Topic : Library Management System

Question

You are going to build a project based on the 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.

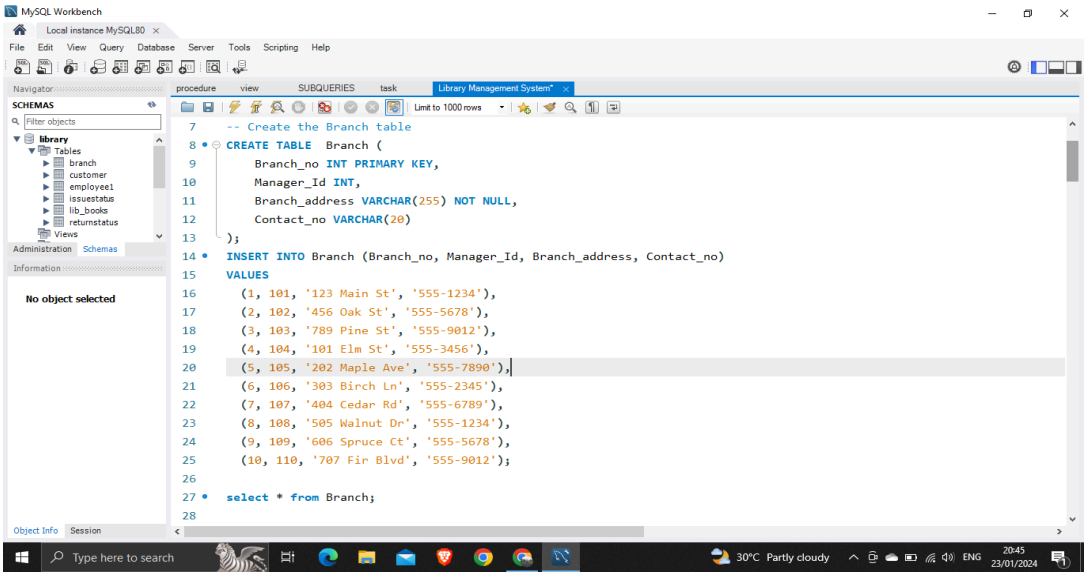
Create a database named library and the following TABLES in the database:

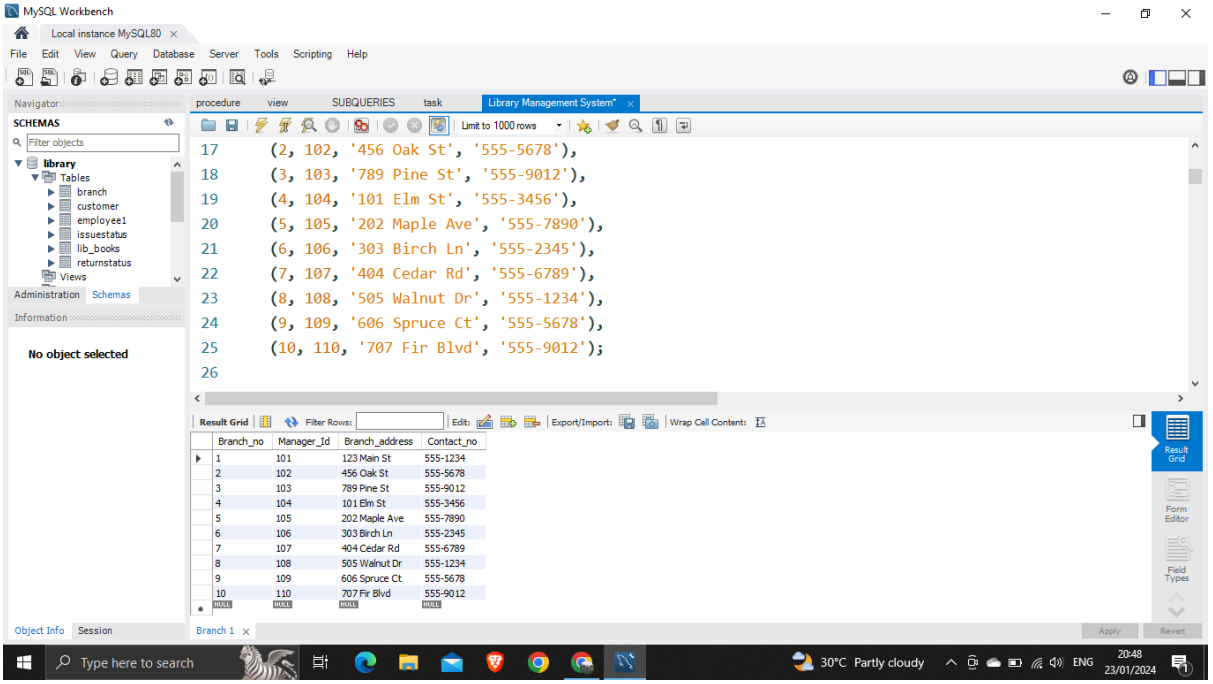
1. Branch
2. Employee
3. Books
4. Customer
5. IssueStatus
6. ReturnStatus

Answer

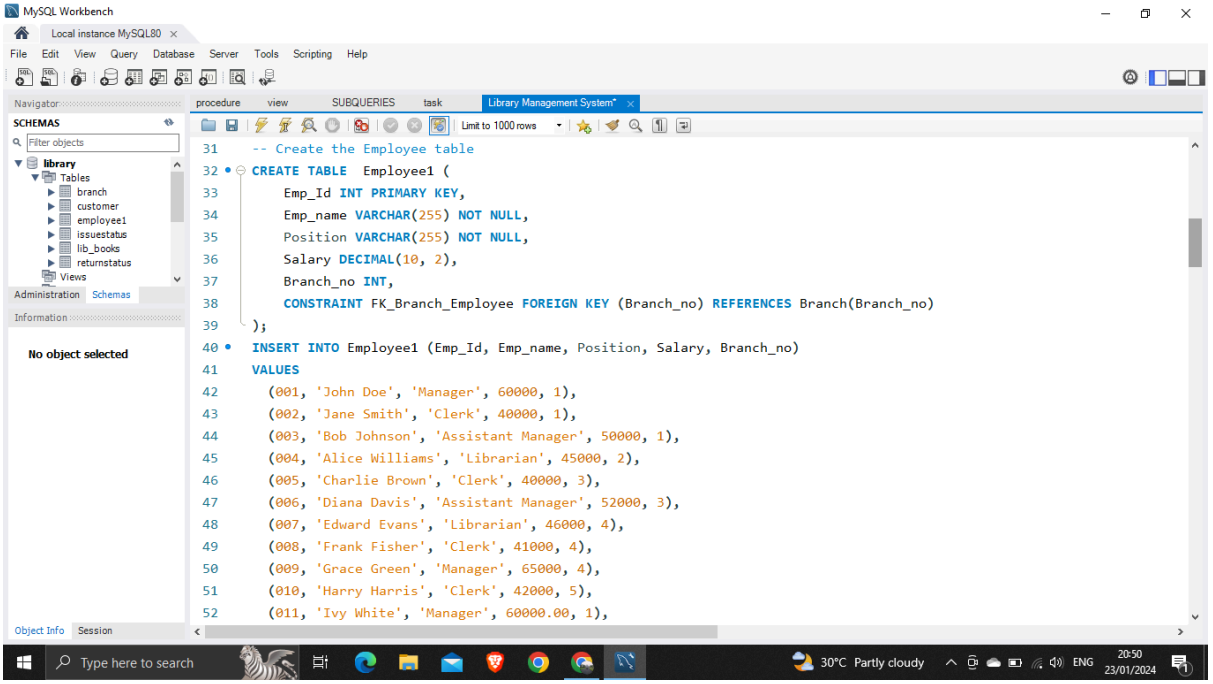
1.Branch Table: Stores information about different branches of the library, including branch numbers, manager IDs, addresses, and contact numbers.
2.Employee Table: Manages details of library staff, such as employee IDs, names, positions, salaries, and the branch to which they are assigned.
3.Books Table: Contains details about the books available in the library, including ISBN, book title, category, rental price, availability status, author, and publisher.
4.Customer Table: Stores information about library patrons, including customer IDs, names, addresses, and registration dates.
5.IssueStatus Table: Records details about book issuances, including issuance IDs, customer IDs, issued book names, and issuance dates.
6.ReturnStatus Table: Manages information about book returns, including return IDs, customer IDs, returned book names, return dates, and ISBNs.

