

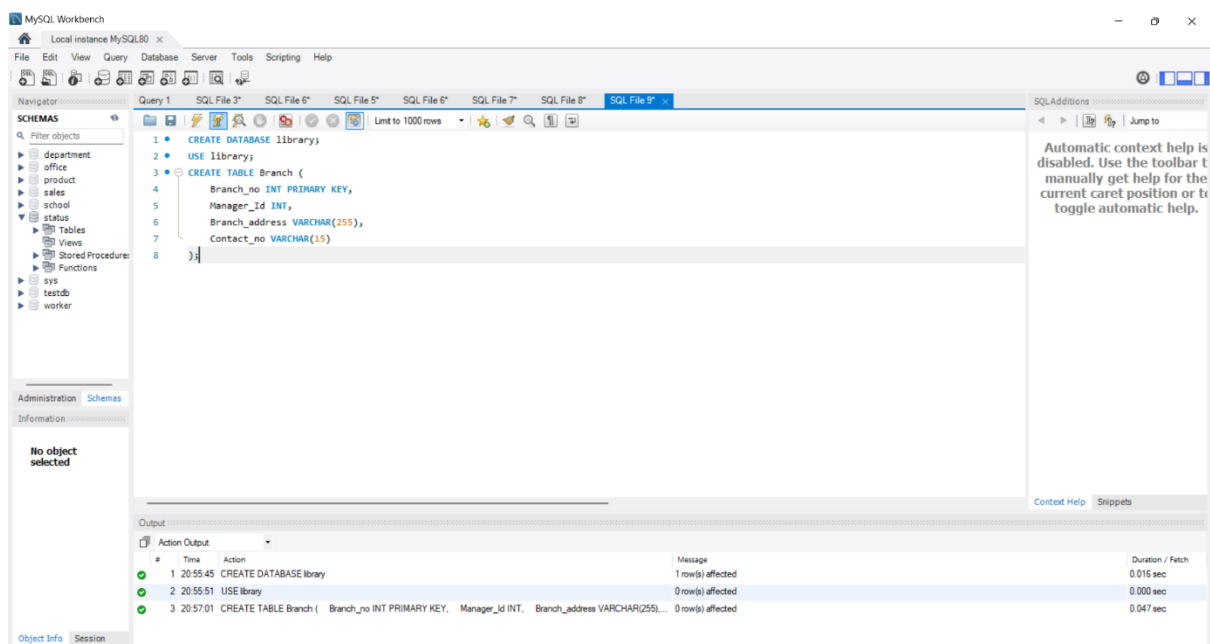
Library Management System

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

1. Branch
2. Employee
3. Books
4. Customer
5. Issue Status
6. Return Status

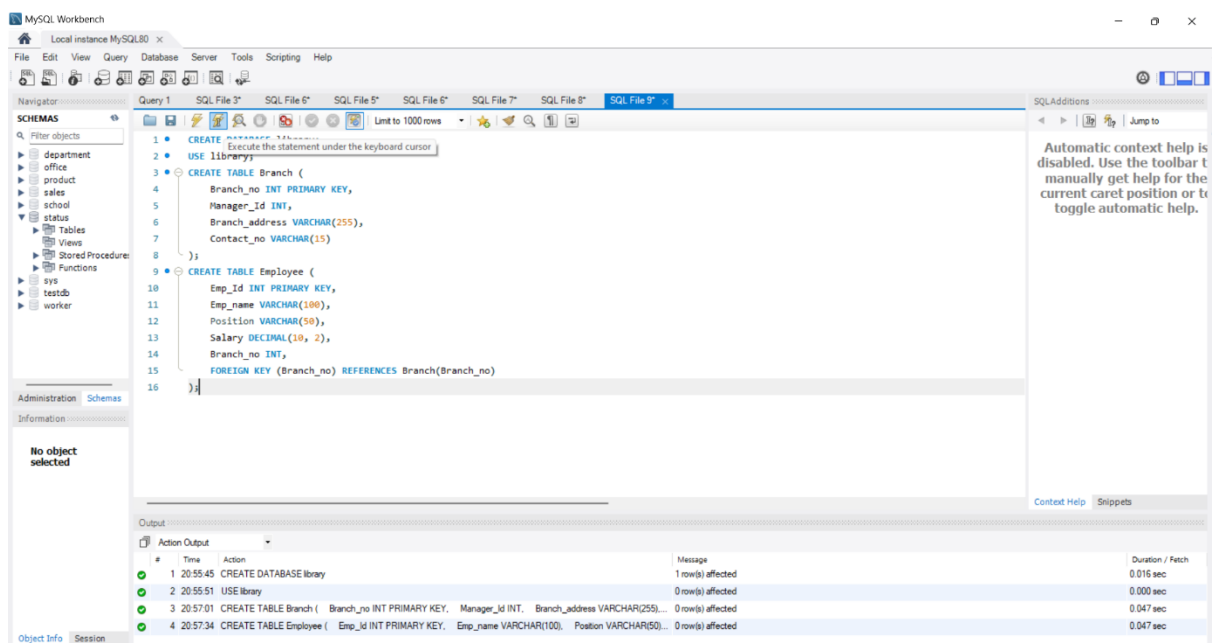
***Attributes for the tables:**

1. Branch
 - Branch_no
 - Set as PRIMARY KEY
 - Manager_Id
 - Branch_address
 - Contact_no



2. Employee

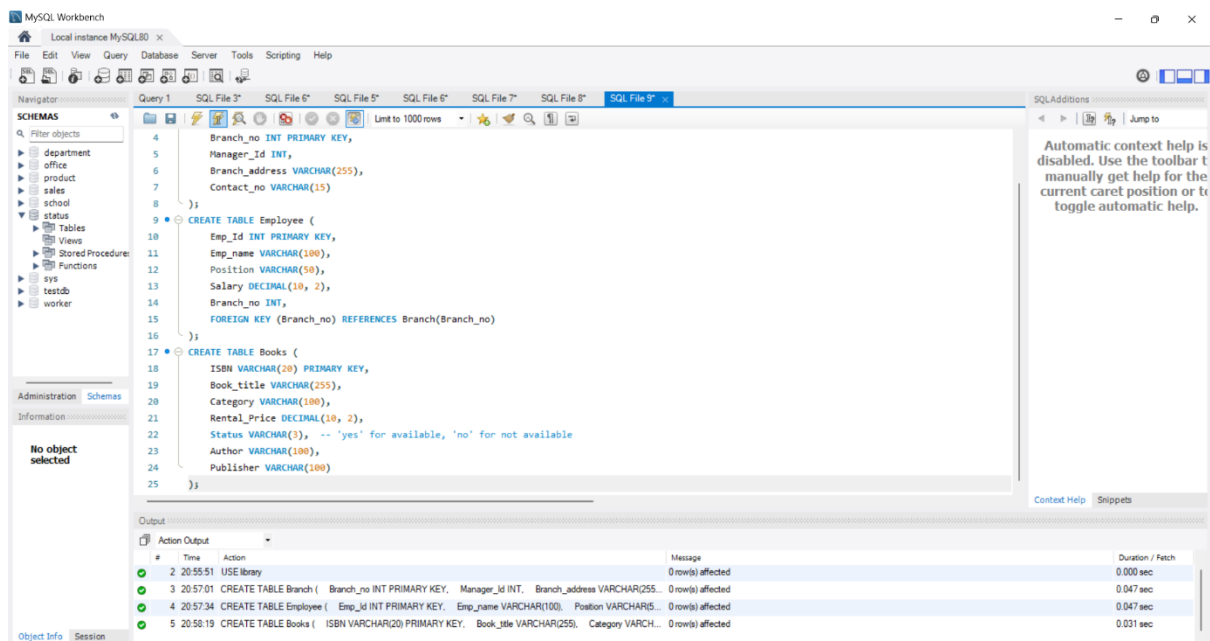
- Emp_ Id – Set as PRIMARY KEY
- Emp_ name
