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

```
create database library;

use library;

-- branch table

CREATE TABLE Branch (
    Branch_no CHAR(5) PRIMARY KEY,
    Manager_Id INT NOT NULL,
    Branch_address VARCHAR(30),
    Contact_no BIGINT
);
```

2. Employee

```
CREATE TABLE employee (
    Emp_Id INT PRIMARY KEY,
    Emp_name VARCHAR(20),
    Position VARCHAR(20),
    Salary INT NOT NULL,
    Branch_no CHAR(5),
    FOREIGN KEY (Branch_no)
        REFERENCES Branch (Branch_no)
);
```

3. Books

```
CREATE TABLE Books (
    ISBN INT PRIMARY KEY,
    Book_title VARCHAR(650) NOT NULL,
    Category VARCHAR(200),
    Rental_Price INT NOT NULL,
    Status varchar(3),
```

```
    Author VARCHAR(250),
    Publisher VARCHAR(205)
);
```

4. Customer

```
CREATE TABLE Customer (
    Customer_id INT PRIMARY KEY,
    Customer_name VARCHAR(20),
    Customer_address VARCHAR(30),
    Reg_date DATETIME DEFAULT CURRENT_TIMESTAMP
);
```

5. IssueStatus

```
CREATE TABLE IssueStatus (
    Issue_Id INT PRIMARY KEY,
    Issued_cust INT,
    Issue_date DATETIME DEFAULT CURRENT_TIMESTAMP,
    Isbn_book INT,
    FOREIGN KEY (Issued_cust)
        REFERENCES Customer (Customer_id),
    FOREIGN KEY (Isbn_book)
        REFERENCES Books (ISBN)
);
```

6. ReturnStatus

```
CREATE TABLE ReturnStatus (
    Return_Id INT PRIMARY KEY,
    Return_cust INT,
    Return_book_name VARCHAR(150),
    Return_date DATETIME DEFAULT CURRENT_TIMESTAMP,
    Isbn_book2 INT,
    FOREIGN KEY (Isbn_book2)
        REFERENCES Books (ISBN),
            FOREIGN KEY (Return_cust)
        REFERENCES Customer (Customer_id)
);
```

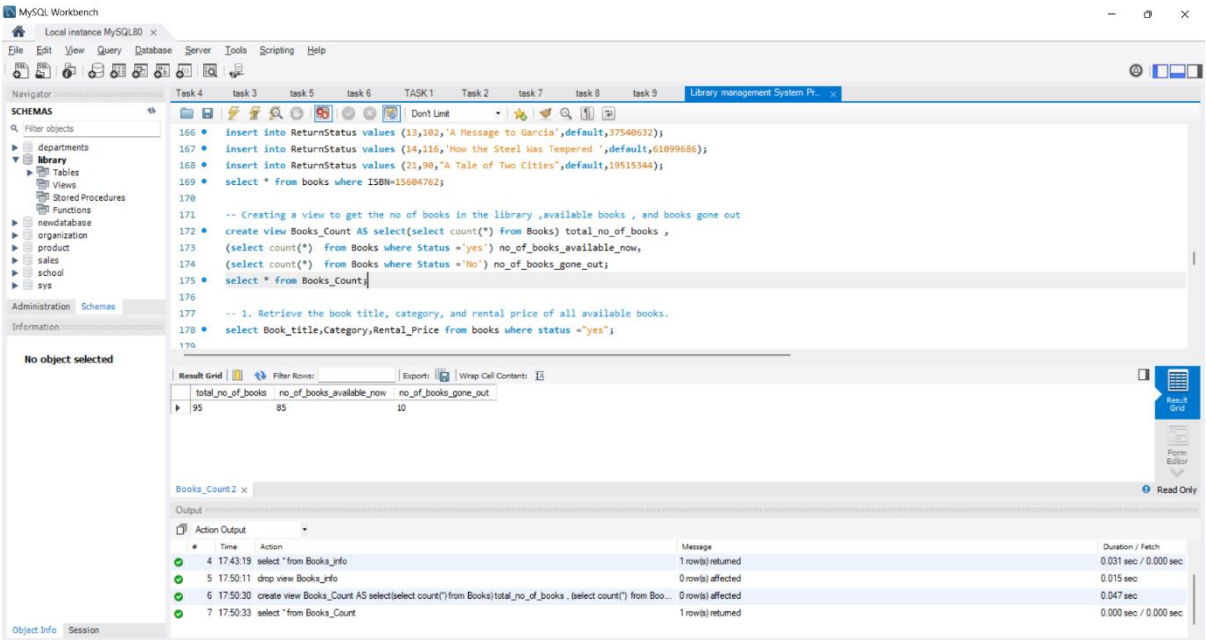
Created Some triggers and Views

-- Creating a view to get the no of books in the library ,available books , and books gone out

create view Books_Count AS select(select count(*) from Books) total_no_of_books ,

(select count(*) from Books where Status ='yes') no_of_books_available_now,

(select count(*) from Books where Status ='No') no_of_books_gone_out;



-- creating trriger before inserting the data into issuestatus to not select avoid entering book not available by checking the books table

delimiter $$

create trigger before_issue_book_to_customer before insert on IssueStatus for each row

begin DECLARE book_status varchar(3);

   SELECT Status INTO book_status FROM Books WHERE ISBN = NEW.Isbn_book;

   IF book_status = "No" THEN

      SIGNAL SQLSTATE '45000'

      SET MESSAGE_TEXT = 'Cannot issue a book that is not available';

end if;

end$$

delimiter ;