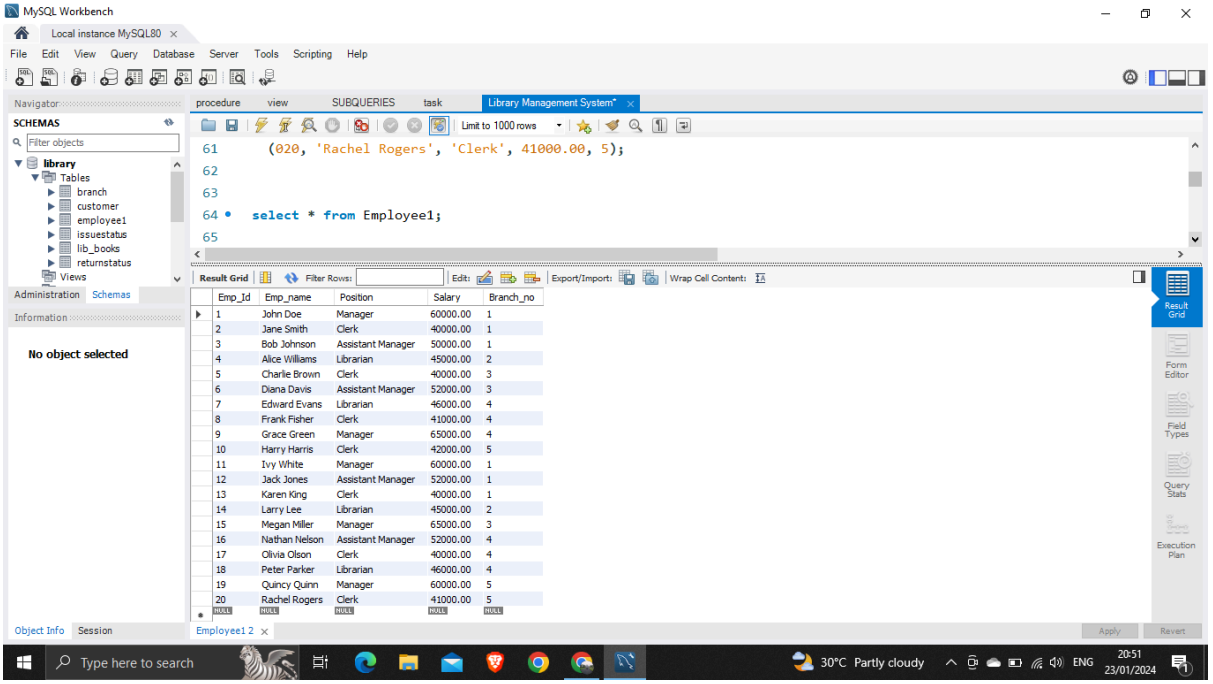
1. Branch Table



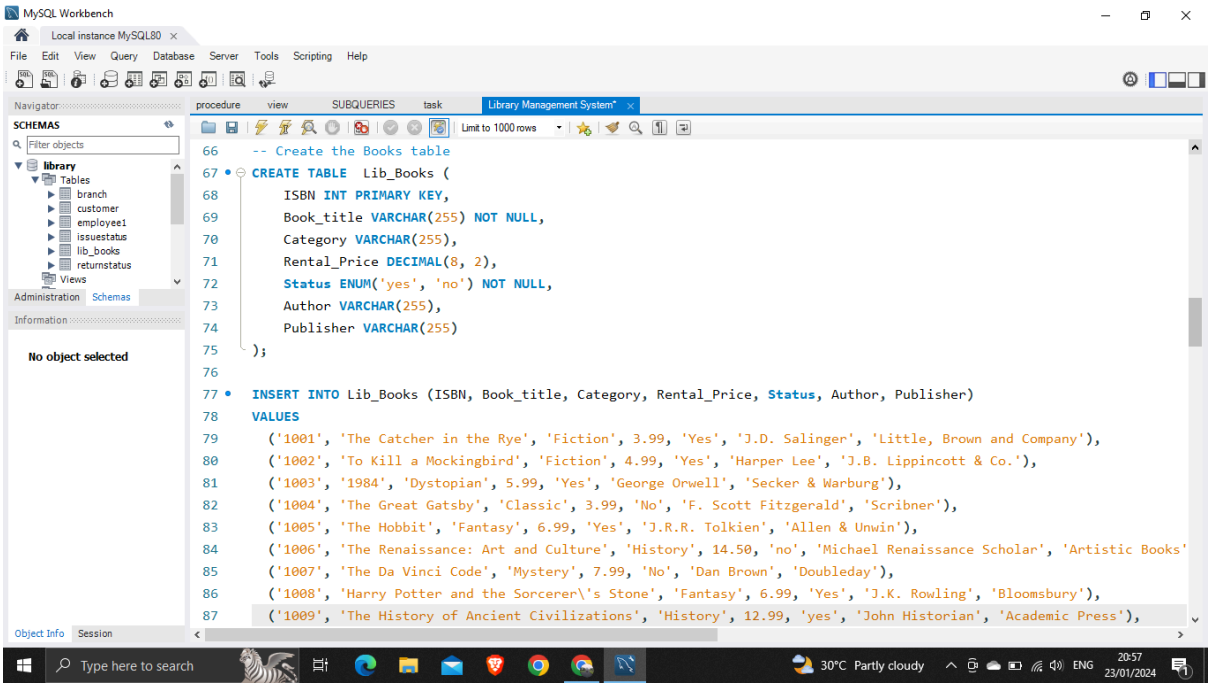


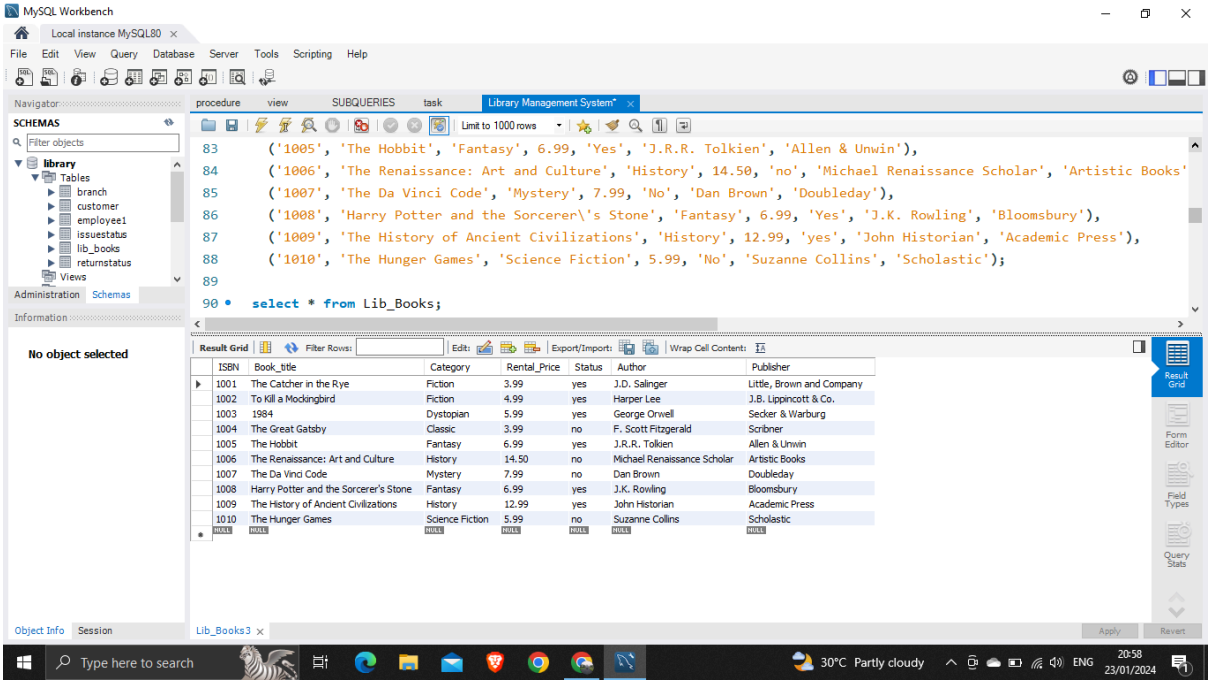
2. Employee Table


MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
library
Tables
branch
customer
employee1
issuestatus
lib_books
returnstatus
Views
Administration Schemas
Information
No object selected
Object Info Session
procedure view SUBQUERIES task Library Management System*
Limit to 1000 rows
31 -- Create the Employee table
32 CREATE TABLE Employee1 (
33 Emp_Id INT PRIMARY KEY,
34 Emp_name VARCHAR(255) NOT NULL,
35 Position VARCHAR(255) NOT NULL,
36 Salary DECIMAL(10, 2),
37 Branch_no INT,
38 CONSTRAINT FK_Branch_Employee FOREIGN KEY (Branch_no) REFERENCES Branch(Branch_no)
39);
40 INSERT INTO Employee1 (Emp_Id, Emp_name, Position, Salary, Branch_no)
41 VALUES
42 (001, 'John Doe', 'Manager', 60000, 1),
43 (002, 'Jane Smith', 'Clerk', 40000, 1),
44 (003, 'Bob Johnson', 'Assistant Manager', 50000, 1),
45 (004, 'Alice Williams', 'Librarian', 45000, 2),
46 (005, 'Charlie Brown', 'Clerk', 40000, 3),
47 (006, 'Diana Davis', 'Assistant Manager', 52000, 3),
48 (007, 'Edward Evans', 'Librarian', 46000, 4),
49 (008, 'Frank Fisher', 'Clerk', 41000, 4),
50 (009, 'Grace Green', 'Manager', 65000, 4),
51 (010, 'Harry Harris', 'Clerk', 42000, 5),
52 (011, 'Ivy White', 'Manager', 60000.00, 1),
Type here to search
30°C Partly cloudy