- Position
- Salary
- Branch_ no
 - Set as FOREIGN KEY and it refer Branch_ no in Branch table



3. Books

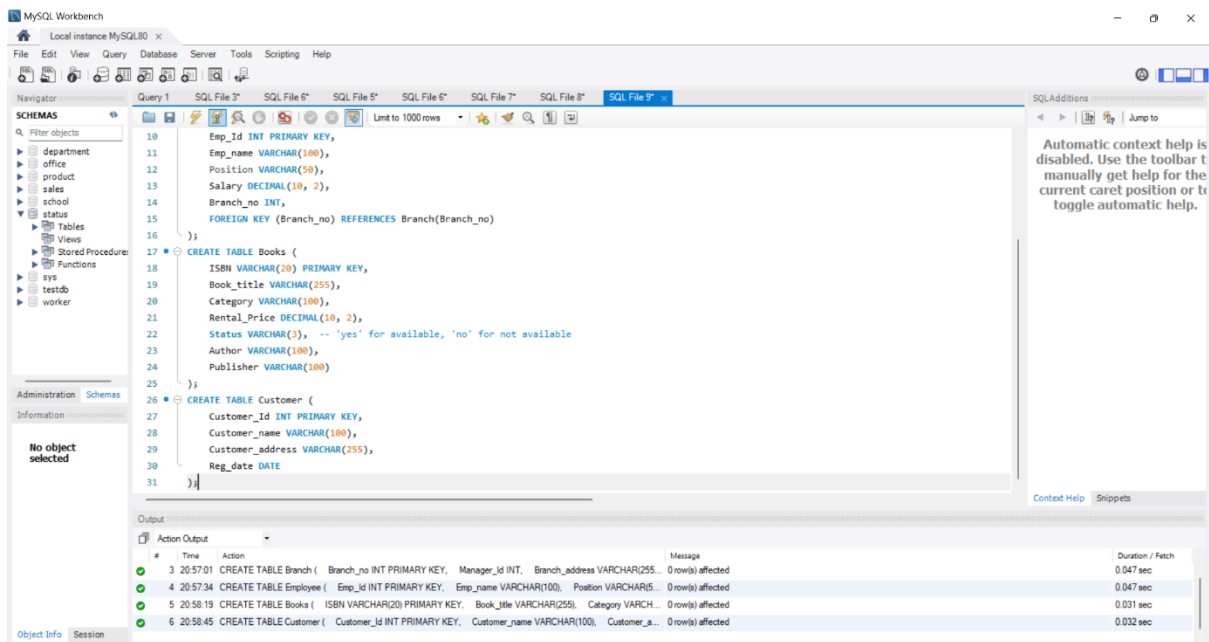
- ISBN

- Set as PRIMARY KEY
 - Book_title
 - Category
 - Rental_Price
 - Status [Give yes if book available and no if book not available]
 - Author
 - Publisher



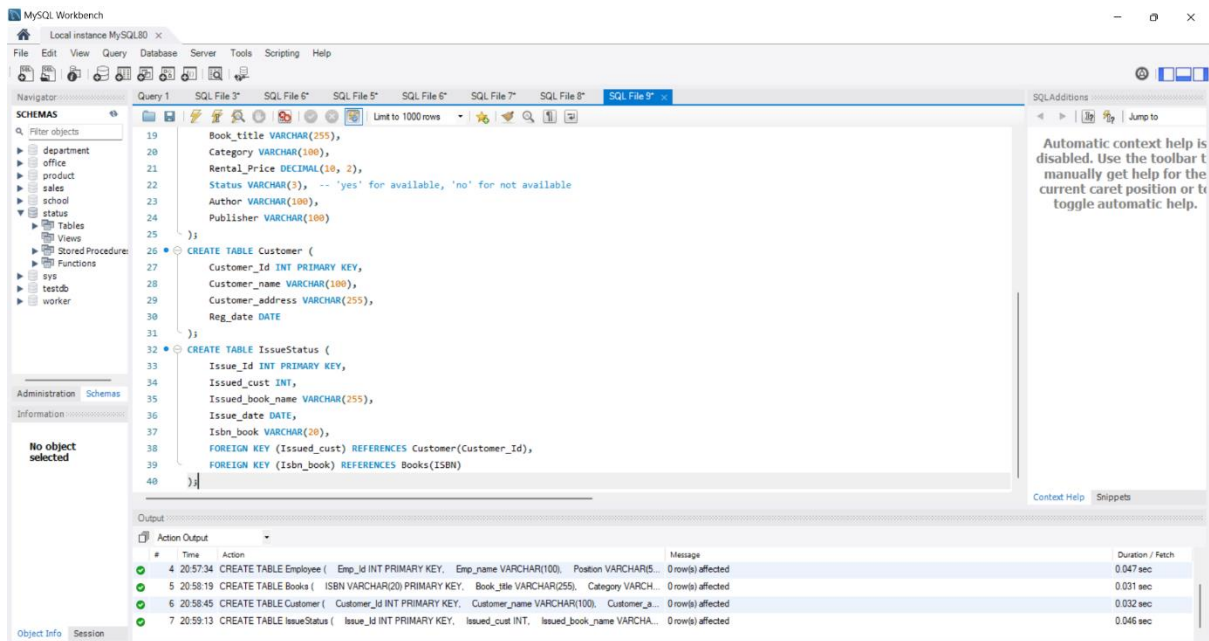
4. Customer

- Customer_ Id
 - Set as PRIMARY KEY
 - Customer_ name
 - Customer_ address
 - Reg_ date