-- creating trigger after insertion for changing update the book status form the book table as not available after that book is issuesed to customer

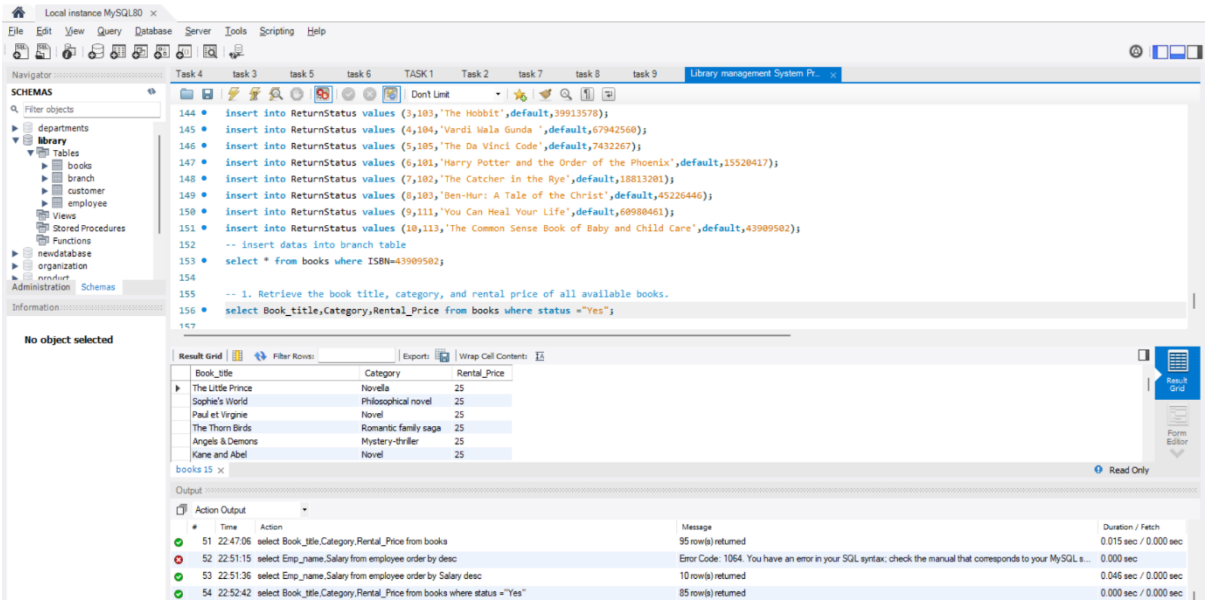
delimiter $$

create trigger after_issue_book_to_customer after insert on IssueStatus for each row

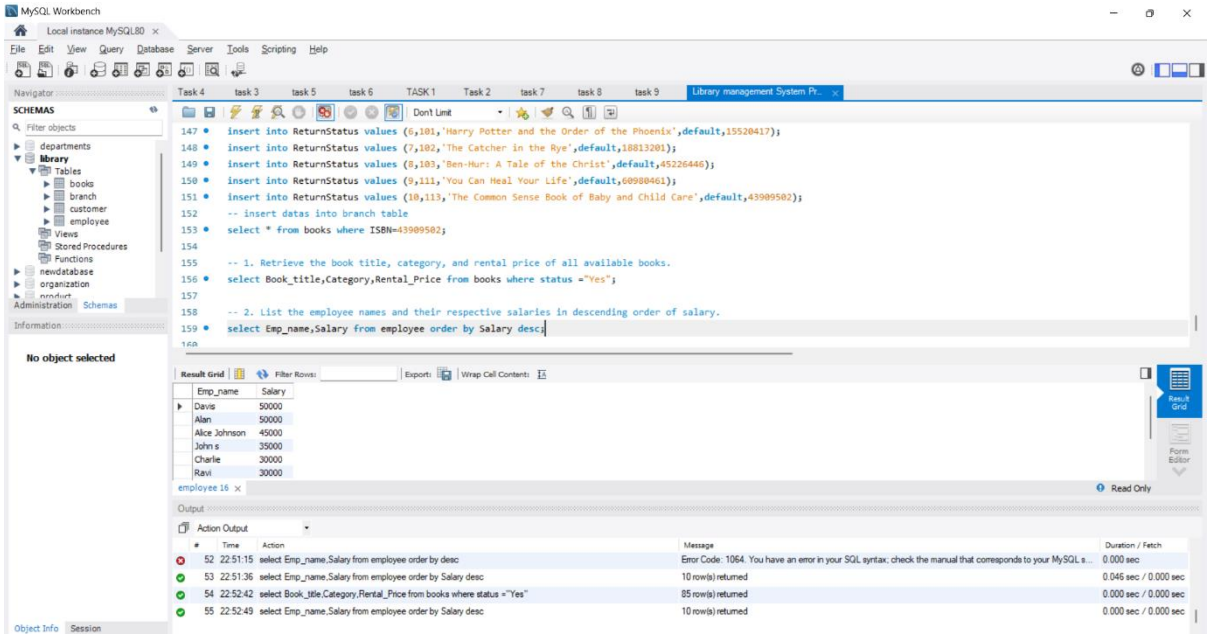
```
begin UPDATE Books
   SET Status = "no"
   WHERE ISBN = NEW.Isbn_book;
end$$
delimiter ;
```

```
-- creating after triggers to change the book status from no to yes
delimiter $$
create trigger after_return_book_to_customer after insert on ReturnStatus for each row
begin UPDATE Books
   SET Status = "Yes"
   WHERE ISBN = NEW.Isbn_book2;
end$$
delimiter ;
```

```
-- 1. Retrieve the book title, category, and rental price of all available books.
select Book_title,Category,Rental_Price from books where status ="yes";
```

