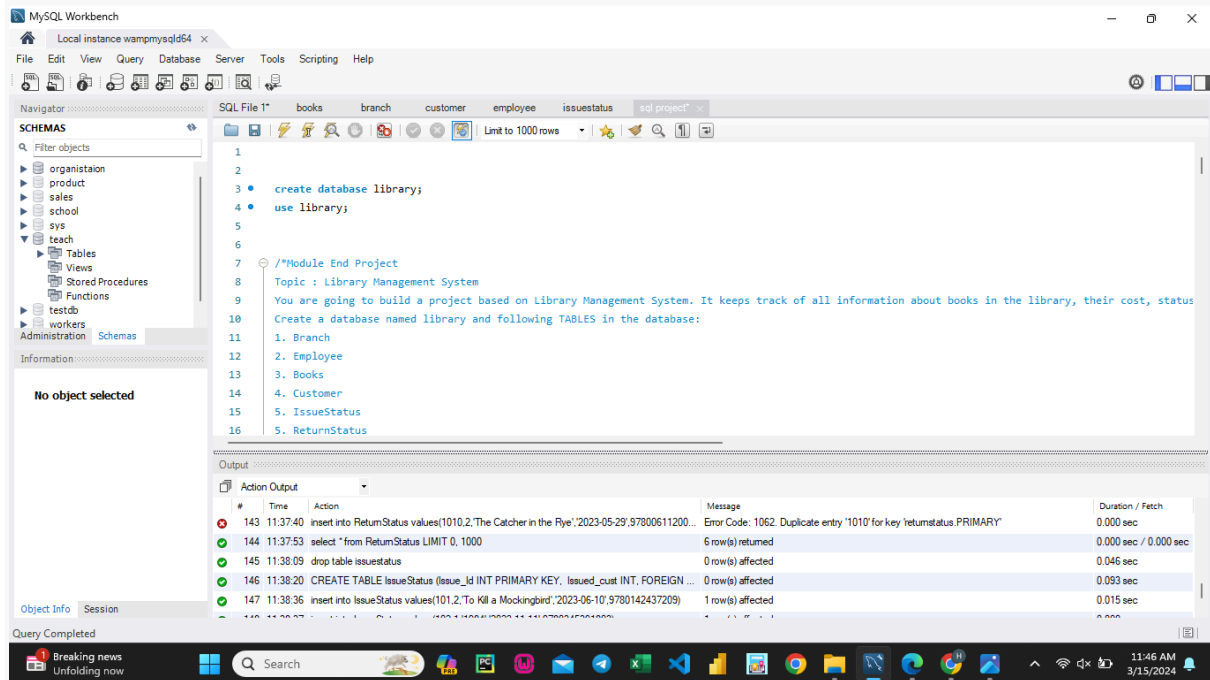


## Module End Project

### 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
5. ReturnStatus

Attributes for the tables:

## 1. Branch

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

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

```
18 • create table Branch(  
19   Branch_no int PRIMARY KEY ,  
20   Manager_Id int,  
21   Branch_address varchar(30),  
22   Contact_no int);  
23  
24 • insert into Branch values(1,101,'abcd',98765432);  
25 • insert into Branch values(2,102,'asdf',97687654);  
26 • insert into Branch values(3,103,'mbv',78965433);  
27 • insert into Branch values(4,104,'lkjh',76543219);  
28 • insert into Branch values(5,105,'qwer',78912345);  
29 • insert into Branch values(6,106,'polu',91234567);  
30  
31 • select * from branch;
```

The Result Grid shows the following data:

Branch_no	Manager_Id	Branch_address	Contact_no
1	101	abcd	98765432
2	102	asdf	97687654
3	103	mbv	78965433
4	104	lkjh	76543219
5	105	qwer	78912345
6	106	polu	91234567

## 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. The SQL Editor contains the following code:

```

37
38 create table Employee (
39     Emp_Id int PRIMARY KEY ,
40     Emp_name varchar(25),
41     Position varchar(25),
42     Salary int,
43     Branch_no int,
44     FOREIGN KEY (Branch_no) references branch(Branch_no) on delete cascade);
45
46 insert into employee values(1,'mary mariyam','manager',60000,1);
47 insert into employee values(2,'john thomas','assistant manager',50000,1);