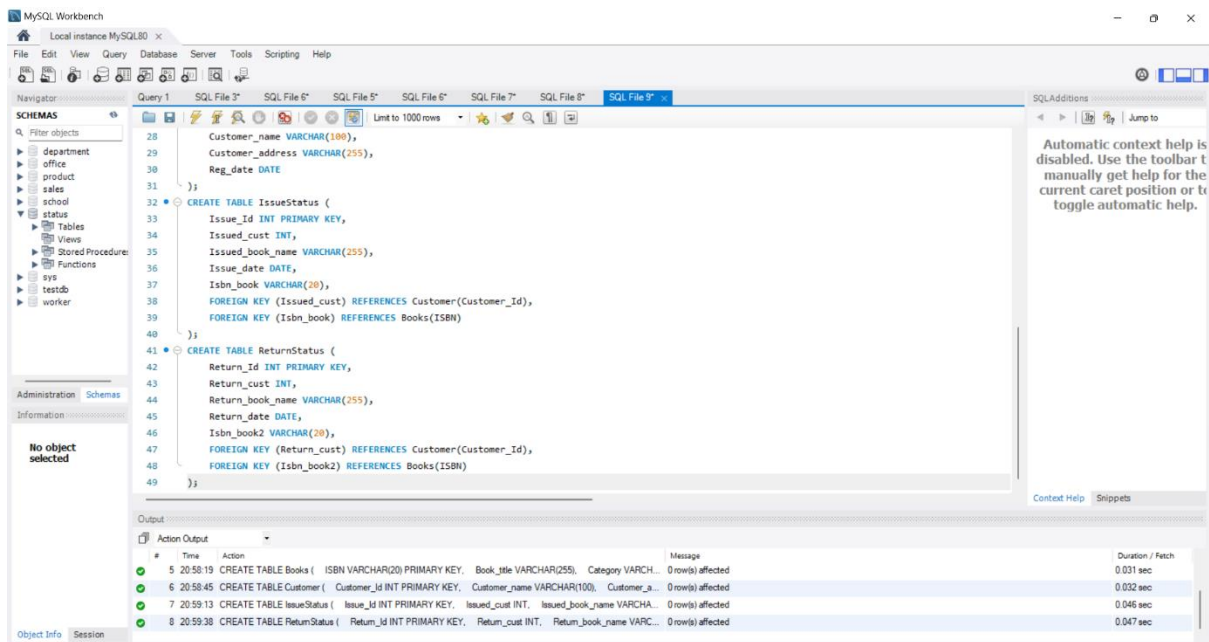
5. Issue Status

- 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



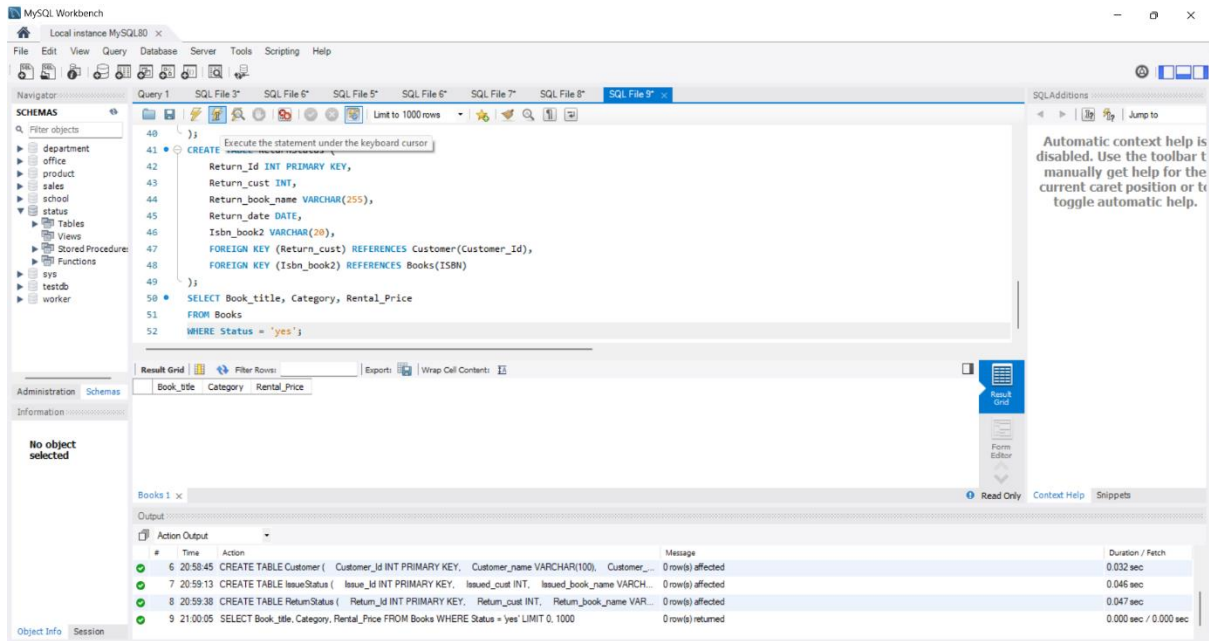
6. Return Status

- 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

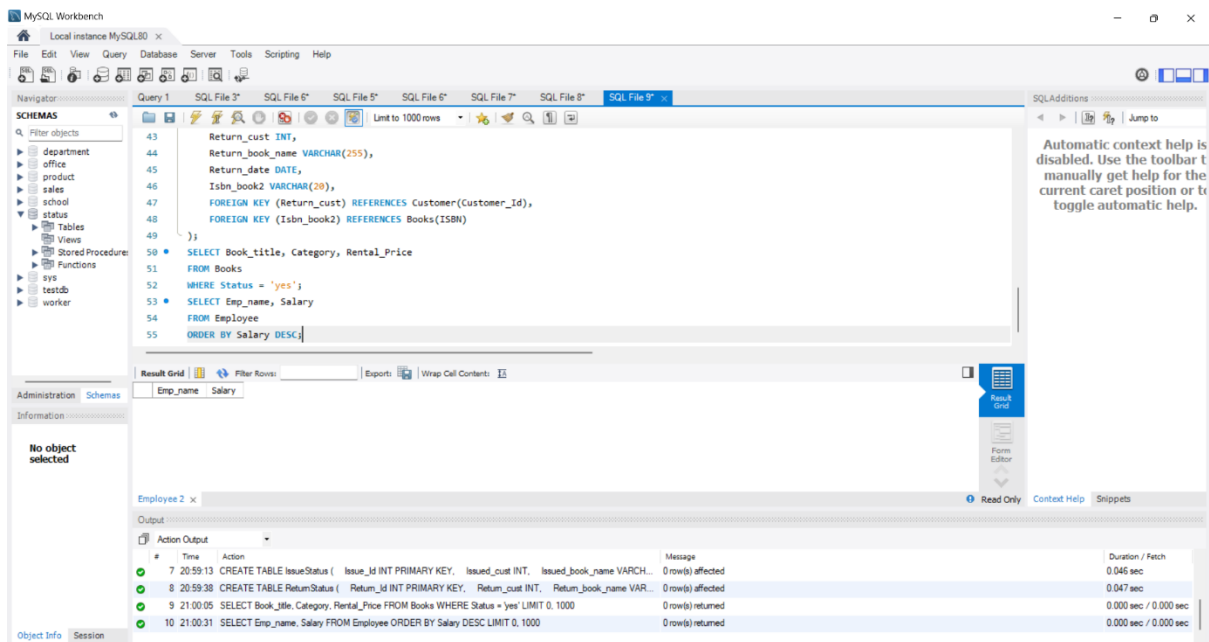