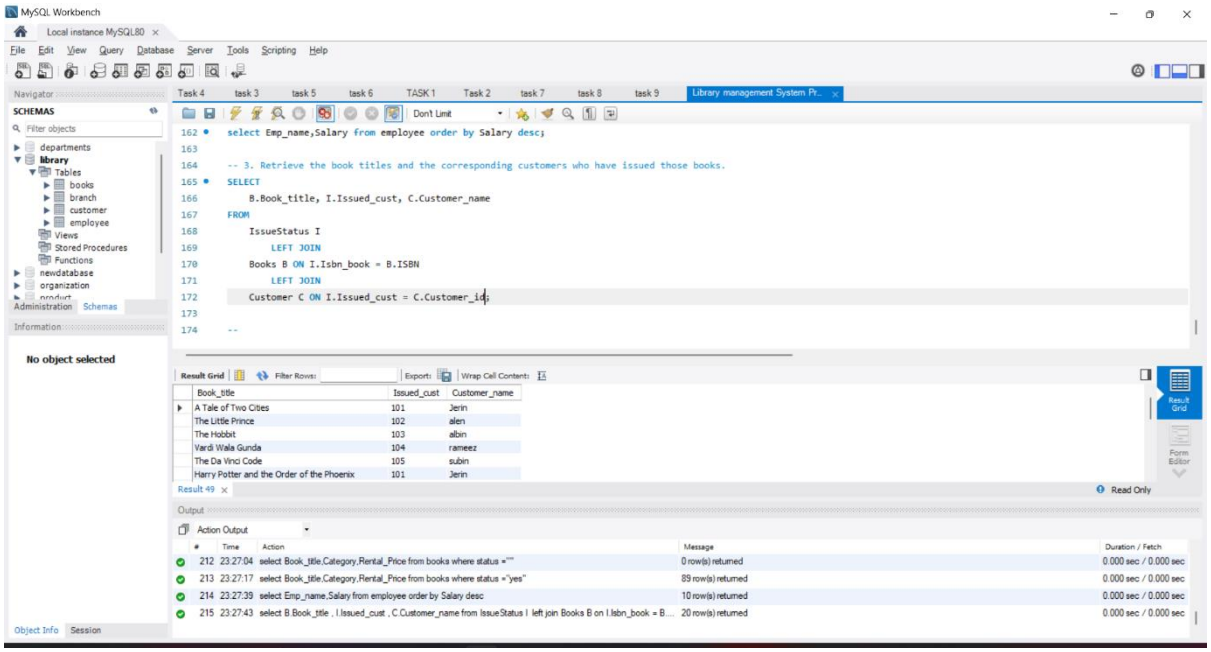



```
-- 2. List the employee names and their respective salaries in descending order of salary.
select Emp_name,Salary from employee order by Salary desc;
```



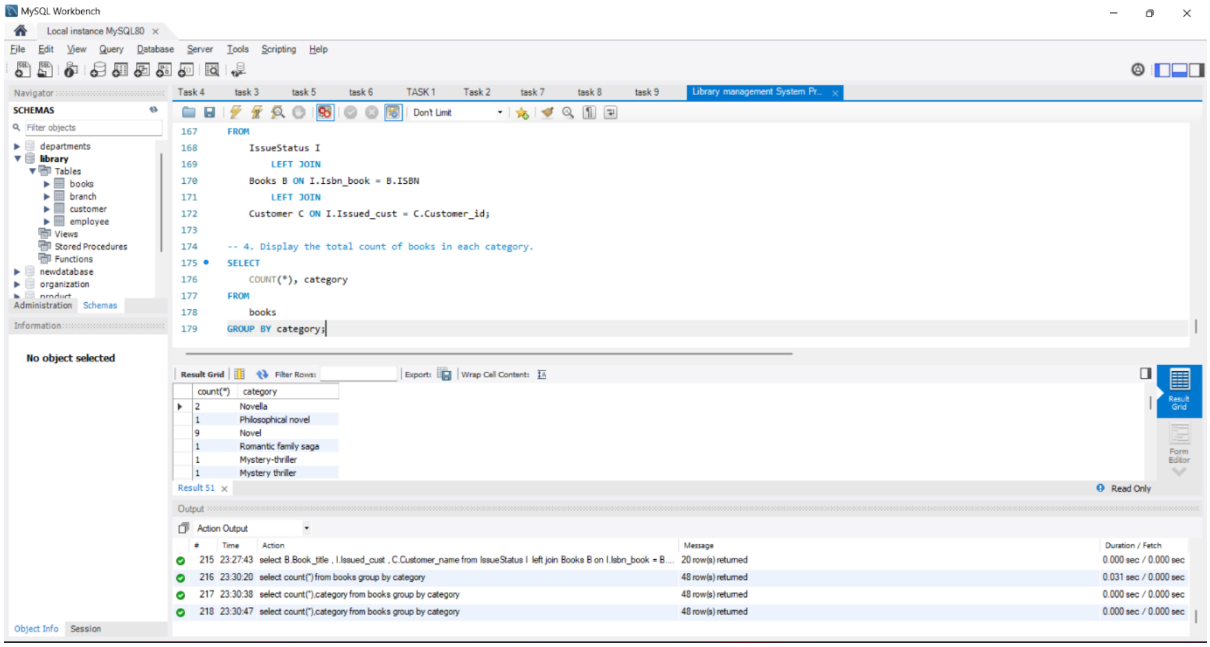
-- 3. Retrieve the book titles and the corresponding customers who have issued those books.

```
SELECT
    B.Book_title, I.Issued_cust, C.Customer_name
FROM
    IssueStatus I
        LEFT JOIN
    Books B ON I.Isbn_book = B.ISBN
        LEFT JOIN
    Customer C ON I.Issued_cust = C.Customer_id;
```