ENG
20:50
23/01/2024

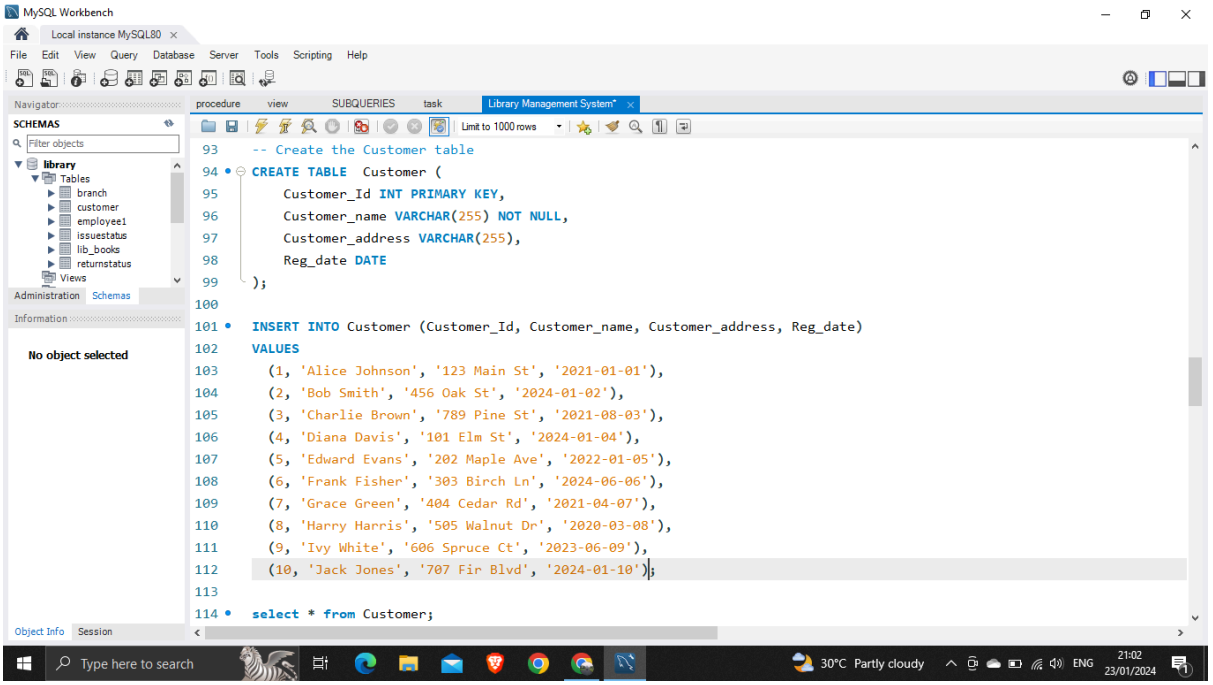

MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
library
Tables
branch
customer
employee1
issuestatus
lib_books
returnstatus
Views
Administration Schemas
Information
No object selected
Object Info Session
procedure view SUBQUERIES task Library Management System*
Limit to 1000 rows
61 (020, 'Rachel Rogers', 'Clerk', 41000.00, 5);
64 select * from Employee1;
Result Grid
Filter Rows:
Edit:
Export/Import:
Wrap Cell Content:
Emp_Id Emp_name Position Salary Branch_no
1 John Doe Manager 60000.00 1
2 Jane Smith Clerk 40000.00 1
3 Bob Johnson Assistant Manager 50000.00 1
4 Alice Williams Librarian 45000.00 2
5 Charlie Brown Clerk 40000.00 3
6 Diana Davis Assistant Manager 52000.00 3
7 Edward Evans Librarian 46000.00 4
8 Frank Fisher Clerk 41000.00 4
9 Grace Green Manager 65000.00 4
10 Harry Harris Clerk 42000.00 5
11 Ivy White Manager 60000.00 1
12 Jack Jones Assistant Manager 52000.00 1
13 Karen King Clerk 40000.00 1
14 Larry Lee Librarian 45000.00 2
15 Megan Miller Manager 65000.00 3
16 Nathan Nelson Assistant Manager 52000.00 4
17 Olivia Olson Clerk 40000.00 4
18 Peter Parker Librarian 46000.00 4
19 Quincy Quinn Manager 60000.00 5
20 Rachel Rogers Clerk 41000.00 5
Result Grid
Form Editor
Field Types
Query Stats
Execution Plan
Employee1 2
Apply
Revert
Type here to search
30°C Partly cloudy
ENG
20:51
23/01/2024