Display all the tables and write the queries for the following:

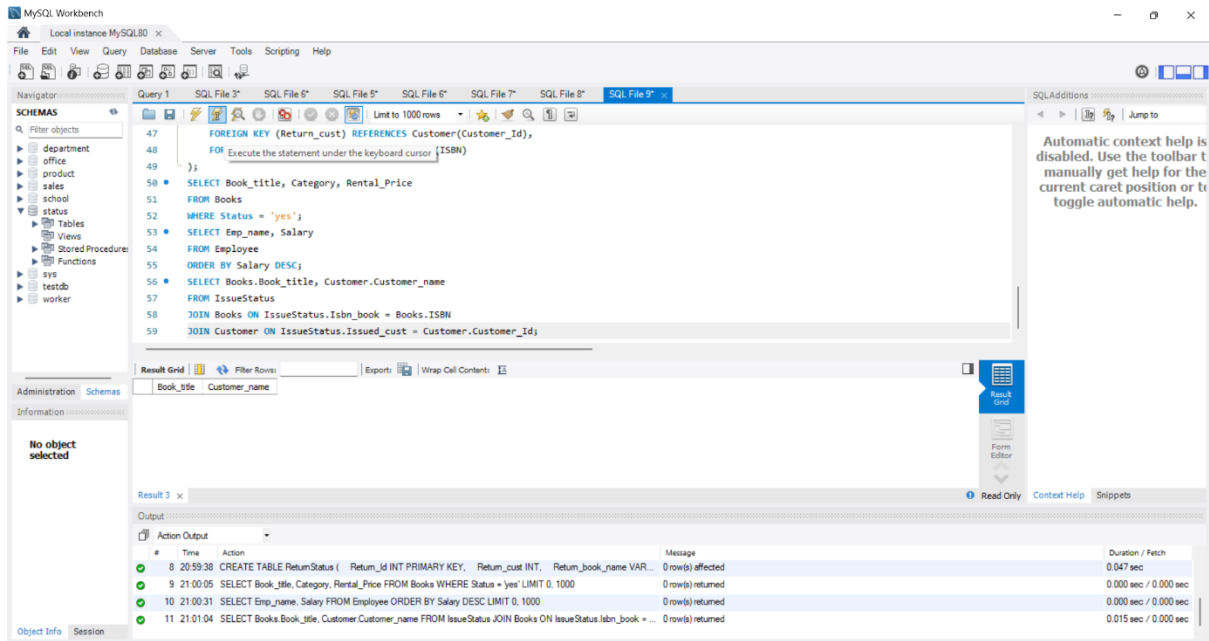
1. Retrieve the book title, category, and rental price of all available books.



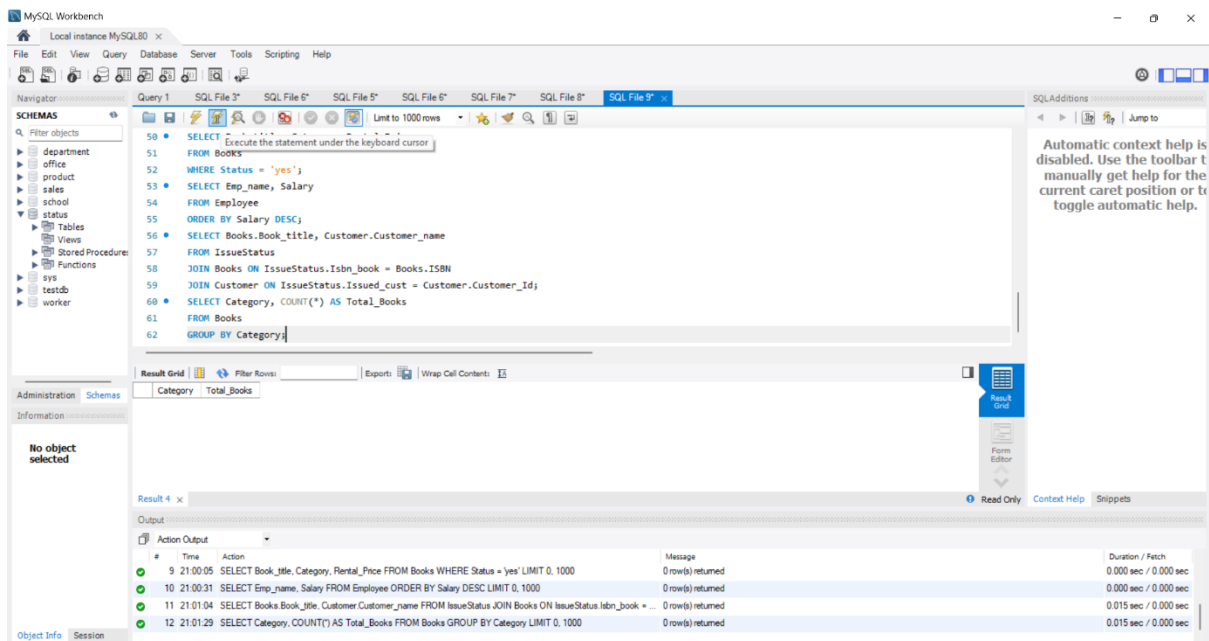
2. List the employee names and their respective salaries in descending order of salary.