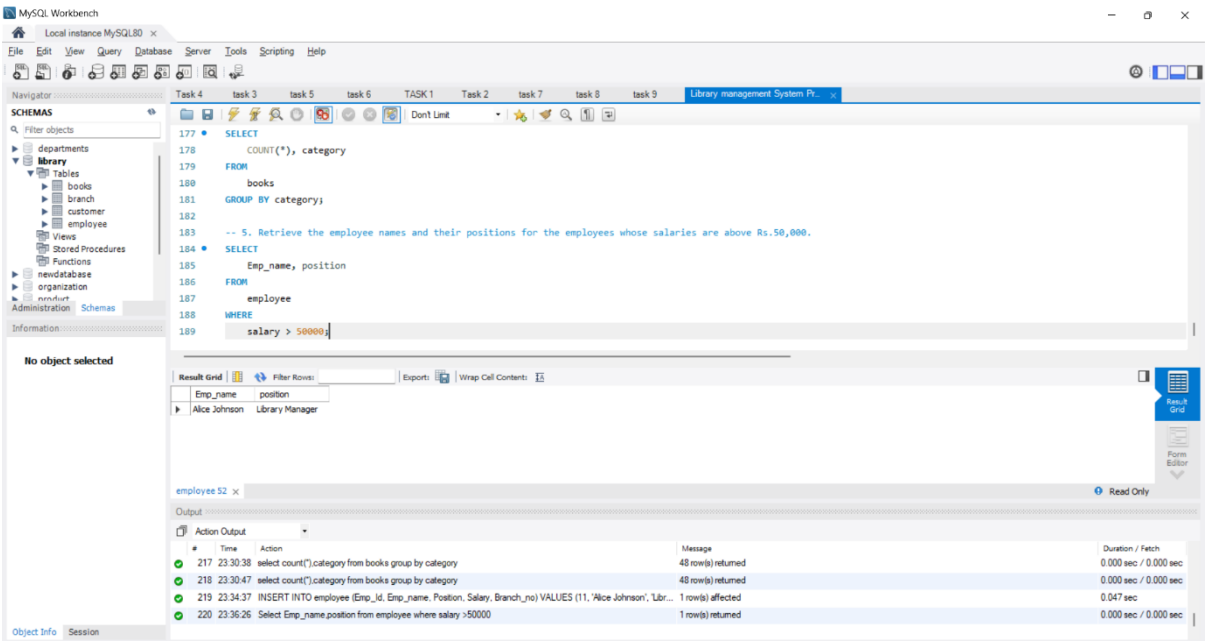
-- 4. Display the total count of books in each category.

```
SELECT
    COUNT(*), category
FROM
    books
GROUP BY category;
```



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

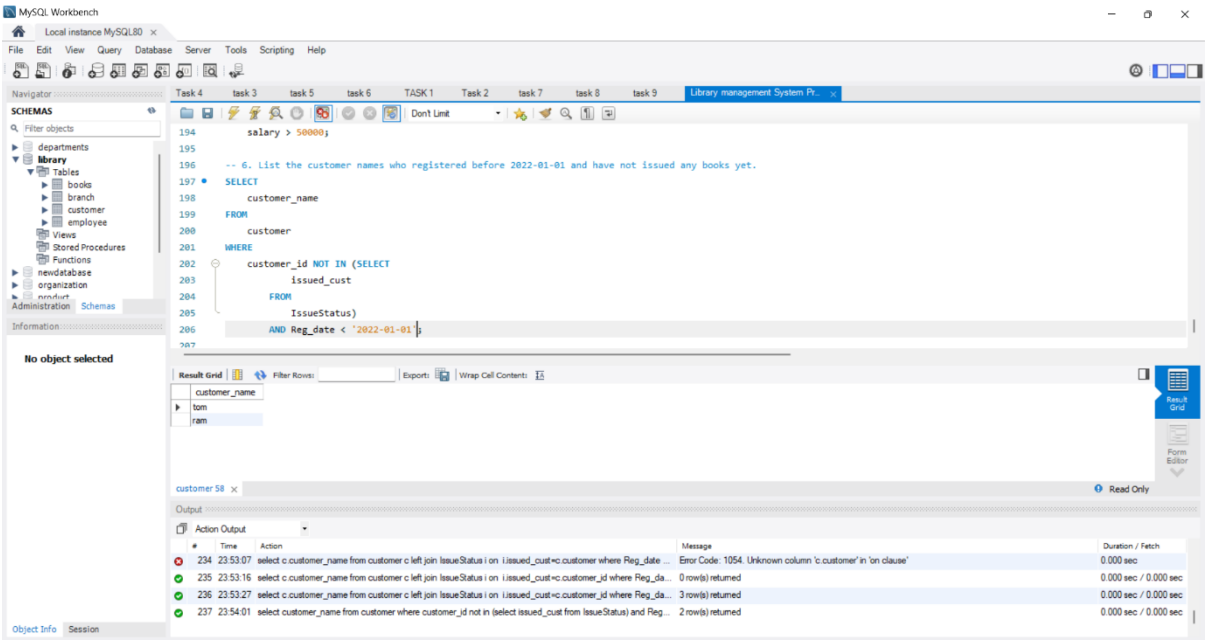
```
SELECT
    Emp_name, position
FROM
    employee
WHERE
    salary > 50000;
```