```

The Result Grid shows the following data:

Emp_Id	Emp_name	Position	Salary	Branch_no
1	mary mariyam	manager	60000	1
2	john thomas	assistant manager	50000	1
3	will smith	cashier	40000	1
4	john doe	clerk	30000	1
5	sara mathew	manager	60000	2
6	david brownie	clerk	30000	2
7	albin thomas	clerk	30000	1
8	manu kuriyan	clerk	30000	1
9	sinjo sabu	clerk	30000	2

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

```

42
43 insert into employee values(1,'mary mariyam','manager',60000,1);
44 insert into employee values(2,'john thomas','assistant manager',50000,1);
45 insert into employee values(3,'will smith','cashier',40000,1);
46 insert into employee values(4,'john doe','clerk',30000,1);
47 insert into employee values(5,'sara mathew','manager',60000,2);
48 insert into employee values(6,'david brownie','clerk',30000,2);
49 insert into employee values(7,'albin thomas','clerk',30000,1);
50 insert into employee values(8,'manu kuriyan','clerk',30000,1);
51 insert into employee values(9,'sinjo sabu','clerk',30000,2);
52 insert into employee values(10,'albin a b','cashier',40000,1);
53
54 select * from employee;
55

```

The Result Grid shows the following data:

Emp_Id	Emp_name	Position	Salary	Branch_no
5	sara mathew	manager	60000	2
6	david brownie	clerk	30000	2
7	albin thomas	clerk	30000	1
8	manu kuriyan	clerk	30000	1
9	sinjo sabu	clerk	30000	2
10	albin a b	cashier	40000	1