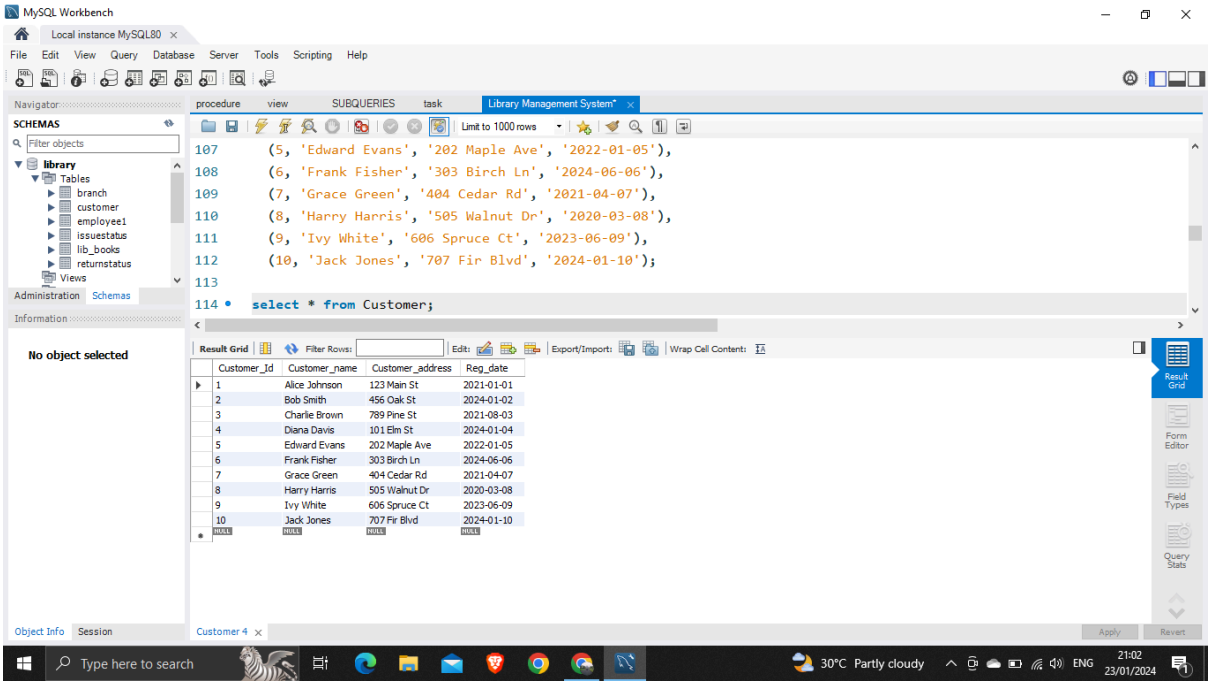
3. Books Table



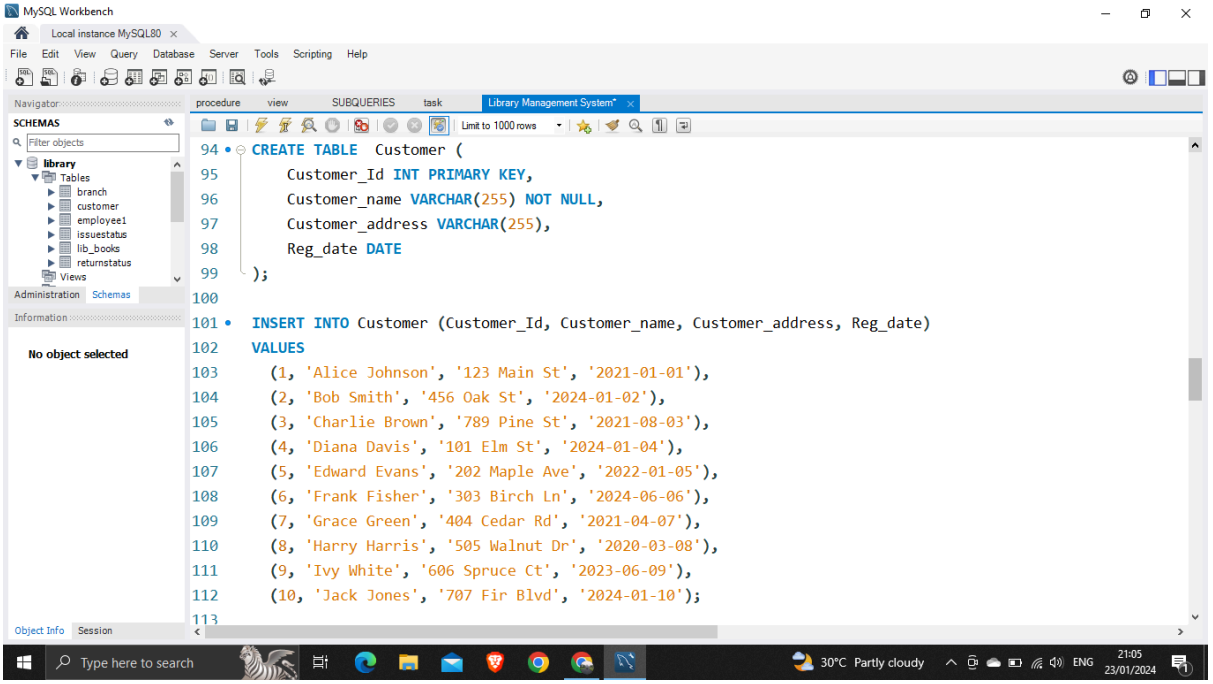


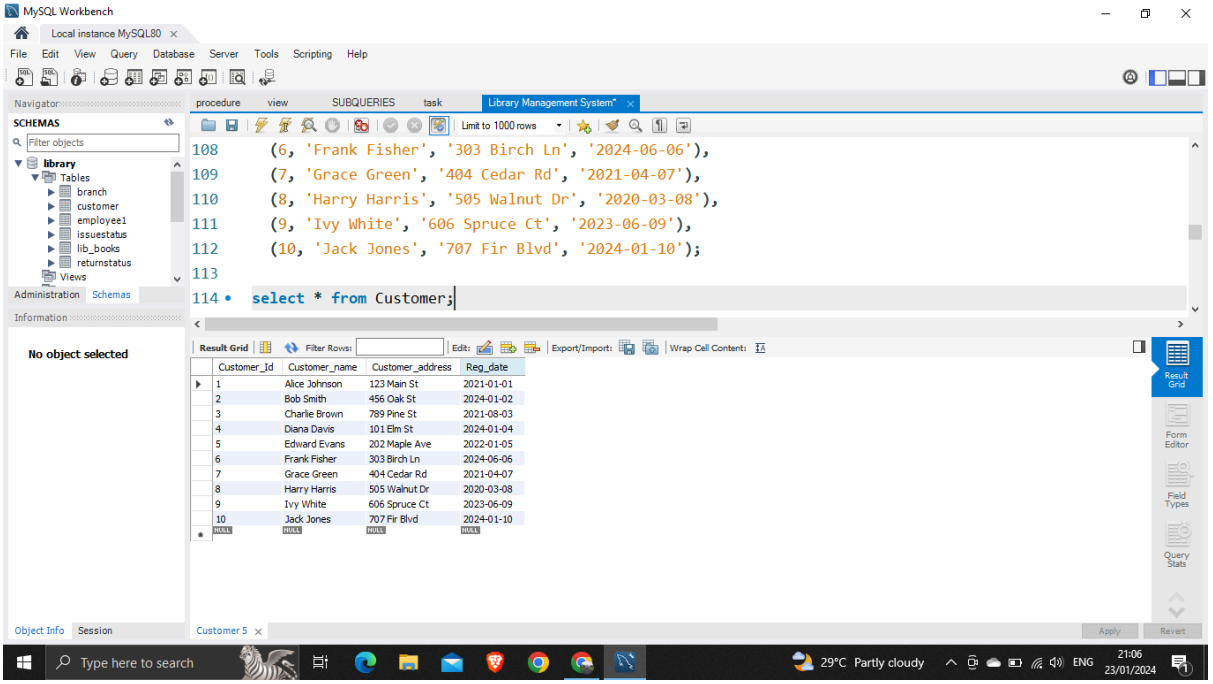
4. Customer Table



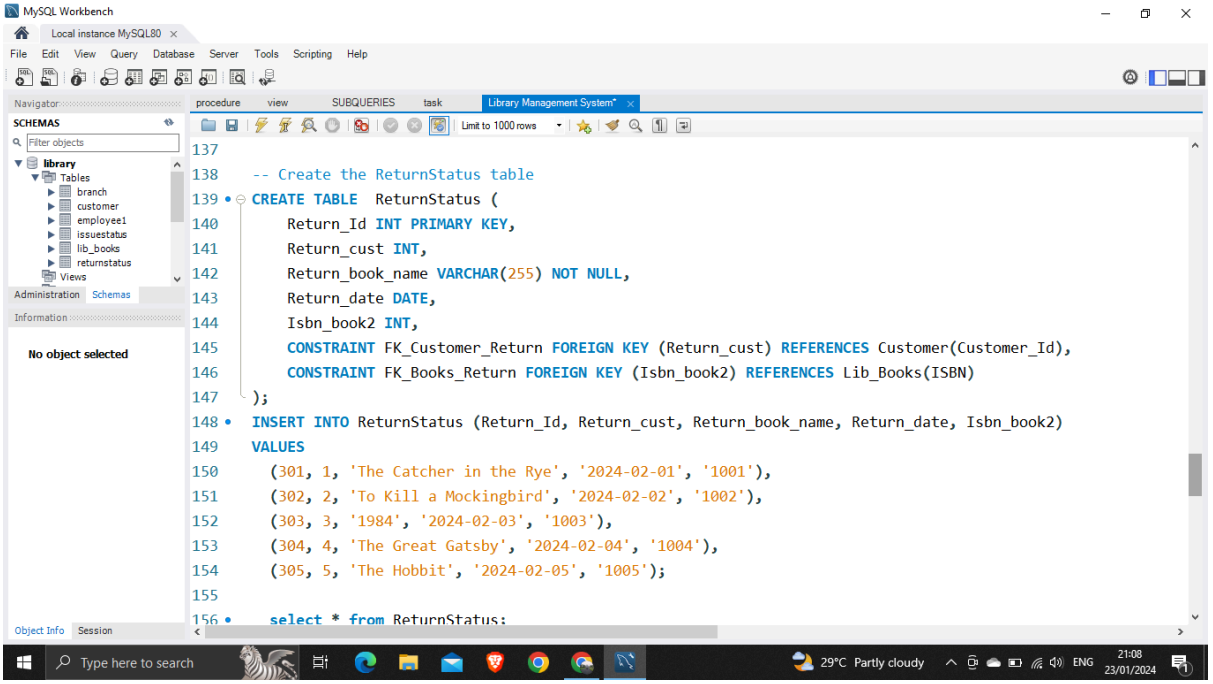


