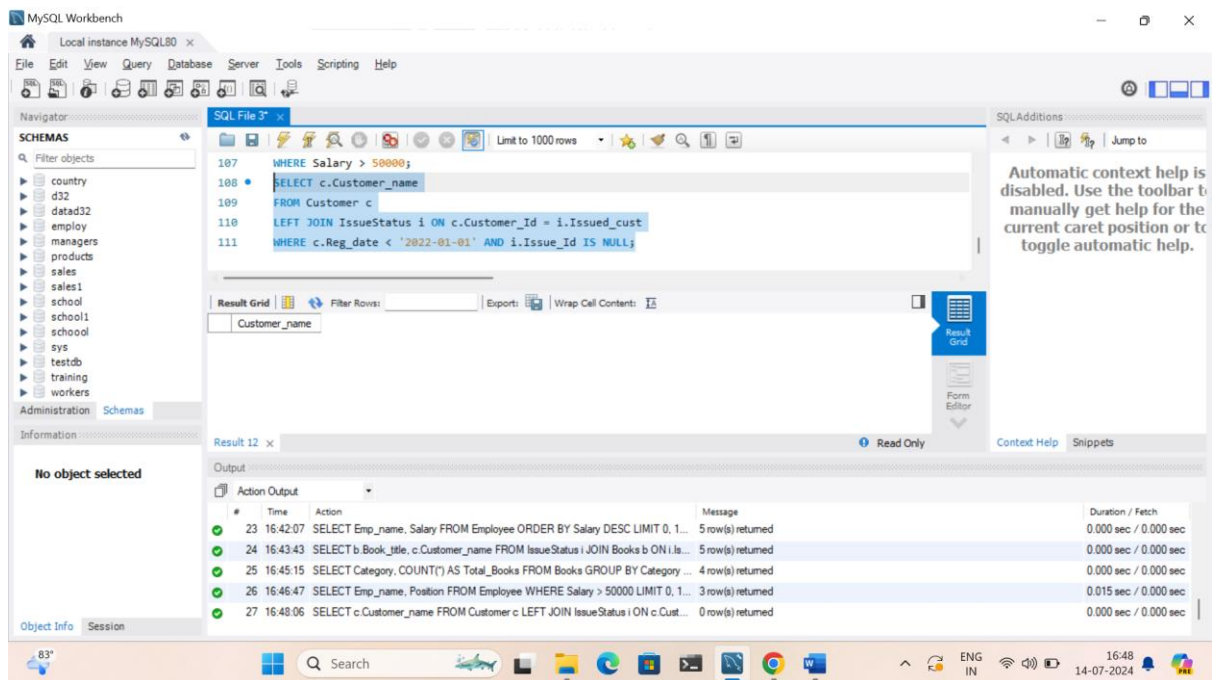


- List the customer names who registered before 2022-01-01 and have not issued any books yet.

```

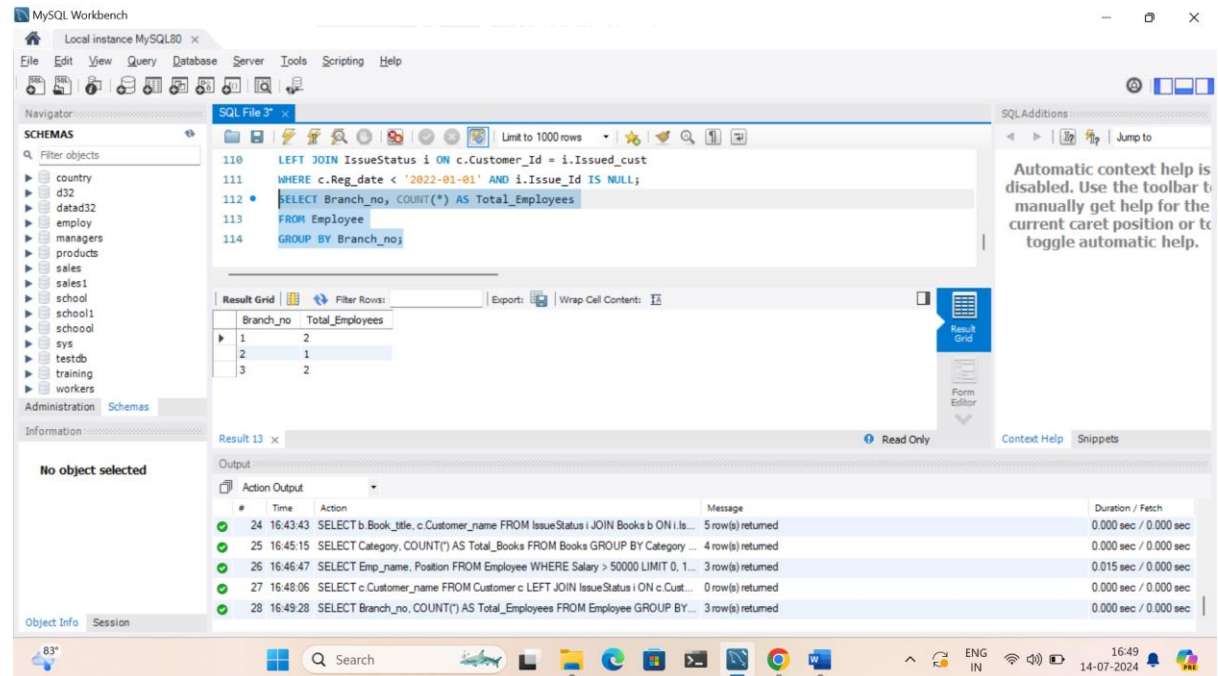
SELECT c.Customer_name
FROM Customer c
LEFT JOIN IssueStatus i ON c.Customer_Id = i.Issued_cust
WHERE c.Reg_date < '2022-01-01' AND i.Issue_Id IS NULL;

```



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

```
SELECT Branch_no, COUNT(*) AS Total_Employees
FROM Employee
GROUP BY Branch_no;
```



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

```
SELECT DISTINCT c.Customer_name
FROM IssueStatus i
JOIN Customer c ON i.Issued_cust = c.Customer_Id
WHERE i.Issue_date BETWEEN '2023-06-01' AND '2023-06-30';
```


MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- country
- d32
- datad32
- employ
- managers
- products
- sales
- sales1
- school
- school1
- sys
- testdb
- training
- workers

Administration Schemas

Information

No object selected

SQL File 3"

Limit to 1000 rows

```

114 GROUP BY Branch_no;
115 SELECT DISTINCT c.Customer_name
116 FROM IssueStatus i
117 JOIN Customer c ON i.Issued_cust = c.Customer_Id
118 WHERE i.Issue_date BETWEEN '2023-06-01' AND '2023-06-30';

```

Result Grid

Customer_name
John Williams
Jane Miller
Jack Davis

Result 14 x

Read Only

Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
25	16:45:15	SELECT Category, COUNT(*) AS Total_Books FROM Books GROUP BY Category ...	4 row(s) returned	0.000 sec / 0.000 sec
26	16:46:47	SELECT Emp_name, Position FROM Employee WHERE Salary > 50000 LIMIT 0, 1...	3 row(s) returned	0.015 sec / 0.000 sec
27	16:48:06	SELECT c.Customer_name FROM Customer c LEFT JOIN IssueStatus i ON c.Cust...	0 row(s) returned	0.000 sec / 0.000 sec
28	16:49:28	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY...	3 row(s) returned	0.000 sec / 0.000 sec
29	16:50:43	SELECT DISTINCT c.Customer_name FROM IssueStatus i JOIN Customer c ON i...	3 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

83°

Search

ENG IN

16:50

14-07-2024

9. Retrieve book_title from book table containing history.

```

SELECT Book_title
FROM Books
WHERE Book_title LIKE '%history%';