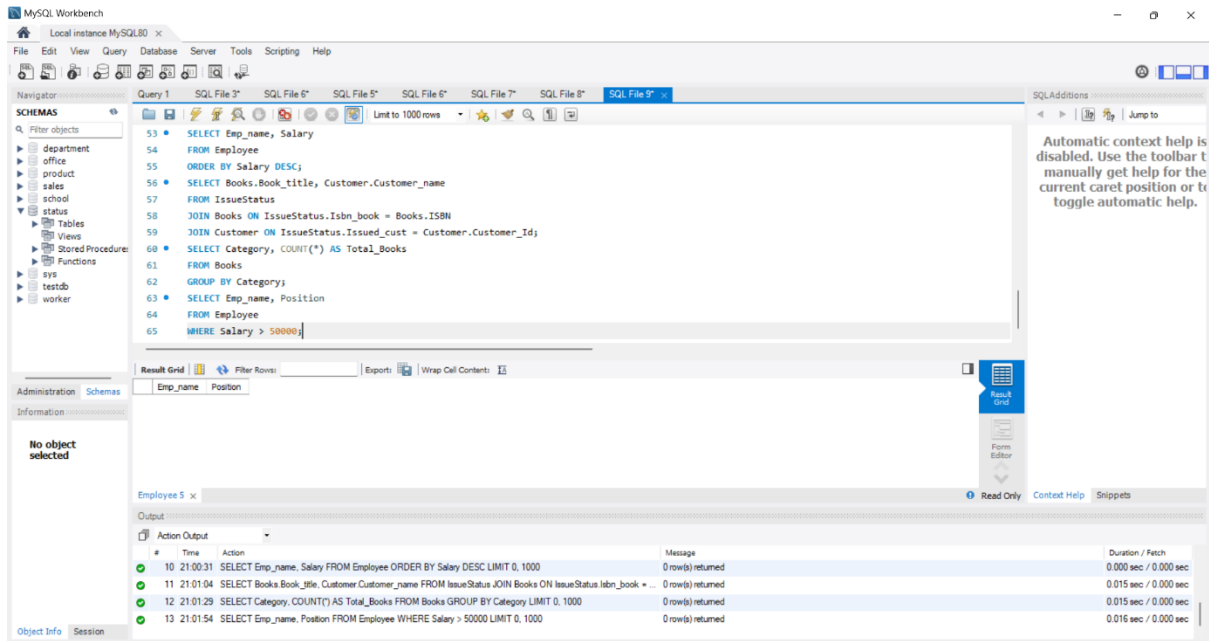
3. Retrieve the book titles and the corresponding customers who have issued those books.



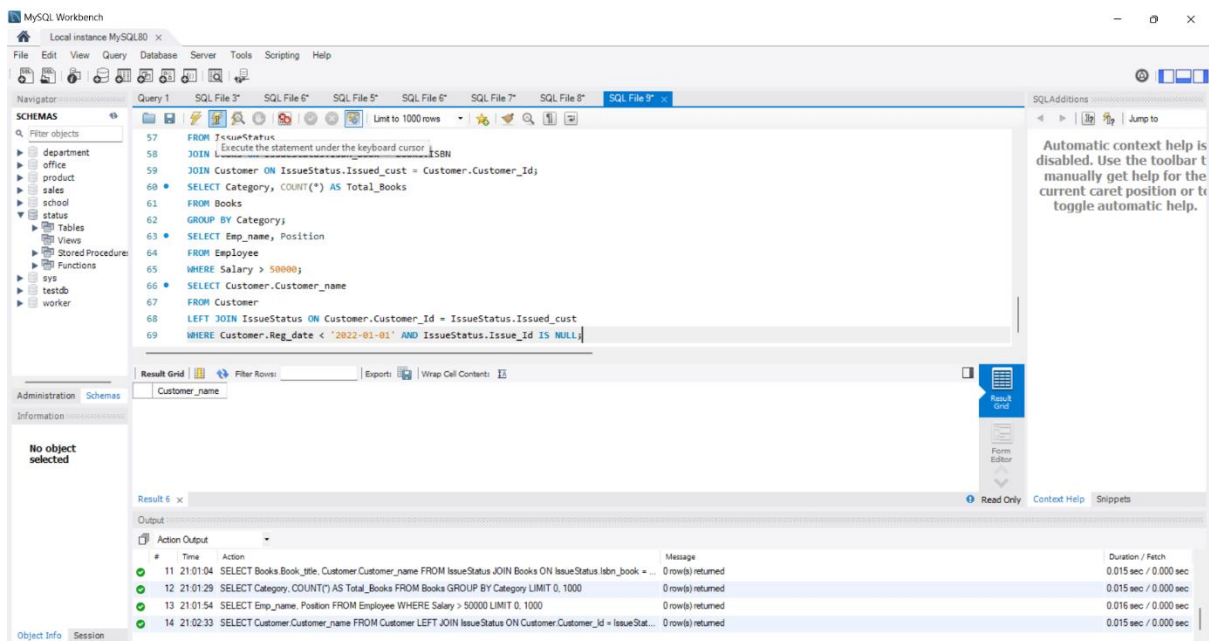
4. Display the total count of books in each category.



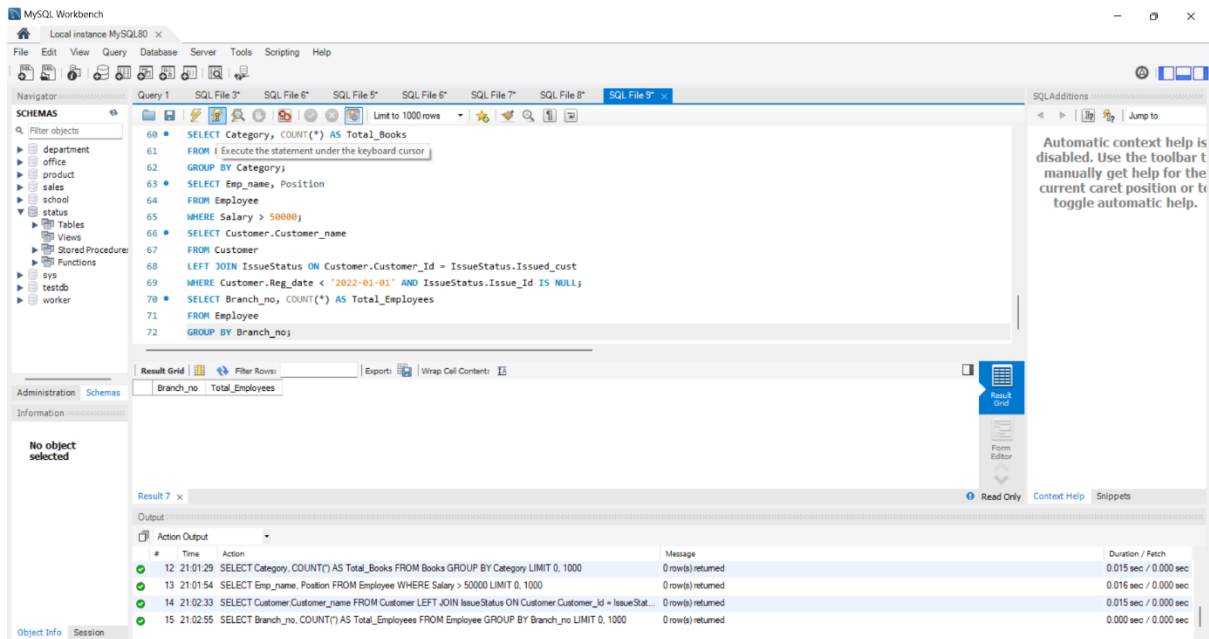
5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.



