Mysql Comprehensive Assessment

Topic: Library Management System

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 following TABLES in the database:

```
1 • CREATE DATABASE library;
```

```
2 • USE library;
```

- 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

```
4 ● ○ CREATE TABLE Branch (
5 Branch_no INT PRIMARY KEY,
6 Manger_id INT,
7 Branch_address VARCHAR(255),
8 Contact_no VARCHAR(20)
9 );
```

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

```
11 • CREATE TABLE Employee (

Emp_id INT PRIMARY KEY,

Emp_name VARCHAR(50),

Position VARCHAR(20),

Salary DECIMAL(10, 2),

Branch_no INT,

FOREIGN KEY (Branch_no) REFERENCES Branch(Branch_no)

18
```

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

```
20 • ○ CREATE TABLE Books (

ISBN INT PRIMARY KEY,

Book_title VARCHAR(100),

Category VARCHAR(50),

Rental_Price DECIMAL(10, 2),

Status VARCHAR(10),

Author VARCHAR(100),

Publisher VARCHAR(100)

);
```

4. Customer

- Customer Id Set as PRIMARY KEY
- Customer name
- Customer_address
- Reg_date

```
30 • CREATE TABLE Customer (
31 Customer_id INT PRIMARY KEY,
32 Customer_name VARCHAR(100),
33 Customer_address VARCHAR(200),
34 Reg_date DATE
35 );
```

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

```
37 ● ○ CREATE TABLE IssueStatus (
          Issue_Id INT PRIMARY KEY,
38
39
          Issued_cust INT,
          Issued_book_name VARCHAR(100),
40
          Issue_date DATE,
41
          Isbn_book INT,
42
          FOREIGN KEY (Issued_cust) REFERENCES Customer(Customer_id),
43
          FOREIGN KEY (Isbn_book) REFERENCES Books(ISBN)
44
     );
45
```

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

Insert values into tables:

Branch

```
59 •
         INSERT INTO branch (Branch_no, Manger_id, Branch_address, Contact_no)
         VALUES
 60
         (1, 101, '123 Main Street, City A', 9496957511),
 61
         (2, 102, '456 Oak Avenue, City B', 9876543210),
 62
         (3, 103, '789 Pine Lane, City C', 9497947511),
 63
         (4, 104, '101 Maple Drive, City A', 9896941175),
 64
 65
         (5, 105, '567 Oak Avenue, City B', 9847511475);
 66
         SELECT * FROM Branch;
 67 •
 68
 69
                                         | Edit: 🚄 🖶 🖶 | Export/Import: 🏣 👸 | Wrap Cell Content: 🖽
Branch_no Manger_id Branch_address
                                           Contact_no
   1
             101
                       123 Main Street, City A
                                          9496957511
   2
             102
                       456 Oak Avenue, City B 9876543210
   3
                       789 Pine Lane, City C
                                          9497947511
   4
             104
                       101 Maple Drive, City A 9896941175
                       567 Oak Avenue, City B 9847511475
  NULL
            NULL
```

Employee

```
69 •
         INSERT INTO Employee (Emp_id, Emp_name, Position, Salary, Branch_no)
 70
         VALUES
 71
         (201, 'John Doe', 'Librarian', 50000, 1),
 72
         (202, 'Jane Smith', 'Assistant Librarian', 40000, 2),
         (203, 'Michael Johnson', 'Bookkeeper', 35000, 3),
 73
 74
         (204, 'Emily Davis', 'Librarian', 50000, 1),
 75
         (205, 'David Lee', 'Assistant Librarian', 40000, 3),
         (206, 'Sarah Brown', 'Librarian', 55000, 2),
 76
         (207, 'Thomas Miller', 'Assistant Librarian', 45000, 4),
 77
         (208, 'Olivia Taylor', 'Bookkeeper', 38000, 5),
 78
         (209, 'Ethan Johnson', 'Librarian', 52000, 5),
 79
 80
         (210, 'Ava Lee', 'Assistant Librarian', 43000, 1);
 81
         SELECT * FROM Employee;
 82 •
 83
                                           | Edit: 🚄 🖶 | Export/Import: 📳 👸 | Wrap Cell Content: 🏗
Emp_id
                                                   Branch_no
          Emp_name
                         Position
                                         Salary
  201
          John Doe
                         Librarian
                                         50000.00
  202
                         Assistant Librarian 40000.00
                                                  2
          Jane Smith
          Michael Johnson
  203
                         Bookkeeper
                                         35000.00
                                                   3
  204
          Emily Davis
                         Librarian
                                         50000.00 1
  205
          David Lee
                         Assistant Librarian
                                        40000.00
  206
          Sarah Brown
                        Librarian
                                         55000.00 2
          Thomas Miller
  207
                         Assistant Librarian
                                         45000.00
                         Bookkeeper
  208
          Olivia Taylor
                                         38000.00 5
  209
          Ethan Johnson
                         Librarian
                                         52000.00
                                                   5
  210
                                        43000.00
          Ava Lee
                         Assistant Librarian
                                                  1
  HULL
          NULL
                         NULL
                                         NULL
                                                  NULL
```