```

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- country
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- datad32
- employ
- managers
- products
- sales
- sales1
- school
- school1
- sys
- testdb
- training
- workers

Administration Schemas

Information

No object selected

SQL File 3"

Limit to 1000 rows

```

117 JOIN Customer c ON i.Issued_cust = c.Customer_Id
118 WHERE i.Issue_date BETWEEN '2023-06-01' AND '2023-06-30';
119 SELECT Book_title
120 FROM Books
121 WHERE Book_title LIKE '%history%';

```

Result Grid

Book_title
Modern History
History of Art

Books 15 x

Read Only

Context Help Snippets

Output

Action Output

#	Time	Action	Message	Duration / Fetch
26	16:46:47	SELECT Emp_name, Position FROM Employee WHERE Salary > 50000 LIMIT 0, 1...	3 row(s) returned	0.015 sec / 0.000 sec
27	16:48:06	SELECT c.Customer_name FROM Customer c LEFT JOIN IssueStatus i ON c.Cust...	0 row(s) returned	0.000 sec / 0.000 sec
28	16:49:28	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY...	3 row(s) returned	0.000 sec / 0.000 sec
29	16:50:43	SELECT DISTINCT c.Customer_name FROM IssueStatus i JOIN Customer c ON i...	3 row(s) returned	0.000 sec / 0.000 sec
30	16:56:21	SELECT Book_title FROM Books WHERE Book_title LIKE '%history%'; LIMIT 0, 1000	2 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

Search

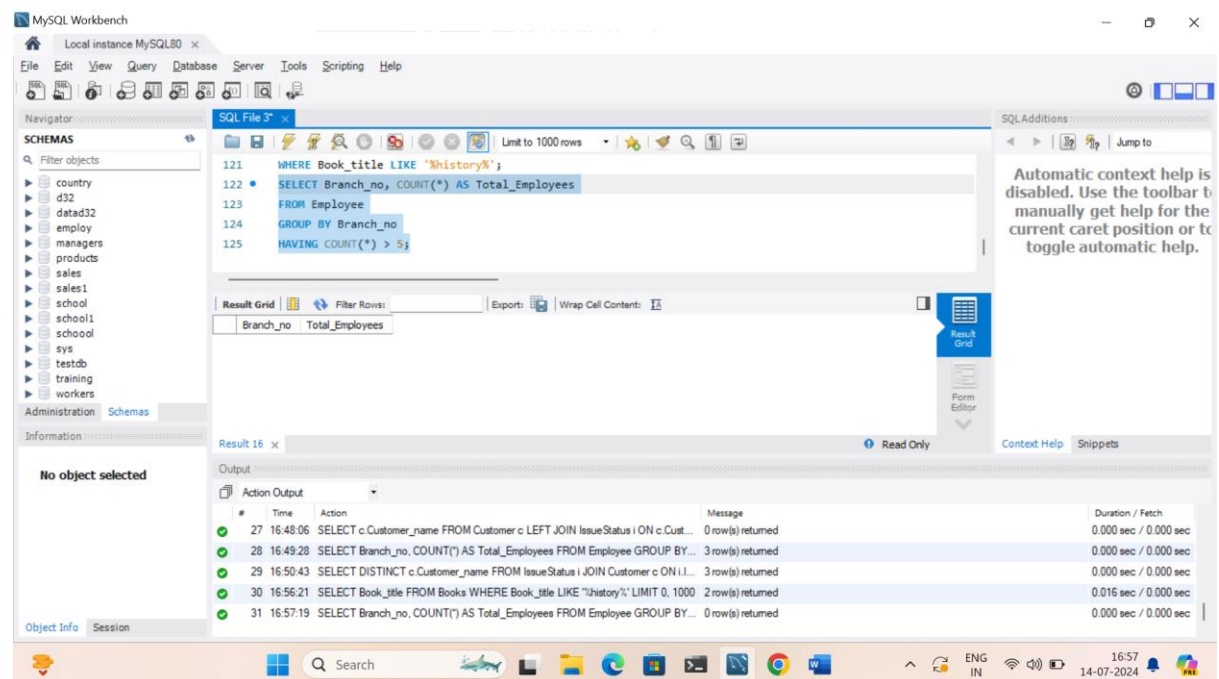
ENG IN

16:56

14-07-2024

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

```
SELECT Branch_no, COUNT(*) AS Total_Employees
FROM Employee
GROUP BY Branch_no
HAVING COUNT(*) > 5;
```