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.



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

```

60 SELECT Category, COUNT(*) AS Total_Books
61 FROM (Execute the statement under the keyboard cursor)
62 GROUP BY Category;
63 SELECT Emp_name, Position
64 FROM Employee
65 WHERE Salary > 50000;
66 SELECT Customer.Customer_name
67 FROM Customer
68 LEFT JOIN IssueStatus ON Customer.Customer_Id = IssueStatus.Issued_cust
69 WHERE Customer.Reg_date < '2022-01-01' AND IssueStatus.Issue_Id IS NULL;
70 SELECT Branch_no, COUNT(*) AS Total_Employees
71 FROM Employee
72 GROUP BY Branch_no;

```

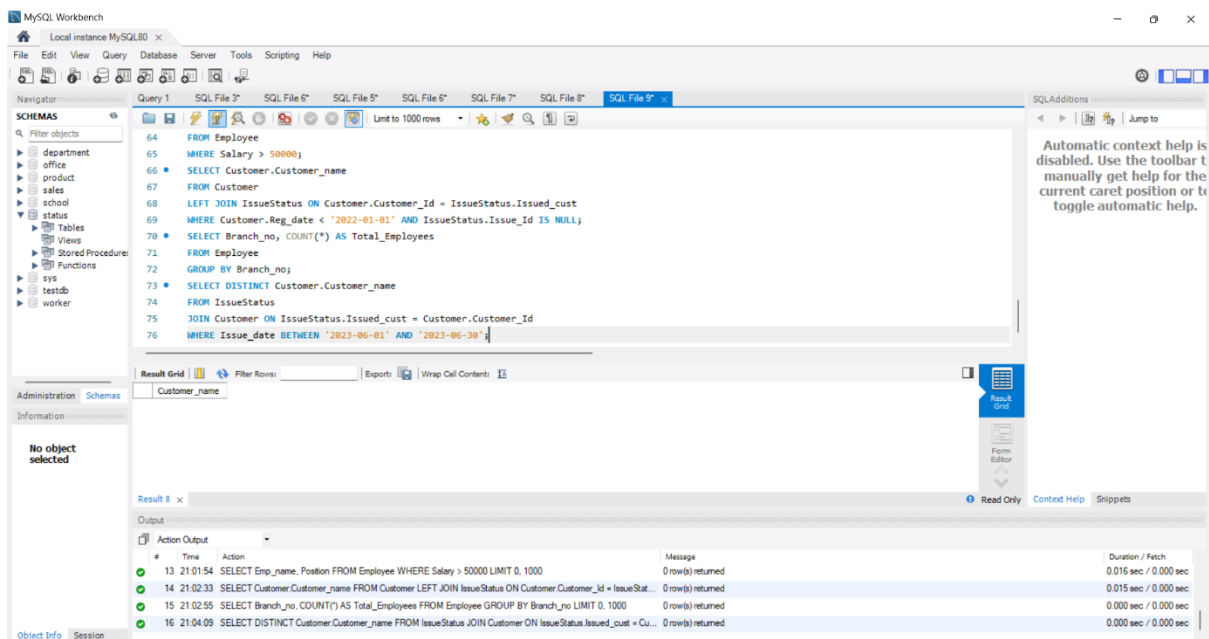
The Results tab shows the output of the last query (Query 7):

Branch_no	Total_Employees
1	10
2	15
3	20
4	25
5	30
6	35
7	40
8	45
9	50
10	55

The Output tab shows the execution log:

#	Time	Action	Message	Duration / Fetch
12	21:01:29	SELECT Category, COUNT(*) AS Total_Books FROM Books GROUP BY Category LIMIT 0, 1000	0 row(s) returned	0.015 sec / 0.000 sec
13	21:01:54	SELECT Emp_name, Position FROM Employee WHERE Salary > 50000 LIMIT 0, 1000	0 row(s) returned	0.016 sec / 0.000 sec
14	21:02:33	SELECT Customer.Customer_name FROM Customer LEFT JOIN IssueStatus ON Customer.Customer_Id = IssueStat...	0 row(s) returned	0.015 sec / 0.000 sec
15	21:02:55	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY Branch_no LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec

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



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

```

64 FROM Employee
65 WHERE Salary > 50000;
66 SELECT Customer.Customer_name
67 FROM Customer
68 LEFT JOIN IssueStatus ON Customer.Customer_Id = IssueStatus.Issued_cust
69 WHERE Customer.Reg_date < '2022-01-01' AND IssueStatus.Issue_Id IS NULL;
70 SELECT Branch_no, COUNT(*) AS Total_Employees
71 FROM Employee
72 GROUP BY Branch_no;
73 SELECT DISTINCT Customer.Customer_name
74 FROM IssueStatus
75 JOIN Customer ON IssueStatus.Issued_cust = Customer.Customer_Id
76 WHERE Issue_date BETWEEN '2023-06-01' AND '2023-06-30';