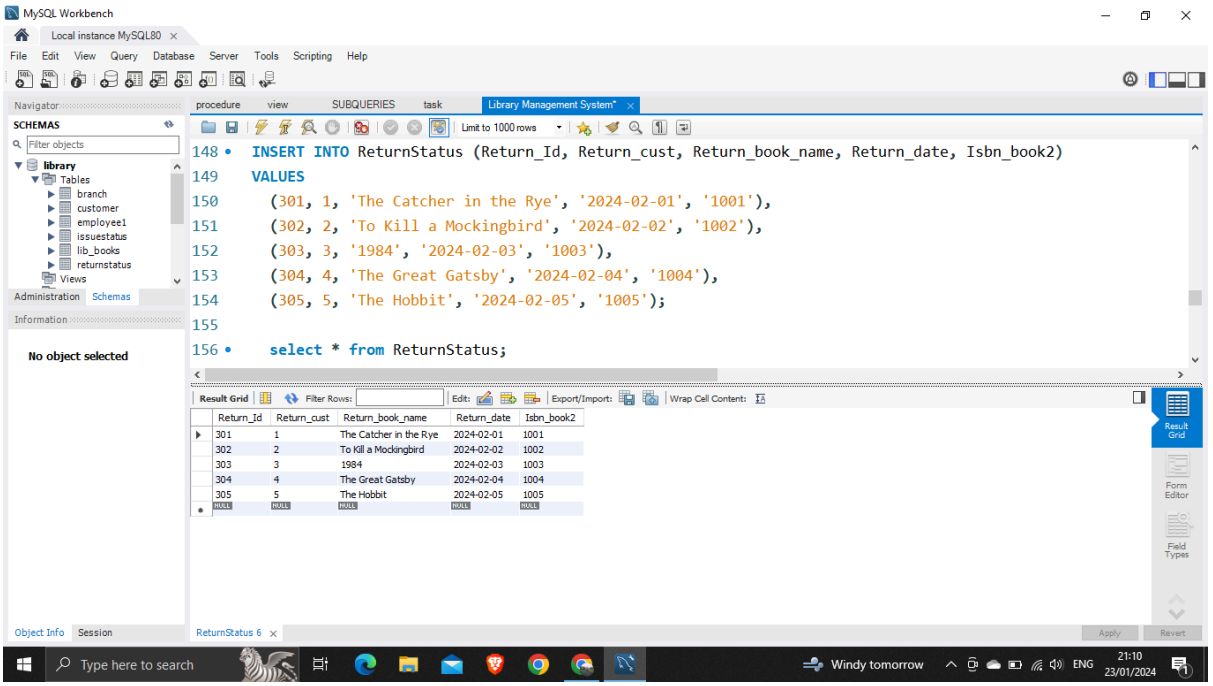
5. IssueStatus Table





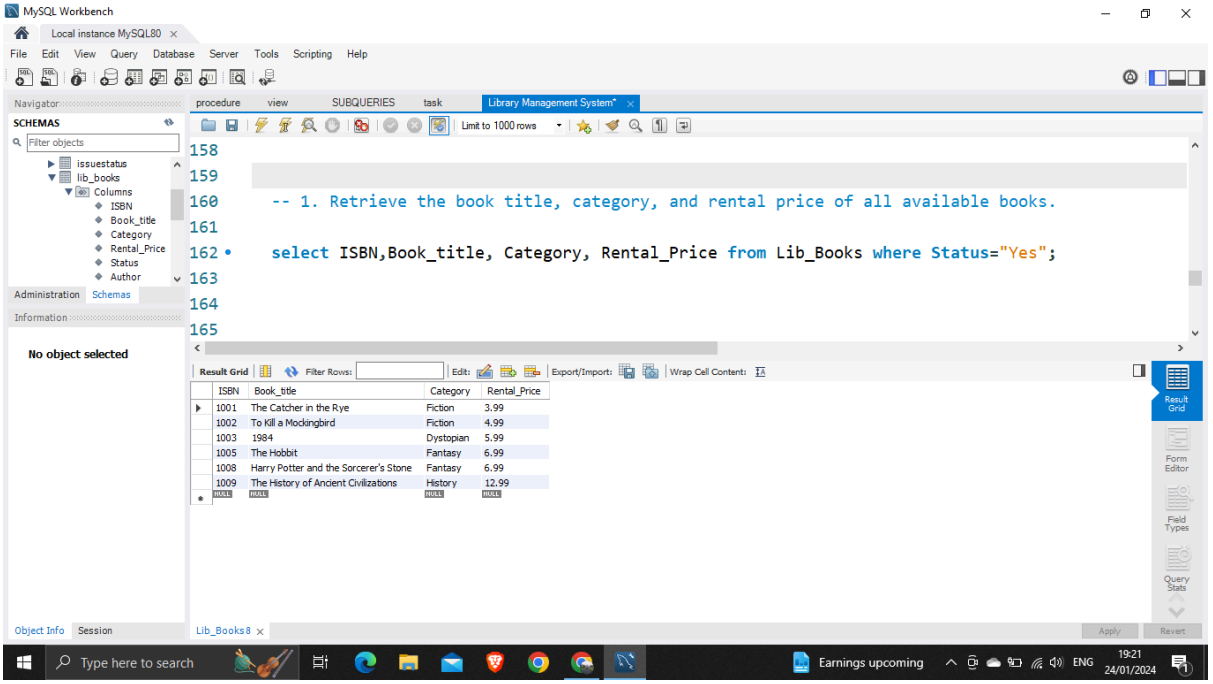
6. ReturnStatus Table



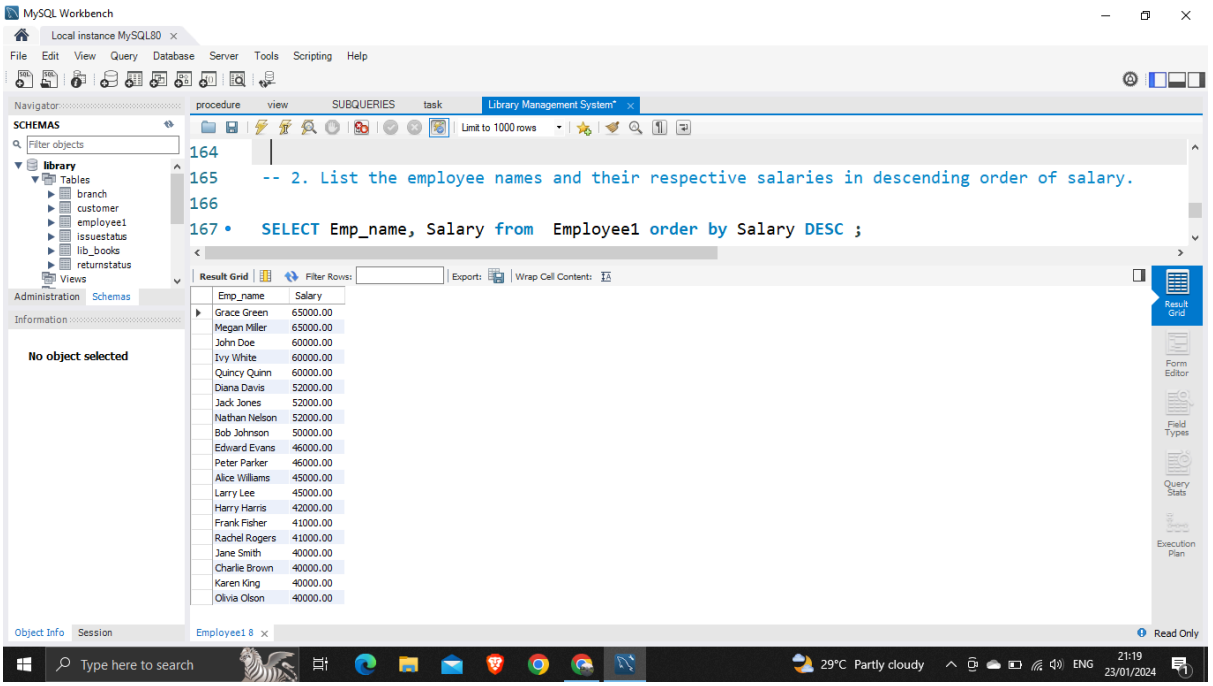


Queries and Answers

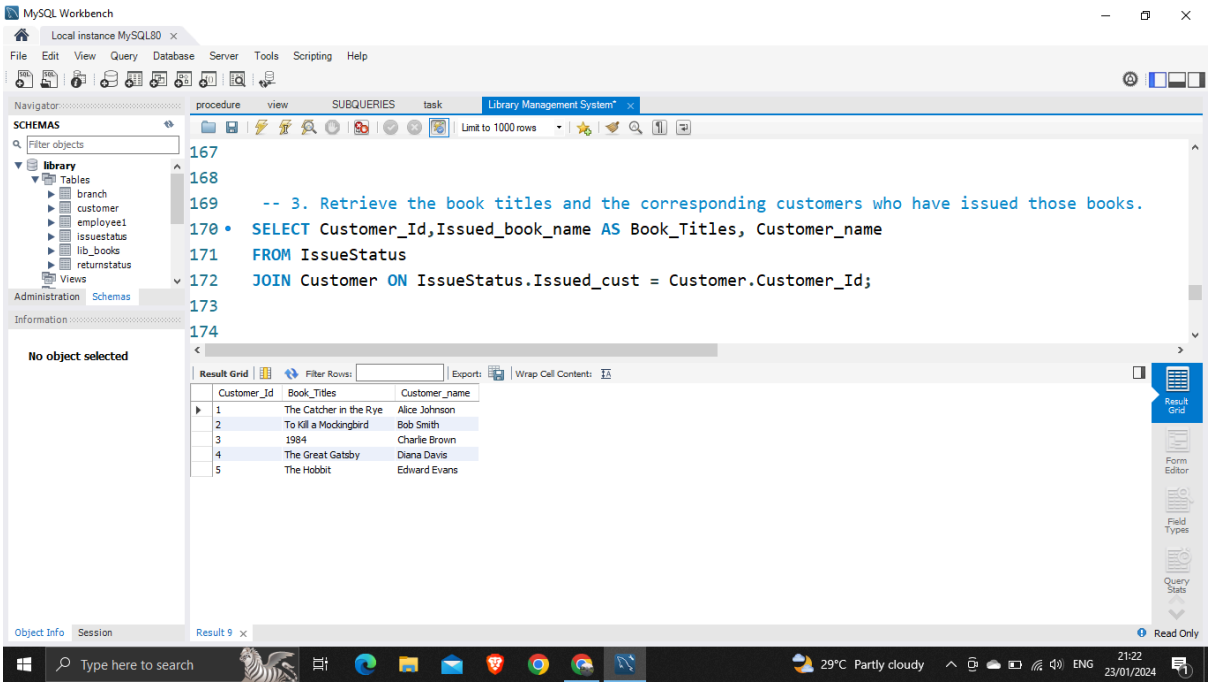