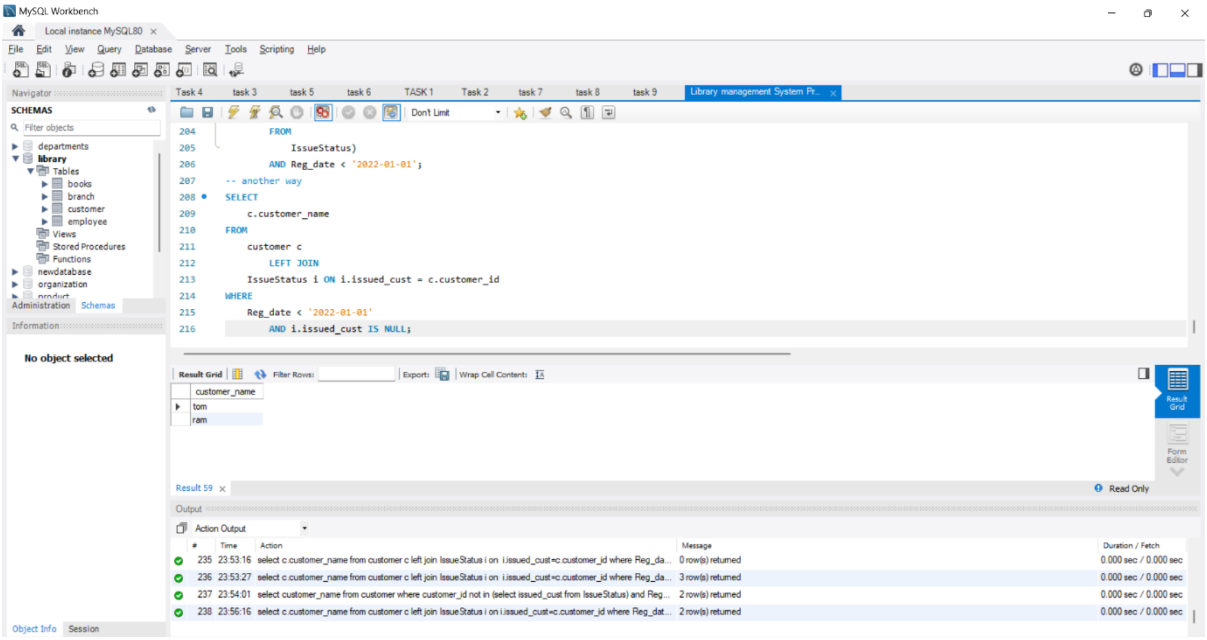



```
-- 6. List the customer names who registered before 2022-01-01 and have not issued any books yet.
SELECT
    customer_name
FROM
    customer
WHERE
    customer_id NOT IN (SELECT
            issued_cust
        FROM
            IssueStatus)
        AND Reg_date < '2022-01-01';
-- another way
SELECT
    c.customer_name
FROM
    customer c
        LEFT JOIN
    IssueStatus i ON i.issued_cust = c.customer_id
WHERE
```

Reg_date < '2022-01-01'

AND i.issued_cust IS NULL;





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

SELECT

b.Branch_no, COUNT(e.Emp_Id)