```

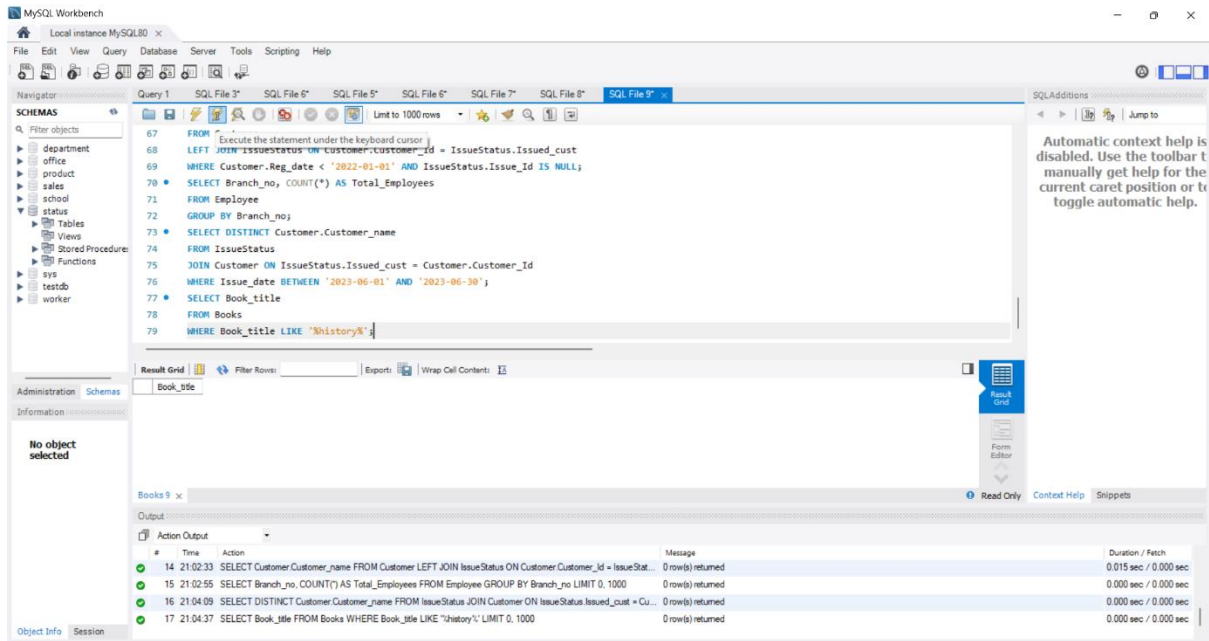
The Results tab shows the output of the last query (Query 8):

Customer_name
John Doe
Jane Smith
Michael Brown
Sarah White
David Green
Emily Black
Robert Grey
Laura Pink
James Blue
Alice Yellow

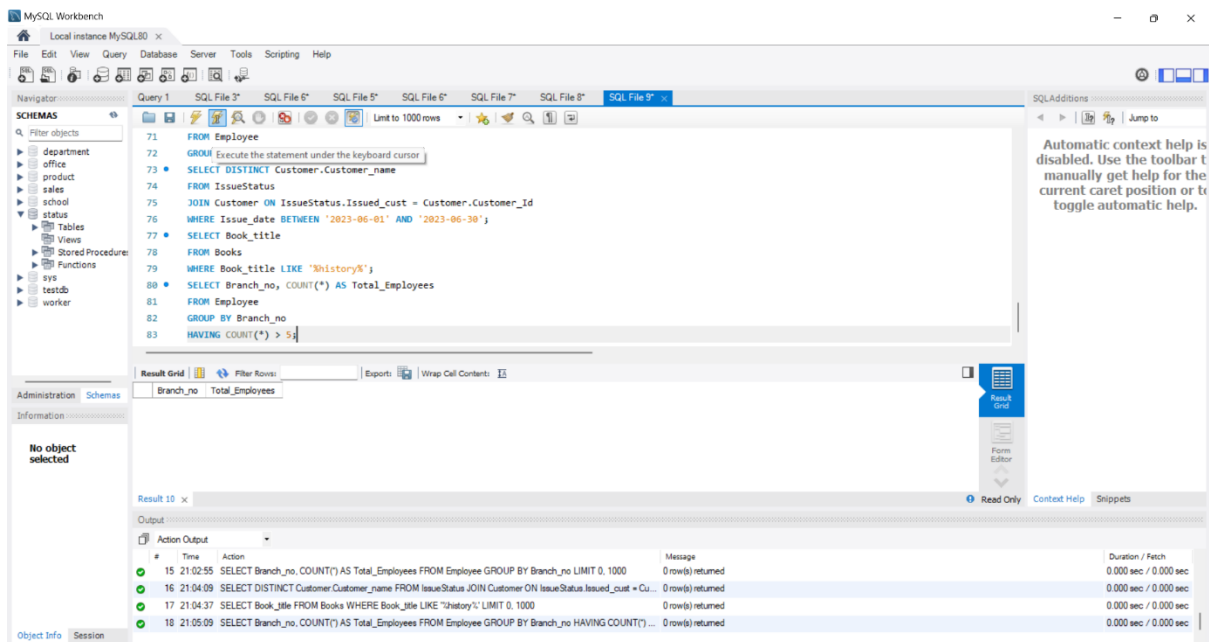
The Output tab shows the execution log:

#	Time	Action	Message	Duration / Fetch
13	21:01:54	SELECT Emp_name, Position FROM Employee WHERE Salary > 50000 LIMIT 0, 1000	0 row(s) returned	0.016 sec / 0.000 sec
14	21:02:33	SELECT Customer.Customer_name FROM Customer LEFT JOIN IssueStatus ON Customer.Customer_Id = IssueStat...	0 row(s) returned	0.015 sec / 0.000 sec
15	21:02:55	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY Branch_no LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
16	21:04:09	SELECT DISTINCT Customer.Customer_name FROM IssueStatus JOIN Customer ON IssueStatus.Issued_cust = Cu...	0 row(s) returned	0.000 sec / 0.000 sec

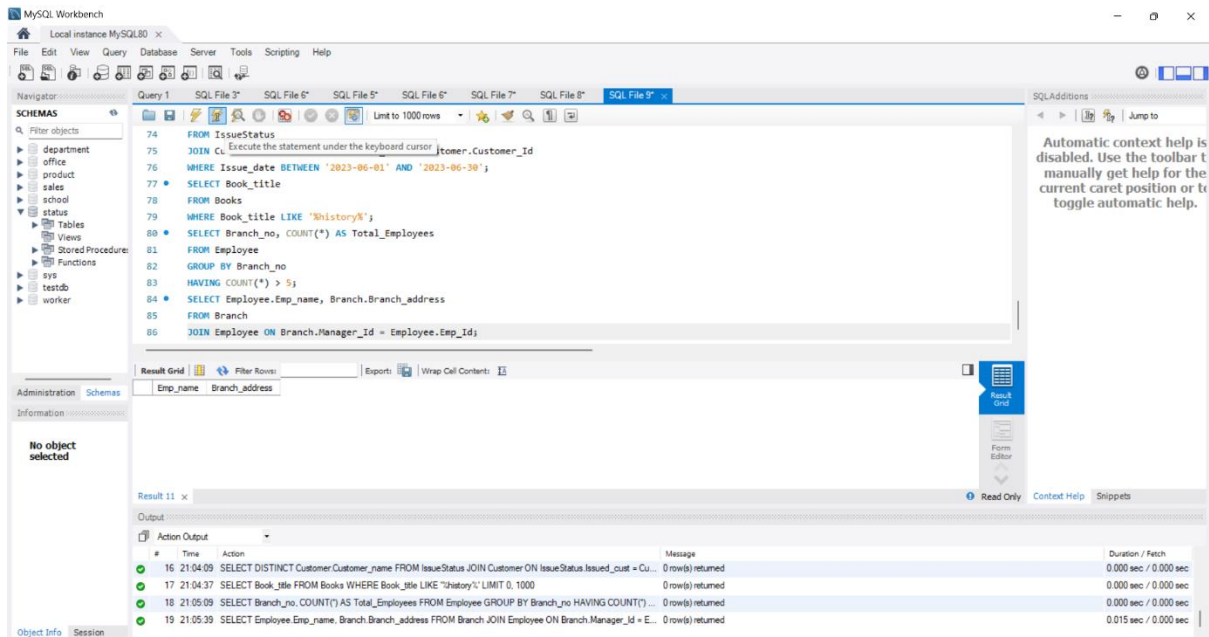
9. Retrieve book_title from book table containing history.