1. Retrieve the book title, category, and rental price of all available books.



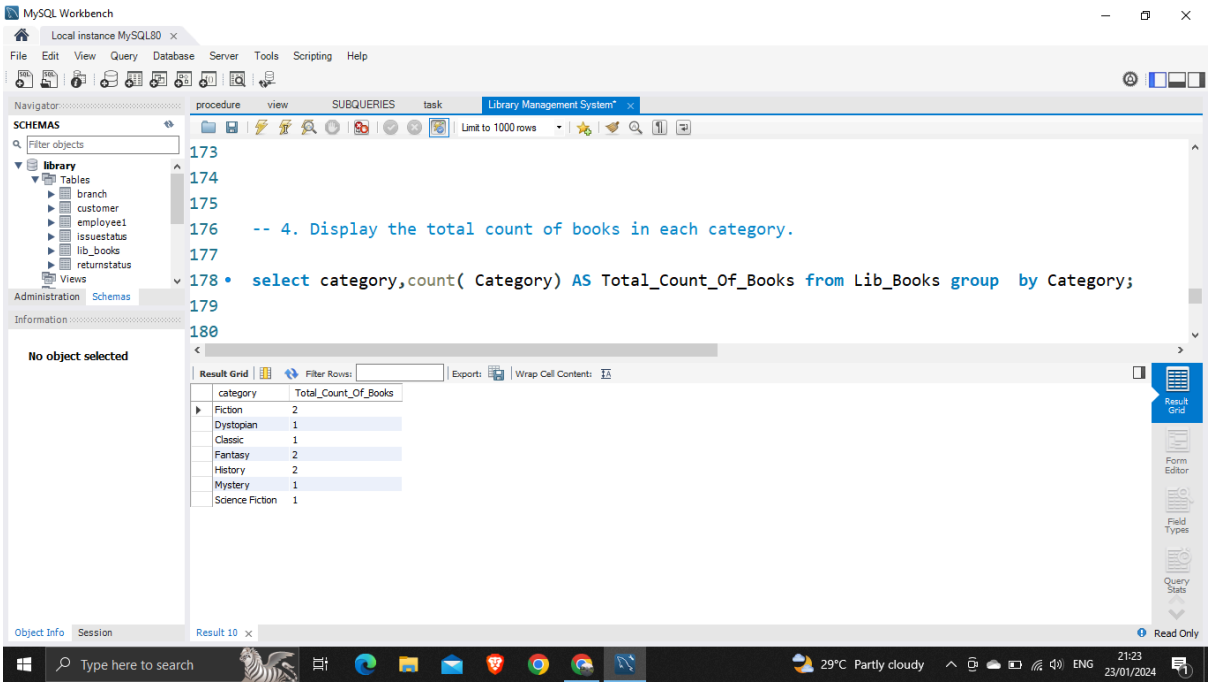
2. List the employee names and their respective salaries in descending order of salary.