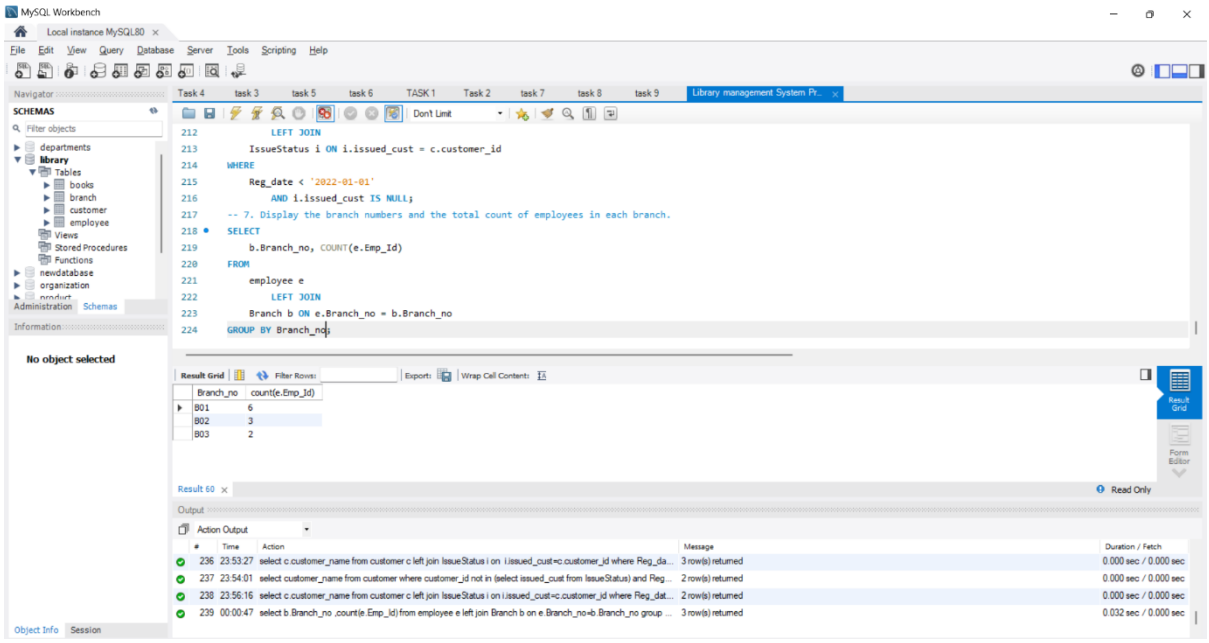
FROM

employee e

LEFT JOIN

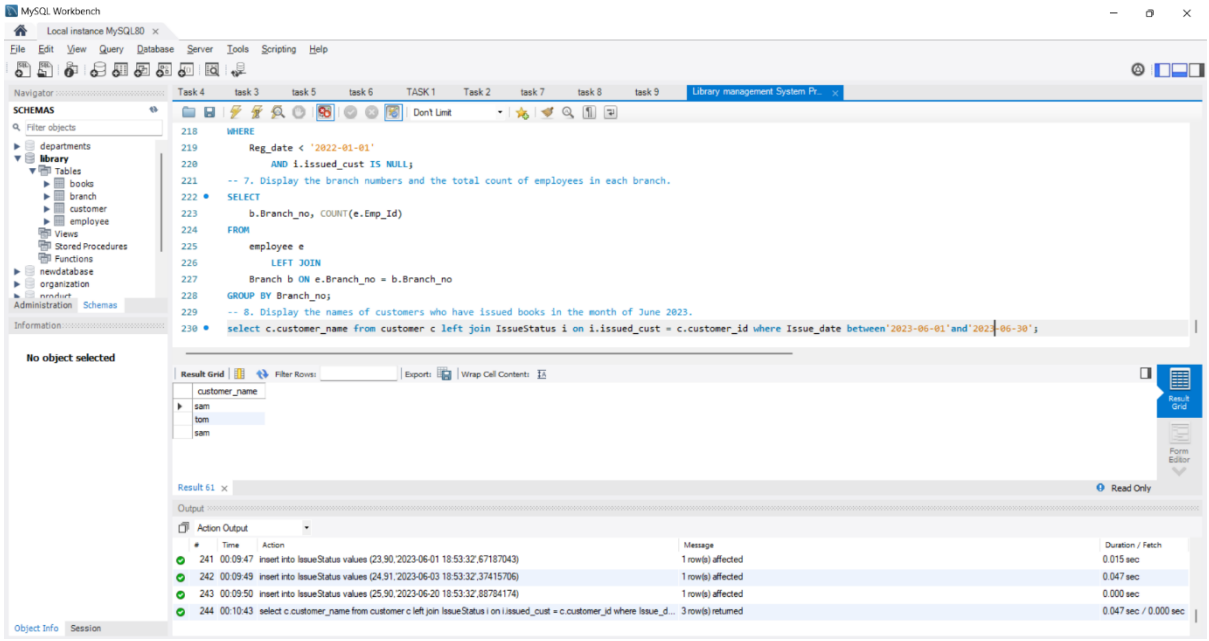
Branch b ON e.Branch_no = b.Branch_no

GROUP BY Branch_no;



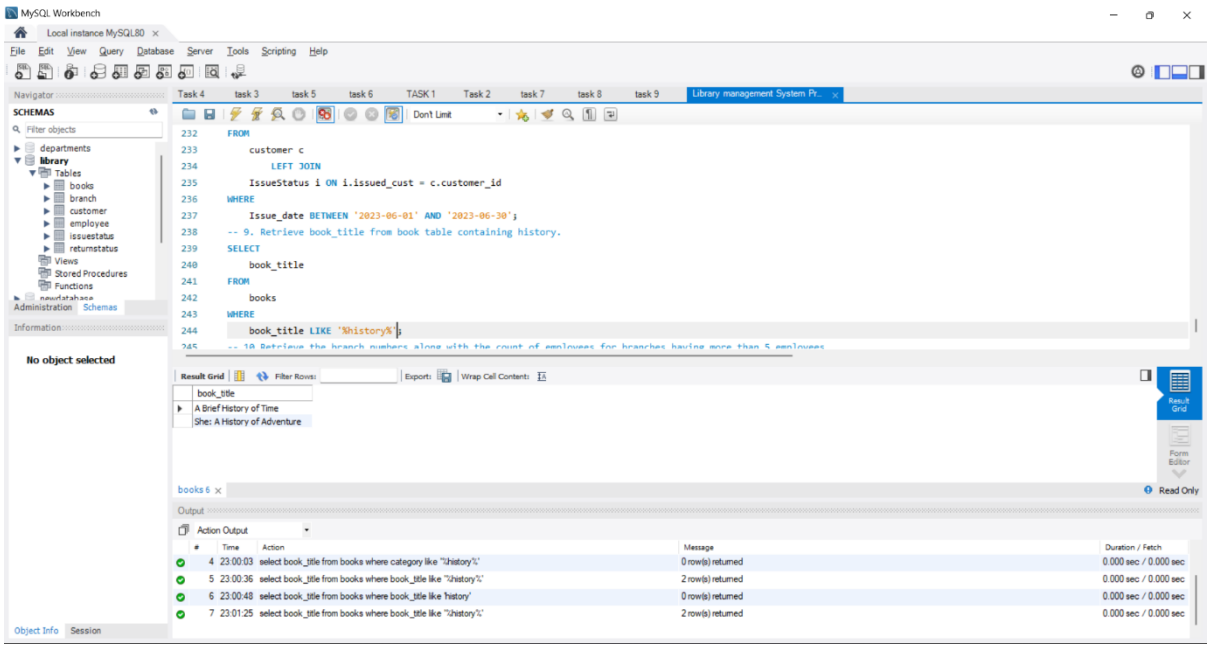
-- 8. Display the names of customers who have issued books in the month of June 2023.

```
SELECT
    c.customer_name
FROM
    customer c
        LEFT JOIN
    IssueStatus i ON i.issued_cust = c.customer_id
WHERE
    Issue_date BETWEEN '2023-06-01' AND '2023-06-30';
```