### 3. Books

**ISBN - Set as PRIMARY KEY**

**Book\_title**

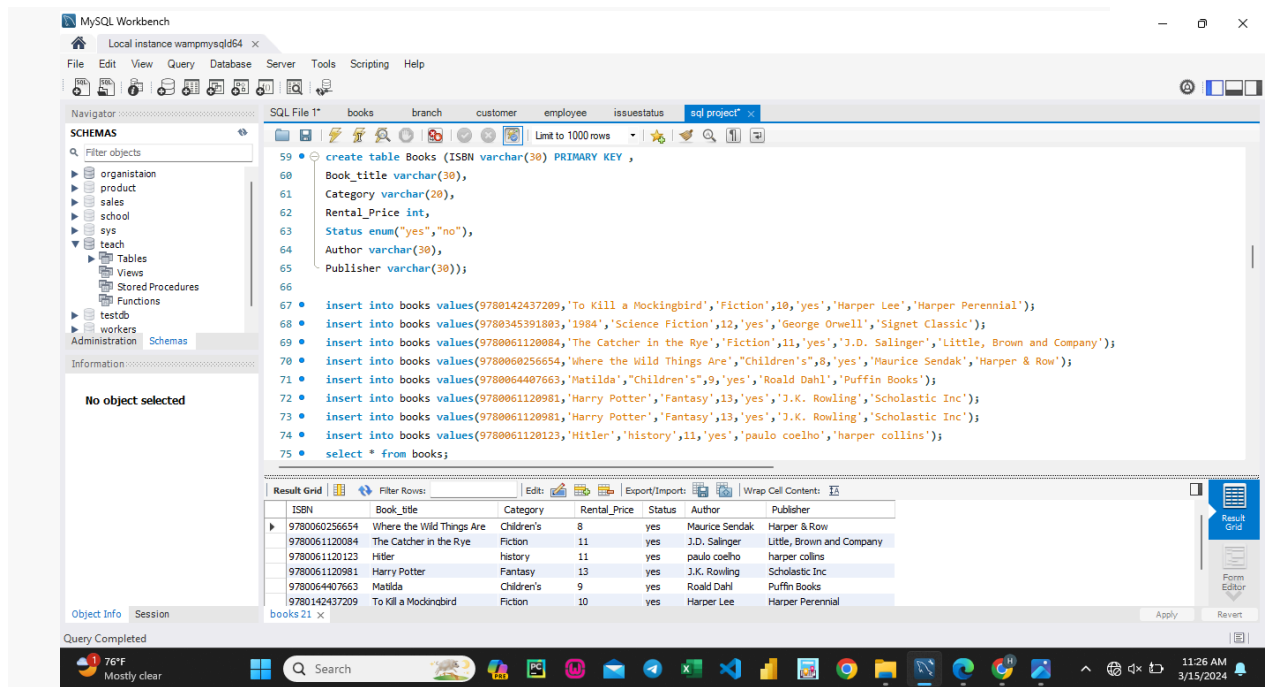
**Category**

**Rental\_Price**

**Status [Give yes if book available and no if book not available]**

**Author**

**Publisher**



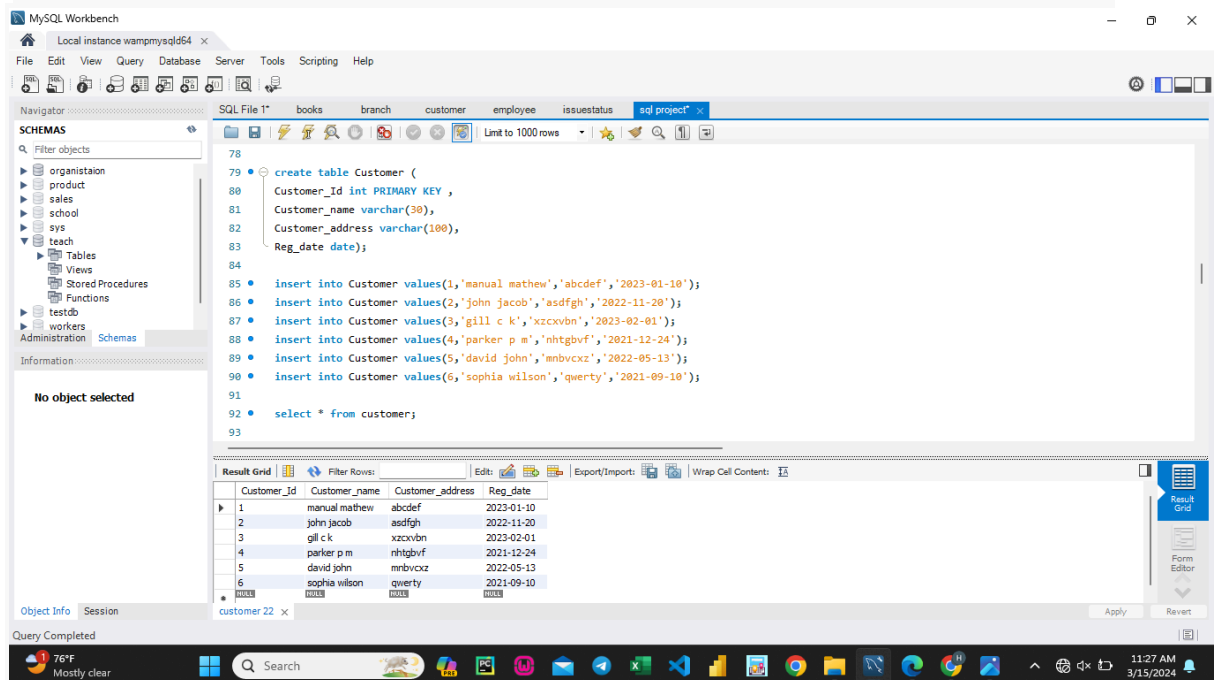
#### 4. Customer

**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**

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

```
97 CREATE TABLE IssueStatus (Issue_Id INT PRIMARY KEY,  
98 Issued_cust INT,  
99 FOREIGN KEY (Issued_cust) REFERENCES customer (customer_id) ON DELETE CASCADE,  
100 issued_book_name VARCHAR(100),  
101 Issue_date DATE,  
102 isbn_book VARCHAR(30),  
103 FOREIGN KEY (Isbn_book) REFERENCES BOOKS (ISBN) ON DELETE CASCADE);  
104  
105 insert into IssueStatus values(101,2,'To Kill a Mockingbird','2023-06-10',9780142437209);  
106 insert into IssueStatus values(102,1,'1984','2023-11-11',9780345391803);  
107 insert into IssueStatus values(103,3,'The Catcher in the Rye','2023-01-20',9780061120084);  
108 insert into IssueStatus values(104,5,'Where the Wild Things Are','2023-09-18',9780060256654);  
109 insert into IssueStatus values(105,2,'Matilda','2023-06-10',9780064407663);  
110 insert into IssueStatus values(106,4,'Harry Potter','2023-01-26',9780061120981);  
111  
112 select * from IssueStatus;  
113
```