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

```
SELECT e.Emp_name, b.Branch_address
FROM Branch b
JOIN Employee e ON b.Manager_Id = e.Emp_Id;
```


MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- country
- d32
- dated32
- employ
- managers
- products
- sales
- sales1
- school
- school1
- school
- sys
- testdb
- training
- workers

Administration Schemas

Information

No object selected

SQL File 3*

```

124 GROUP BY Branch_no
125 HAVING COUNT(*) > 5;
126 SELECT e.Emp_name, b.Branch_address
127 FROM Branch b
128 JOIN Employee e ON b.Manager_Id = e.Emp_Id;

```

Result Grid

Emp_name	Branch_address
Alice Smith	123 Main St
Bob Johnson	456 Elm St
Carol White	789 Oak St
David Brown	101 Pine St
Eve Black	202 Maple St

Output

#	Time	Action	Message	Duration / Fetch
28	16:49:28	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY...	3 row(s) returned	0.000 sec / 0.000 sec
29	16:50:43	SELECT DISTINCT c.Customer_name FROM IssueStatus i JOIN Customer c ON i...	3 row(s) returned	0.000 sec / 0.000 sec
30	16:56:21	SELECT Book_title FROM Books WHERE Book_title LIKE "history%"; LIMIT 0, 1000	2 row(s) returned	0.016 sec / 0.000 sec
31	16:57:19	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY...	0 row(s) returned	0.000 sec / 0.000 sec
32	16:58:13	SELECT e.Emp_name, b.Branch_address FROM Branch b JOIN Employee e ON b...	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

81°

Search

ENG IN

16:58

14-07-2024

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

```

SELECT DISTINCT c.Customer_name
FROM IssueStatus i
JOIN Books b ON i.Isbn_book = b.ISBN
JOIN Customer c ON i.Issued_cust = c.Customer_Id
WHERE b.Rental_Price > 25;

```

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- country
- d32
- dated32
- employ
- managers
- products
- sales
- sales1
- school
- school1
- school
- sys
- testdb
- training
- workers

Administration Schemas

Information

No object selected

SQL File 3*

```

129 SELECT DISTINCT c.Customer_name
130 FROM IssueStatus i
131 JOIN Books b ON i.Isbn_book = b.ISBN
132 JOIN Customer c ON i.Issued_cust = c.Customer_Id
133 WHERE b.Rental_Price > 25;

```

Result Grid

Customer_name
Jane Miller
John Williams
Will Wilson

Output

#	Time	Action	Message	Duration / Fetch
29	16:50:43	SELECT DISTINCT c.Customer_name FROM IssueStatus i JOIN Customer c ON i...	3 row(s) returned	0.000 sec / 0.000 sec
30	16:56:21	SELECT Book_title FROM Books WHERE Book_title LIKE "history%"; LIMIT 0, 1000	2 row(s) returned	0.016 sec / 0.000 sec
31	16:57:19	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY...	0 row(s) returned	0.000 sec / 0.000 sec
32	16:58:13	SELECT e.Emp_name, b.Branch_address FROM Branch b JOIN Employee e ON b...	5 row(s) returned	0.000 sec / 0.000 sec
33	16:59:01	SELECT DISTINCT c.Customer_name FROM IssueStatus i JOIN Books b ON i.Isbn...	3 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

81°

Search

ENG IN

16:59

14-07-2024