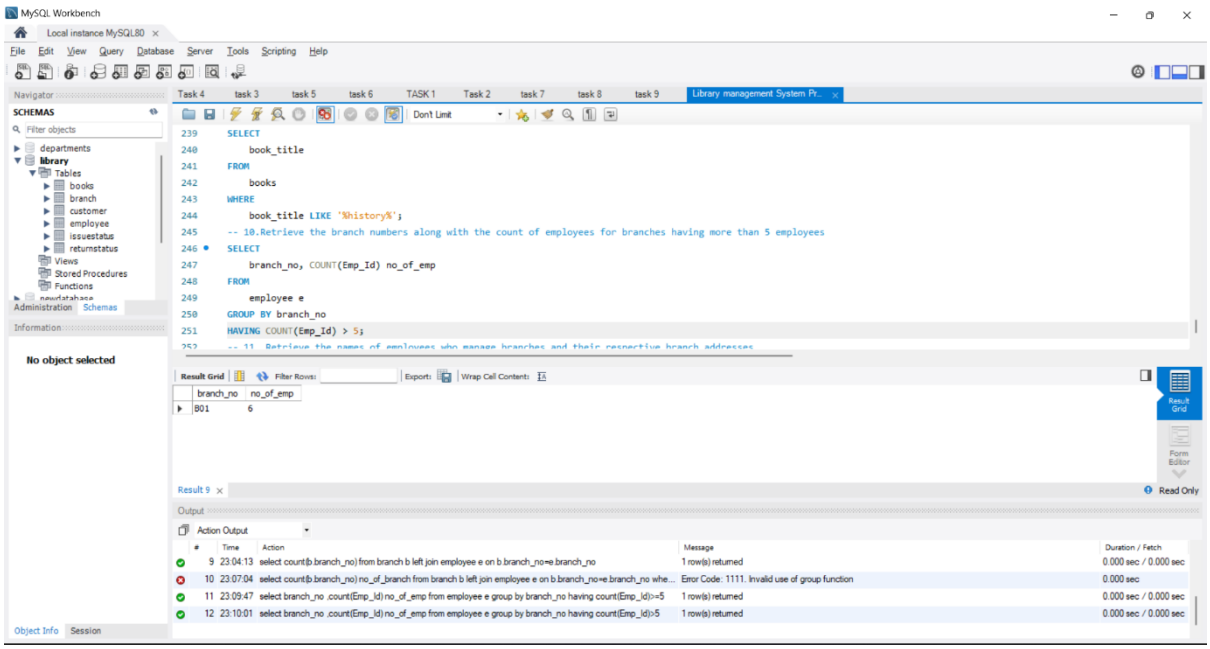
-- 9. Retrieve book_title from book table containing history.

```
SELECT
    book_title
FROM
    books
WHERE
    book_title LIKE '%history%';
```



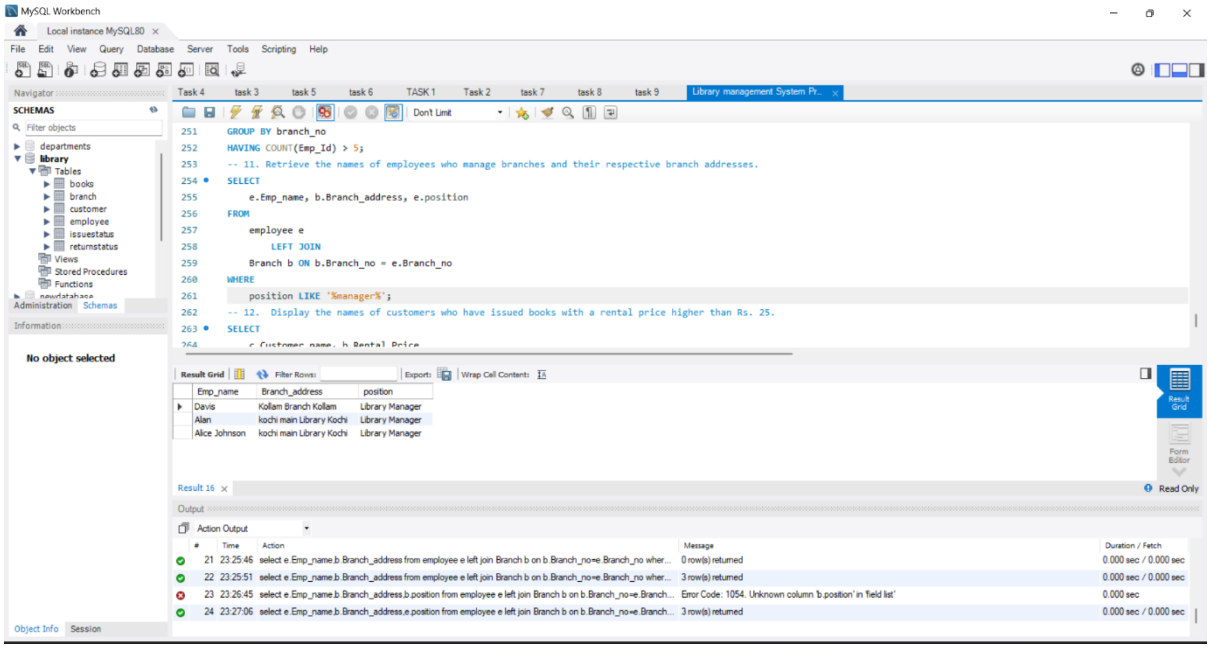
-- 10.Retrieve the branch numbers along with the count of employees for branches having more than 5 employees

```
SELECT
    branch_no, COUNT(Emp_Id) no_of_emp
FROM
    employee e
GROUP BY branch_no
HAVING COUNT(Emp_Id) > 5;
```