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.



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

```

74 FROM IssueStatus
75 JOIN Customer ON Customer.Customer_Id = IssueStatus.Issued_cust = Customer.Customer_Id
76 WHERE Issue_date BETWEEN '2023-06-01' AND '2023-06-30';
77 SELECT Book_title
78 FROM Books
79 WHERE Book_title LIKE '%history%';
80 SELECT Branch_no, COUNT(*) AS Total_Employees
81 FROM Employee
82 GROUP BY Branch_no
83 HAVING COUNT(*) > 5;
84 SELECT Employee.Emp_name, Branch.Branch_address
85 FROM Branch
86 JOIN Employee ON Branch.Manager_Id = Employee.Emp_Id;

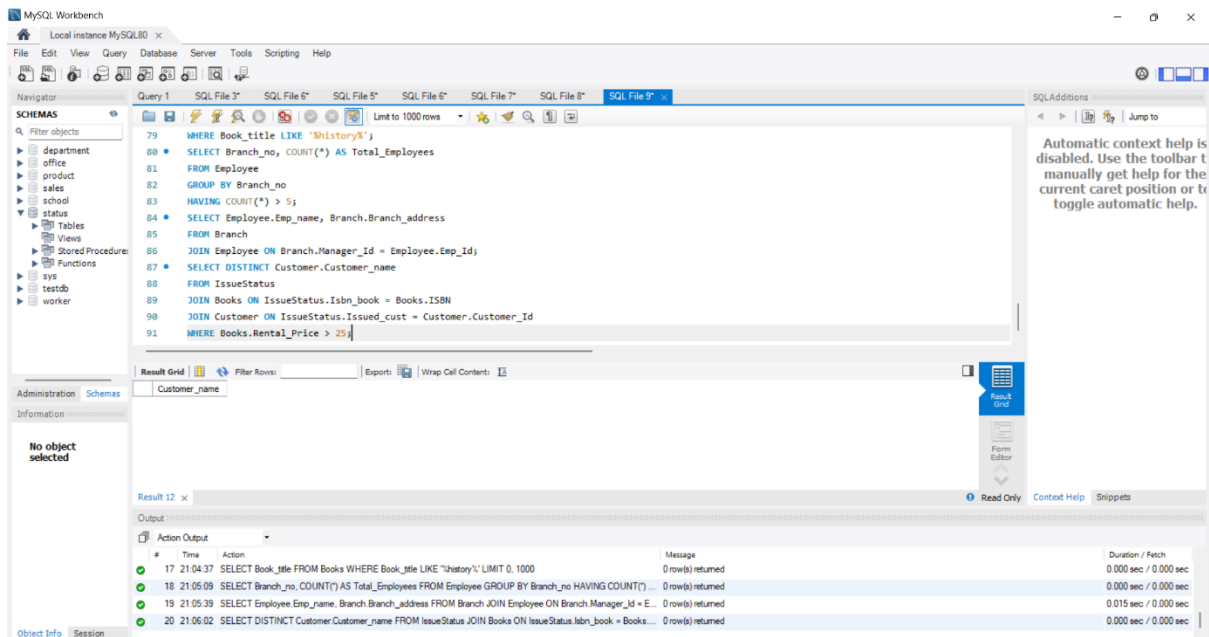
```

The Results tab shows the output of the query, which is a table with two columns: Emp_name and Branch_address. The output is empty, indicating no results were returned.

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

#	Time	Action	Message	Duration / Fetch
16	21:04:09	SELECT DISTINCT Customer.Customer_name FROM IssueStatus JOIN Customer ON IssueStatus.Issued_cust = Customer.Customer_Id	0 row(s) returned	0.000 sec / 0.000 sec
17	21:04:37	SELECT Book_title FROM Books WHERE Book_title LIKE '%history%' LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
18	21:05:09	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY Branch_no HAVING COUNT(*) > 5	0 row(s) returned	0.000 sec / 0.000 sec
19	21:05:39	SELECT Employee.Emp_name, Branch.Branch_address FROM Branch JOIN Employee ON Branch.Manager_Id = Employee.Emp_Id	0 row(s) returned	0.015 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:

```

79 WHERE Book_title LIKE '%history%';
80 SELECT Branch_no, COUNT(*) AS Total_Employees
81 FROM Employee
82 GROUP BY Branch_no
83 HAVING COUNT(*) > 5;
84 SELECT Employee.Emp_name, Branch.Branch_address
85 FROM Branch
86 JOIN Employee ON Branch.Manager_Id = Employee.Emp_Id;
87 SELECT DISTINCT Customer.Customer_name
88 FROM IssueStatus
89 JOIN Books ON IssueStatus.Isbn_book = Books.ISBN
90 JOIN Customer ON IssueStatus.Issued_cust = Customer.Customer_Id
91 WHERE Books.Rental_Price > 25;

```

The Results tab shows the output of the query, which is a table with one column: Customer_name. The output is empty, indicating no results were returned.

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

#	Time	Action	Message	Duration / Fetch
17	21:04:37	SELECT Book_title FROM Books WHERE Book_title LIKE '%history%' LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
18	21:05:09	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY Branch_no HAVING COUNT(*) > 5	0 row(s) returned	0.000 sec / 0.000 sec
19	21:05:39	SELECT Employee.Emp_name, Branch.Branch_address FROM Branch JOIN Employee ON Branch.Manager_Id = Employee.Emp_Id	0 row(s) returned	0.015 sec / 0.000 sec
20	21:06:02	SELECT DISTINCT Customer.Customer_name FROM IssueStatus JOIN Books ON IssueStatus.Isbn_book = Books.ISBN JOIN Customer ON IssueStatus.Issued_cust = Customer.Customer_Id WHERE Books.Rental_Price > 25	0 row(s) returned	0.000 sec / 0.000 sec