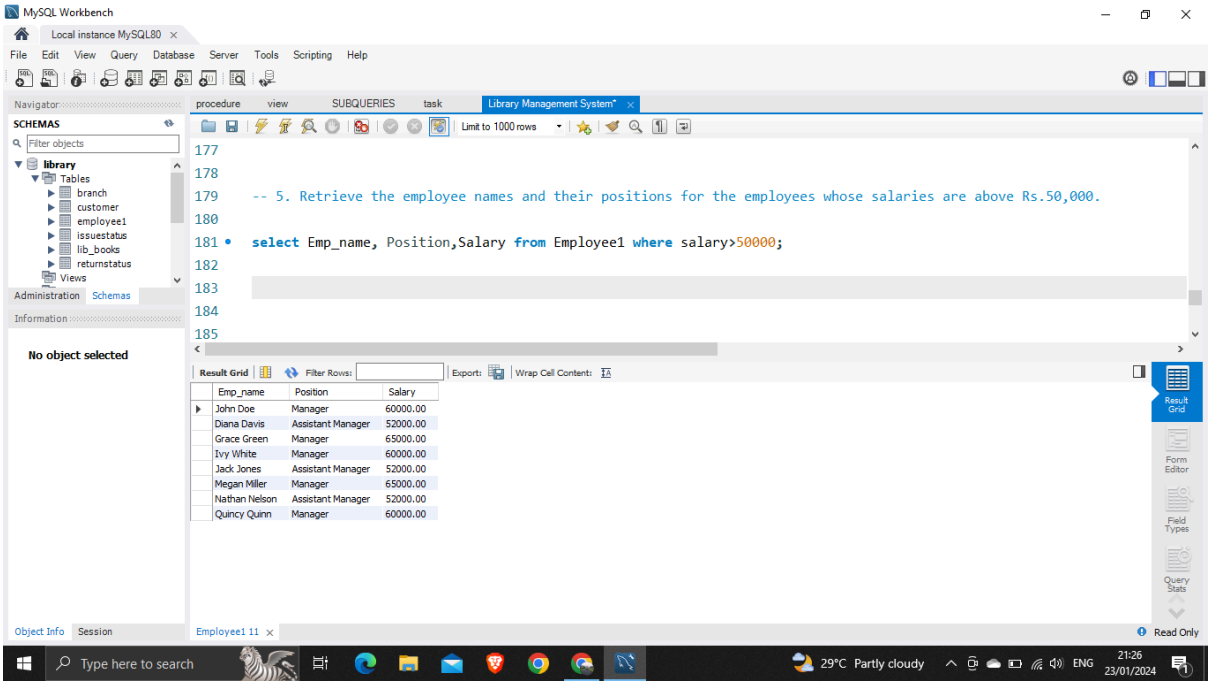
3. Retrieve the book titles and the corresponding customers who have issued those books.



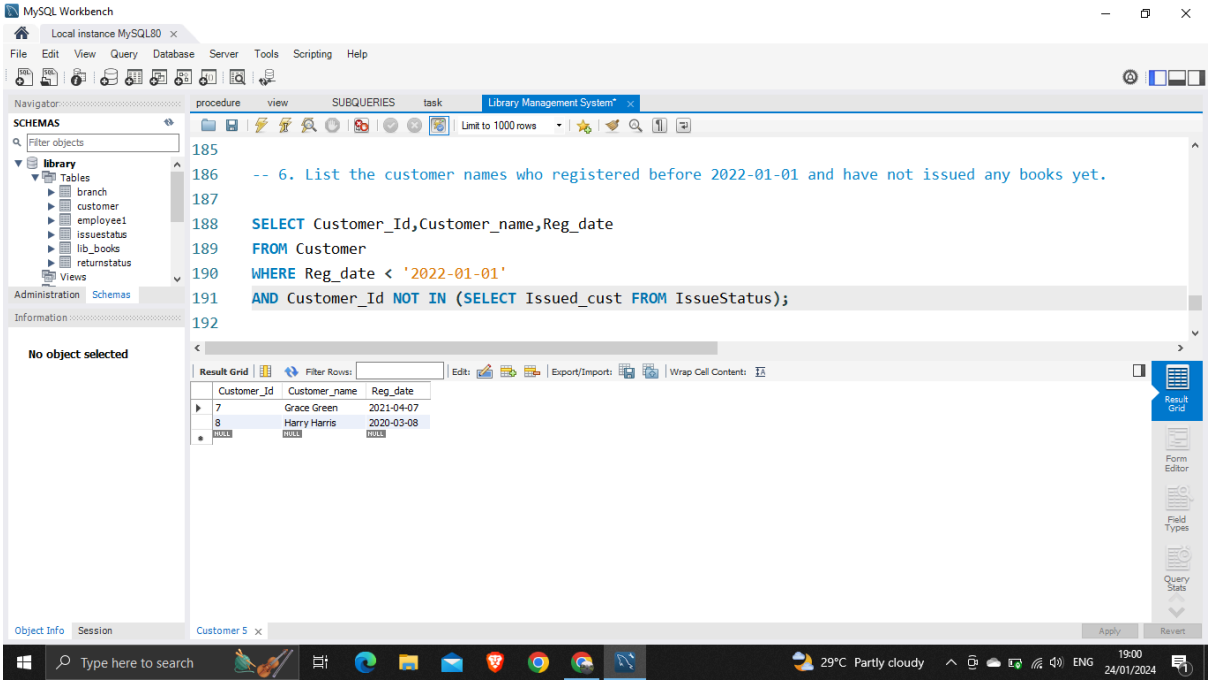
4. Display the total count of books in each category.



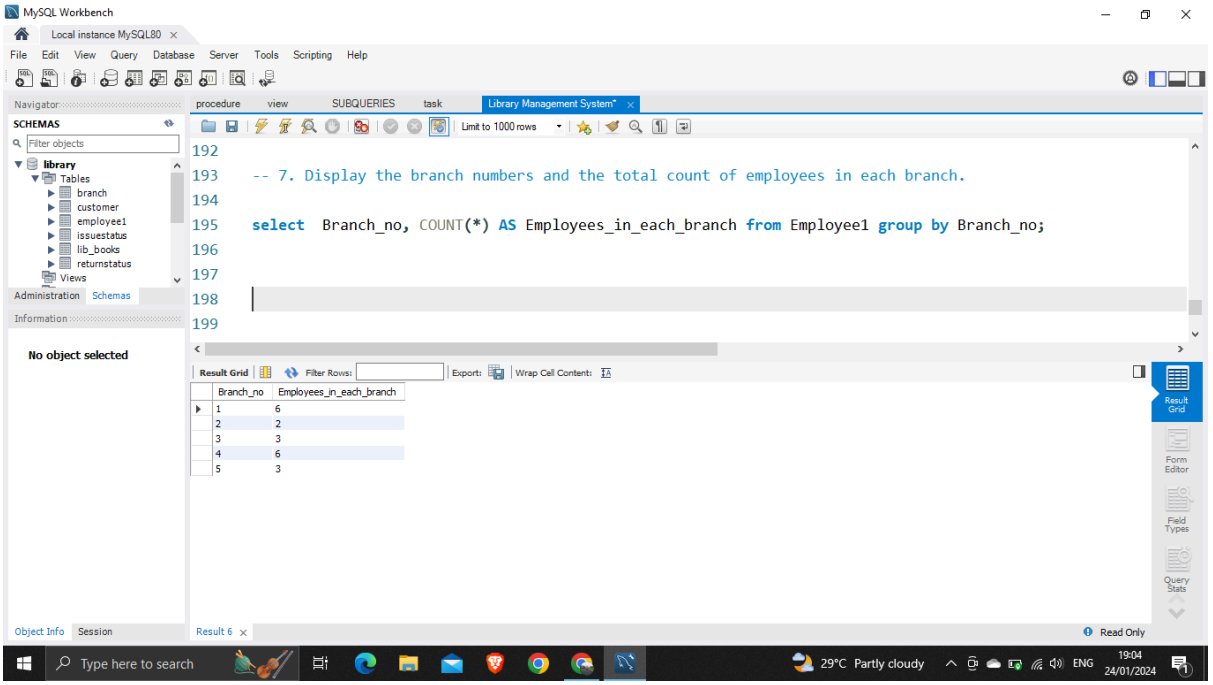
5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.