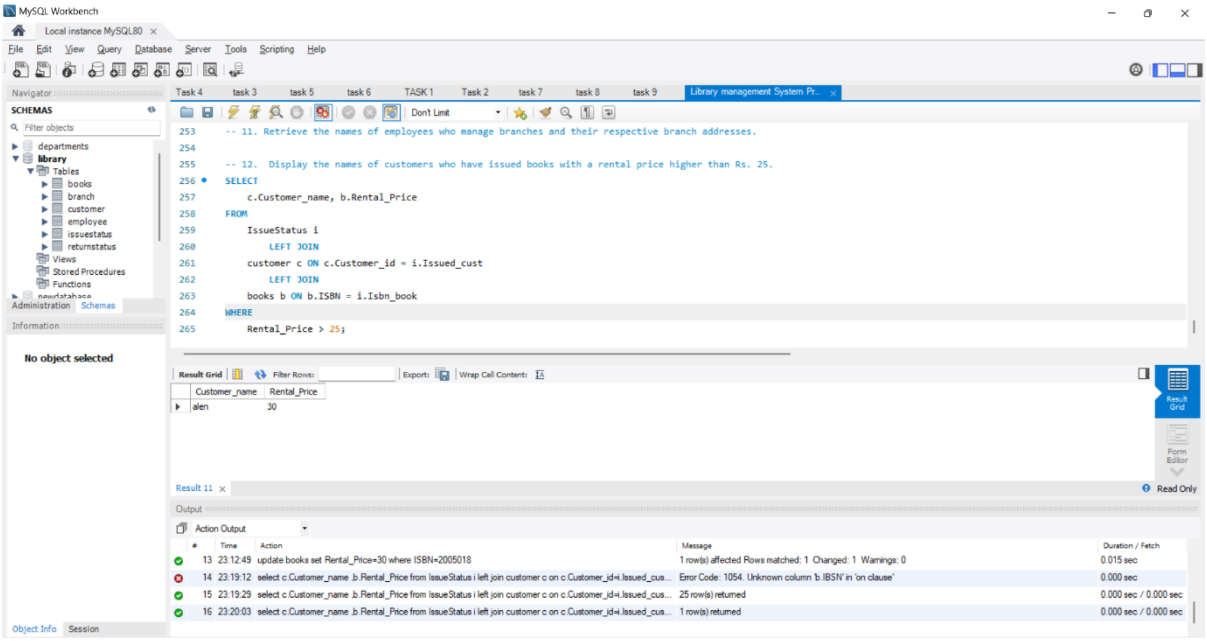


-- 11. Retrieve the names of employees who manage branches and their respective branch addresses.

```
SELECT
    e.Emp_name, b.Branch_address, e.position
FROM
    employee e
      LEFT JOIN
    Branch b ON b.Branch_no = e.Branch_no
WHERE
    position LIKE '%manager%';
```




```
-- 12.  Display the names of customers who have issued books with a rental price higher than Rs. 25.
SELECT
    c.Customer_name, b.Rental_Price
FROM
    IssueStatus i
        LEFT JOIN
    customer c ON c.Customer_id = i.Issued_cust
        LEFT JOIN
    books b ON b.ISBN = i.Isbn_book
WHERE
    Rental_Price > 25;
```


MySQL Workbench
Local instance MySQL80
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
departments
library
Tables
books
branch
customer
employee
issuestatus
returnstatus
Views
Stored Procedures
Functions
Administration Schemas
Information
No object selected
Object Info Session
Task 4 task 3 task 5 task 6 TASK 1 Task 2 task 7 task 8 task 9 Library management System Pr...
Don't Limit
253 -- 11. Retrieve the names of employees who manage branches and their respective branch addresses.
254
255 -- 12. Display the names of customers who have issued books with a rental price higher than Rs. 25.
256 SELECT
257 c.Customer_name, b.Rental_Price
258 FROM
259 IssueStatus i
260 LEFT JOIN
261 customer c ON c.Customer_id = i.Issued_cust
262 LEFT JOIN
263 books b ON b.ISBN = i.Isbn_book
264 WHERE
265 Rental_Price > 25;
Result Grid Filter Rows: Export: Wrap Cell Content:
Customer_name Rental_Price
alen 30
Result Grid
Form Editor
Read Only
Result 11
Output
Action Output
Time Action Message Duration / Fetch
13 23:12:49 update books set Rental_Price=30 where ISBN=2005018 1 row(s) affected Rows matched: 1 Changed: 1 Warnings: 0 0.015 sec
14 23:19:12 select c.Customer_name ,b.Rental_Price from IssueStatus i left join customer c on c.Customer_id=i.Issued_cus... Error Code: 1054. Unknown column 'b.IBSN' in 'on clause' 0.000 sec
15 23:19:29 select c.Customer_name ,b.Rental_Price from IssueStatus i left join customer c on c.Customer_id=i.Issued_cus... 25 row(s) returned 0.000 sec / 0.000 sec
16 23:20:03 select c.Customer_name ,b.Rental_Price from IssueStatus i left join customer c on c.Customer_id=i.Issued_cus... 1 row(s) returned 0.000 sec / 0.000 sec