The Result Grid shows the following data:

Issue_Id	Issued_cust	issued_book_name	Issue_date	isbn_book
101	2	To Kill a Mockingbird	2023-06-10	9780142437209
102	1	1984	2023-11-11	9780345391803
103	3	The Catcher in the Rye	2023-01-20	9780061120084
104	5	Where the Wild Things Are	2023-09-18	9780060256654
105	2	Matilda	2023-06-10	9780064407663
106	4	Harry Potter	2023-01-26	9780061120981

## 6. ReturnStatus

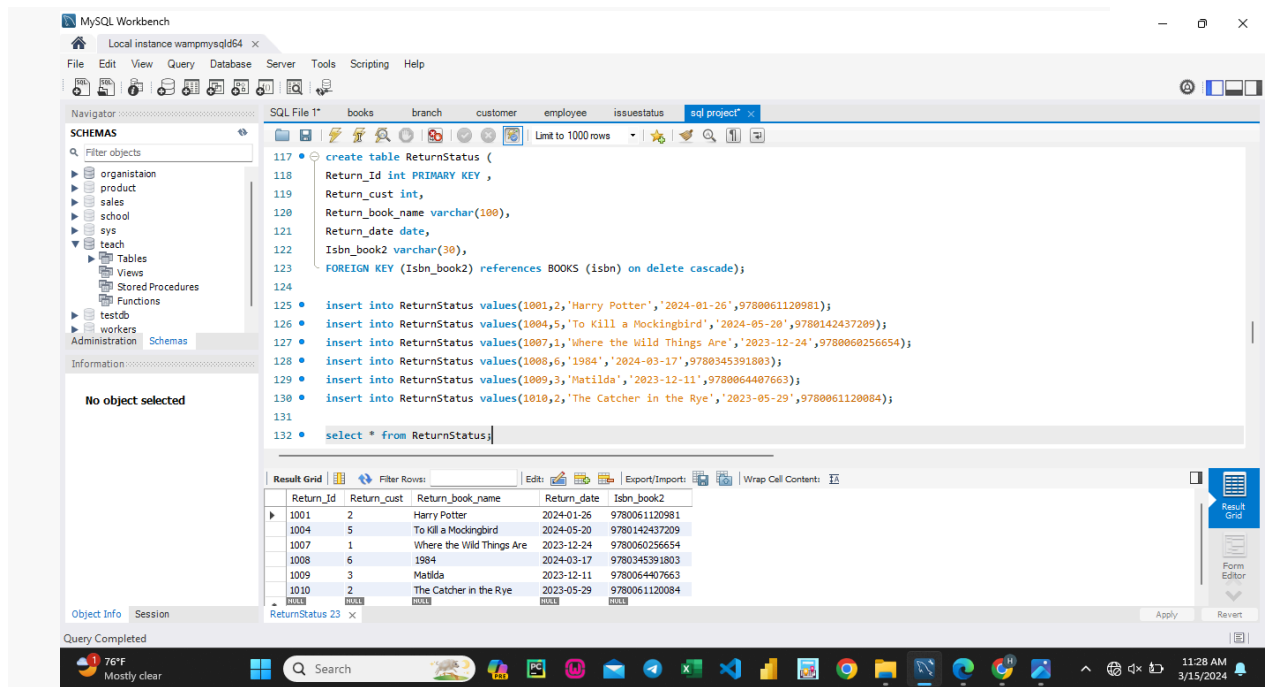
**Return\_Id - Set as PRIMARY KEY**

**Return\_cust**

**Return\_book\_name**

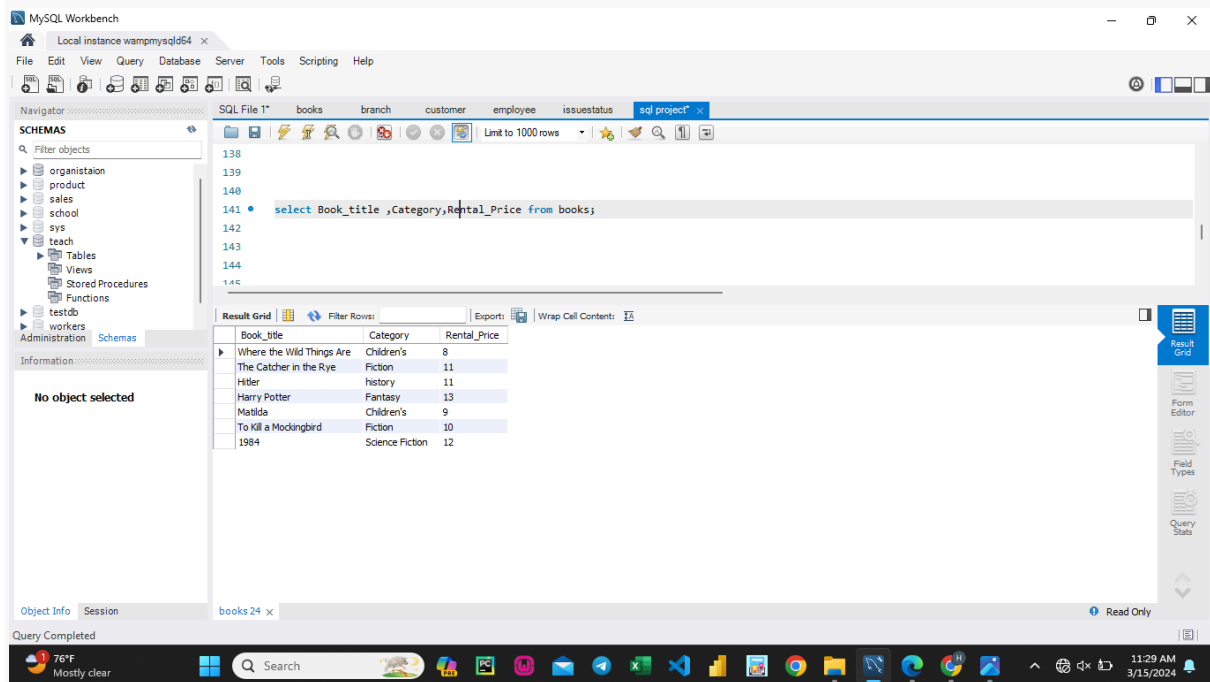
**Return\_date**

**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.

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

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

select emp_name,salary from employee order by salary desc;
```

The Result Grid displays the following data:

emp_name	salary
mary mariyam	60000
sara mathew	60000
john thomas	50000
will smith	40000
albin a b	40000
john doe	30000
david brownie	30000
albin thomas	30000
manu kuriyan	30000
sinjo sabu	30000

The interface also shows the Navigator panel on the left with a tree view of schemas, and the bottom status bar indicating the query is completed.

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

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

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

select i.issued_book_name , 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;
```

The Result Grid displays the following data:

issued_book_name	customer_name
To Kill a Mockingbird	john jacob
1984	manual mathew
The Catcher in the Rye	gil c k
Where the Wild Things Are	david john
Matilda	john jacob
Harry Potter	parker p m

The interface also shows the Navigator panel on the left with a tree view of schemas, and the bottom status bar indicating the query is completed.

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

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

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

select category ,count(*)as count_of_books from books group by category;
```

The Result Grid displays the following data:

category	count_of_books
Children's	2
Fiction	2
history	1
Fantasy	1
Science Fiction	1

The bottom status bar indicates "Query Completed".

#### 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 SQL Editor contains the following query:

```
#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;
```

The Result Grid displays the following data:

emp_name	position
mary mariyam	manager
sara mathew	manager

The bottom status bar indicates "Query Completed".



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 SQL Editor contains the following query:

```
180
181
182 #6. List the customer names who registered before 2022-01-01 and have not issued any books yet.
183
184 • select c.customer_name,c.reg_date from customer c
185 left join issuestatus i on c.customer_id = i.Issued_cust
186 where c.reg_date < '2022-01-01' and i.Issued_cust is null;
187
```

The Result Grid shows the following data:

customer_name	reg_date
sophia wilson	2021-09-10

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:

```
191
192
193 #7. Display the branch numbers and the total count of employees in each branch.
194 • select b.branch_no ,count(e.emp_id)as employees from branch b
195 left join employee e on b.branch_no =e.branch_no
196 group by branch_no;
197
198
```

The Result Grid shows the following data:

branch_no	employees
1	7
2	3
3	0
4	0
5	0
6	0

## 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:

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

select c.customer_name,i.issue_date from customer c
left join issuestatus i on c.customer_id=i.Issued_cust
where month (i.issue_date)=6;
```

The Result Grid shows the following data:

customer_name	issue_date
john jacob	2023-06-10
john jacob	2023-06-10

The bottom status bar indicates "Query Completed".

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

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

```
#9. Retrieve book_title from book table containing history.

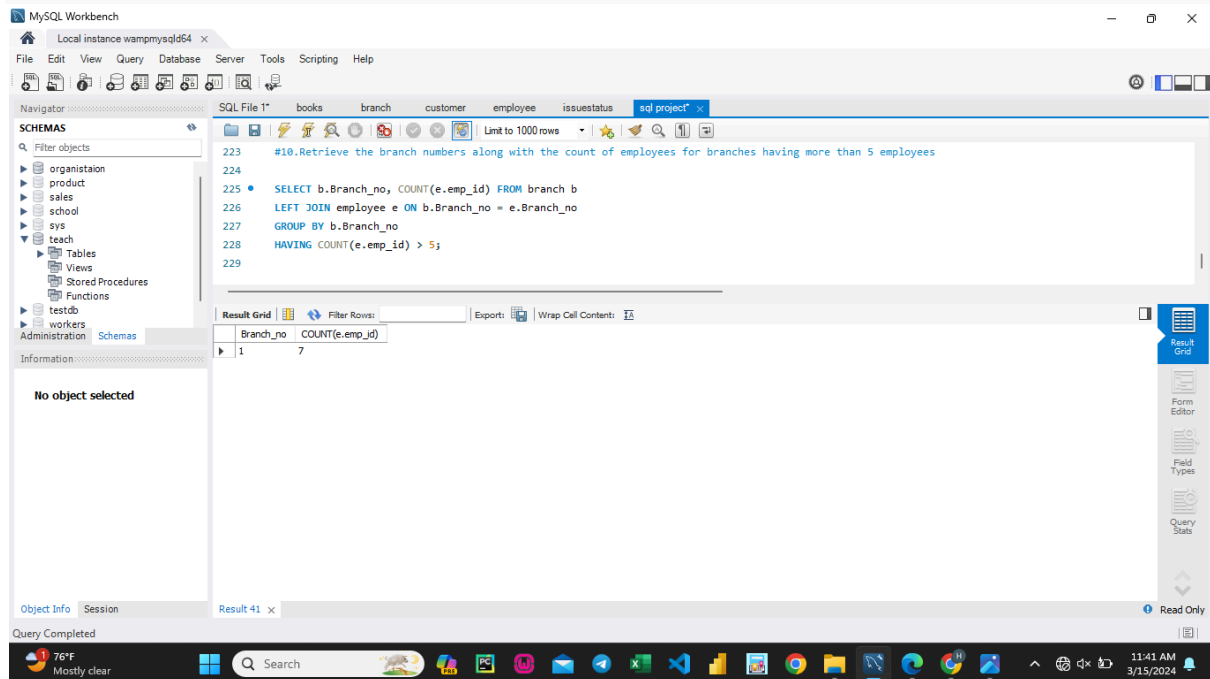
select book_title from books where category="history";
```

The Result Grid shows the following data:

book_title
Hitler

The bottom status bar indicates "Query Completed".

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



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

```
#10.Retrieve the branch numbers along with the count of employees for branches having more than 5 employees  
  
SELECT b.Branch_no, COUNT(e.emp_id) FROM branch b  
LEFT JOIN employee e ON b.Branch_no = e.Branch_no  
GROUP BY b.Branch_no  
HAVING COUNT(e.emp_id) > 5;
```

The Result Grid shows the following data:

Branch_no	COUNT(e.emp_id)
1	7

The interface also shows a Schemas sidebar on the left with a tree view of databases and tables. The bottom status bar indicates the query was completed successfully.