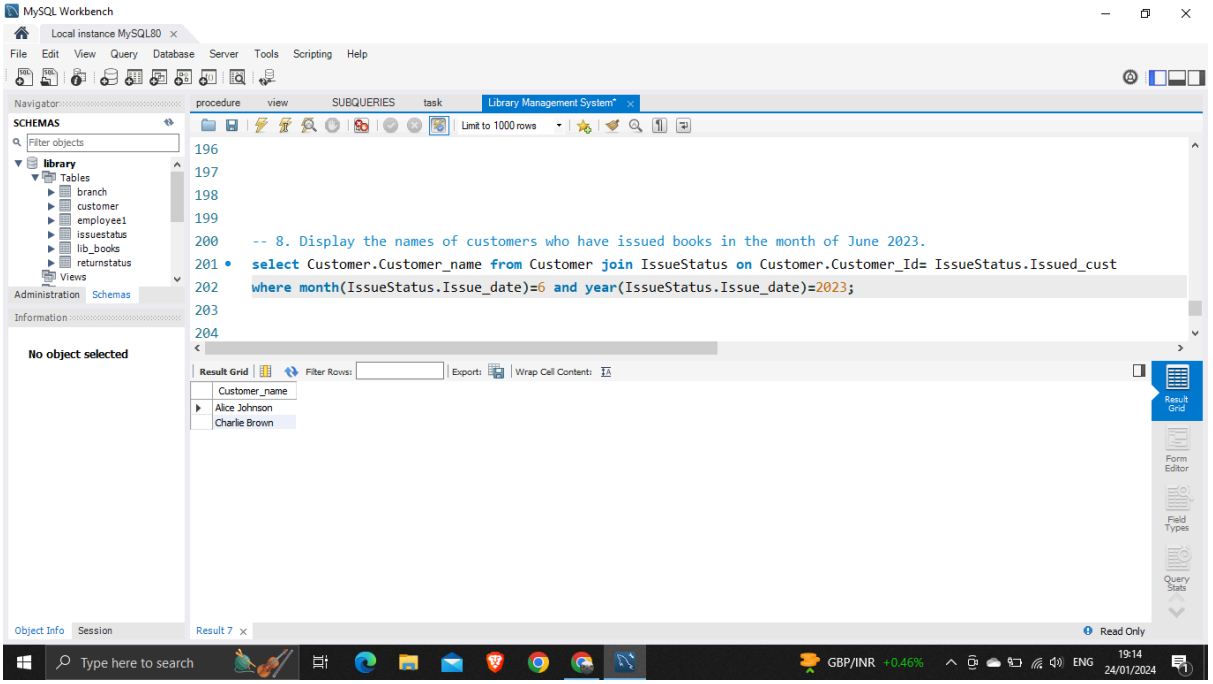
6. List the customer names who registered before 2022-01-01 and have not issued any books yet.



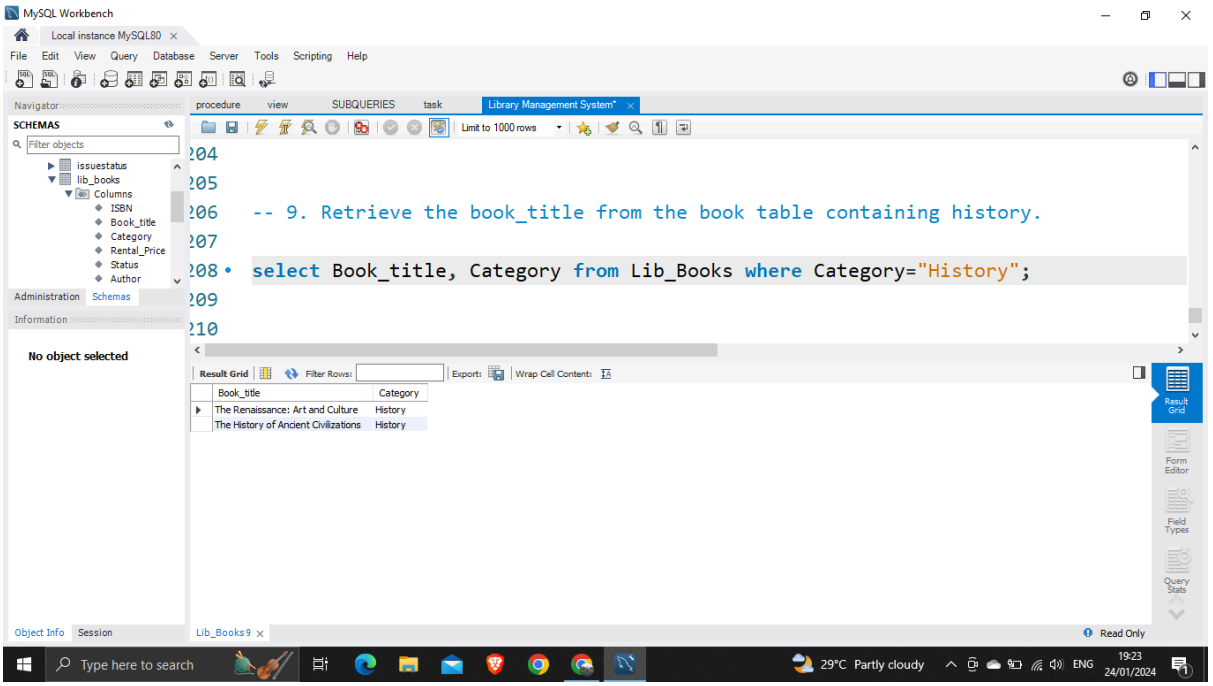
7. Display the branch numbers and the total count of employees in each branch.



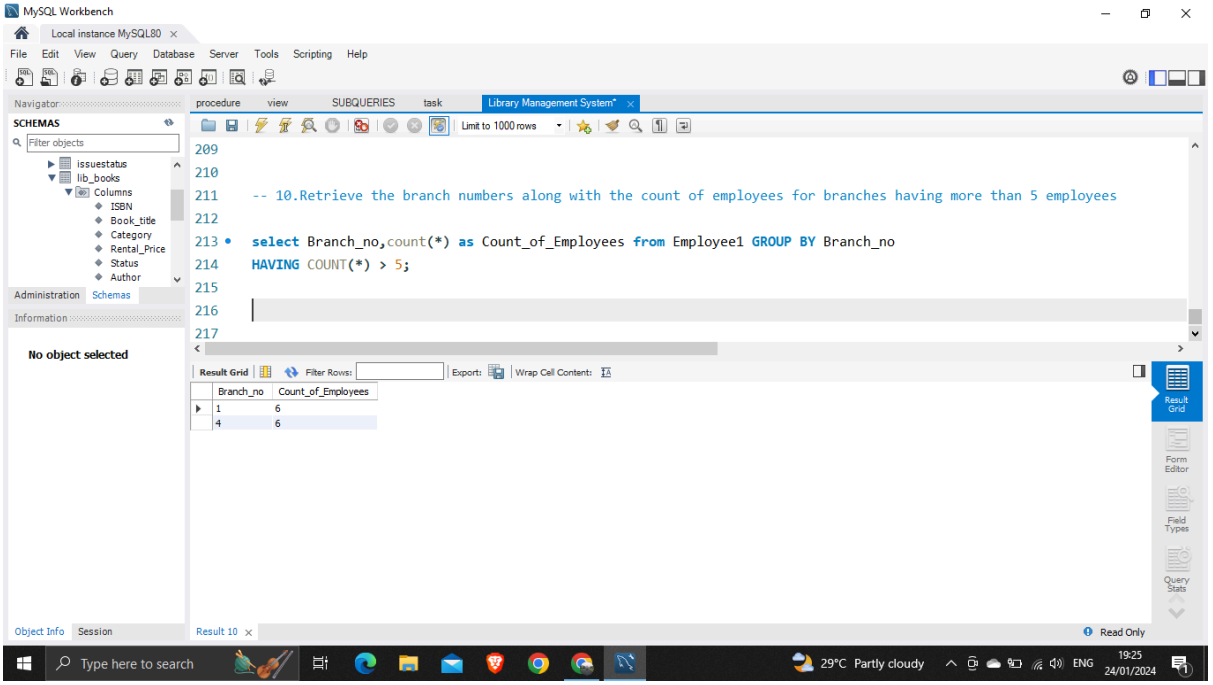
8. Display the names of customers who have issued books in the month of June 2023.



9. Retrieve the book_title from the book table containing history.



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


MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
issuestatus
lib_books
Columns
ISBN
Book_title
Category
Rental_Price
Status
Author
Administration Schemas
Information
No object selected
Object Info Session
procedure view SUBQUERIES task Library Management System*
Limit to 1000 rows
209
210
211 -- 10.Retrieve the branch numbers along with the count of employees for branches having more than 5 employees
212
213 • select Branch_no,count(*) as Count_of_Employees from Employee1 GROUP BY Branch_no
214 HAVING COUNT(*) > 5;
215
216
217
Result Grid Filter Rows: Export: Wrap Cell Content:
Branch_no Count_of_Employees
1 6
4 6
Result 10
Read Only
Result Grid
Form Editor
Field Types
Query Stats
Type here to search
29°C Partly cloudy
ENG
19:25
24/01/2024