Books

```
84 •
         INSERT INTO Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Publisher)
 85
         (97800081, 'To Kill a Mockingbird', 'Fiction', 10, 'Yes', 'Harper Lee', 'HarperCollins'),
 86
         (97801431, '1984', 'Fiction', 10, 'No', 'George Orwell', 'Penguin Books'),
 87
 88
         (97800608, 'Pride and Prejudice', 'Fiction', 8, 'Yes', 'Jame Austen', 'Penguin Classics'),
         (97805900, 'The Lord of the Rings', 'Fantasy', 15, 'No', 'J.R.R. Tolkien', 'HarperCollins'),
         (97803167, "The Hitchhiker's Guide to the Galaxy", 'Science Fiction', 11, 'Yes', ' Douglas Adams', 'Pan Books'),
 90
 91
         (97800074, "The Great Gatsby", 'Fiction', 9, 'Yes', 'F. Scott Fitzgerald', 'Scribner'),
         (97800065, 'The Catcher in the Rye', 'Fiction', 10, 'No', 'J.D. Salinger', 'Little, Brown'),
 92
         (97800072, 'The Harry Potter Series', 'Fantasy', 12, 'Yes', 'J.K. Rowling', 'Bloomsbury'),
 93
         (97800064, 'The Hunger Games', 'Science Fiction', 11, 'No', 'Suzanne Collins', 'Scholastic'),
 95
         (97800070, 'The Chronicles of Narnia', 'Fantasy', 13, 'Yes', 'C.S. Lewis', 'HarperCollins');
 96
97 • SELECT * FROM Books:
Edit: 🔏 📆 📠 Export/Import: 🏣 🦝 Wrap Cell Content: 🟗
  ISBN
             Book title
                                          Category
                                                        Rental Price Status Author
                                                                                            Publisher
  97800064
            The Hunger Games
                                          Science Fiction
                                                        11.00
                                                                    No
                                                                           Suzanne Collins
                                                                                           Scholastic
  97800065
            The Catcher in the Rye
                                          Fiction
                                                        10.00
                                                                    No
                                                                           J.D. Salinger
                                                                                           Little, Brown
  97800070
            The Chronides of Namia
                                          Fantasy
                                                        13.00
                                                                           C.S. Lewis
                                                                                           HarperCollins
                                                                    Yes
            The Harry Potter Series
                                          Fantasy
                                                                                           Bloomsbury
  97800072
                                                        12.00
                                                                    Yes
                                                                           J.K. Rowling
  97800074
            The Great Gatsby
                                          Fiction
                                                        9.00
                                                                    Yes
                                                                           F. Scott Fitzgerald
                                                                                           Scribner
  97800081
            To Kill a Mockingbird
                                                        10.00
                                                                    Yes
                                                                           Harper Lee
                                                                                           HarperCollins
            Pride and Prejudice
  97800608
                                          Fiction
                                                        8.00
                                                                           Jane Austen
                                                                                           Penguin Classics
                                                                    Yes
  97801431 1984
                                          Fiction
                                                        10.00
                                                                   No
                                                                           George Orwell
                                                                                           Penguin Books
  97803167 The Hitchhiker's Guide to the Galaxy Science Fiction 11.00
                                                                           Douglas Adams
                                                                                           Pan Books
                                                                    Yes
```

Customer

```
INSERT INTO Customer (Customer id, Customer name, Customer address, Reg date)
         VALUES
100
         (301, 'Alice Johnson', '789 Pine Lane, City A', '2023-01-01'),
101
         (302, 'Bob Brown', '101 Maple Drive, City B', '2023-02-15'),
102
103
         (303, 'Charlie Green', '567 Oak Avenue, City C', '2023-03-20'),
         (304, 'Danielle Harris', '456 Main Street, City A', '2023-04-10'),
104
         (305, 'Emily Wilson', '123 Main Street, City B', '2023-05-25'),
105
106
         (306, 'Frank Johnson', '789 Pine Lane, City C', '2023-06-15'),
         (307, 'Grace Miller', '101 Maple Drive, City A', '2023-07-20'),
107
         (308, 'Henry Taylor', '567 Oak Avenue, City B', '2023-08-10'),
108
         (309, 'Isabella Lee', '123 Main Street, City C', '2023-09-25'),
109
110
         (310, 'Jacob Wilson', '789 Pine Lane, City A', '2023-10-15');
                                            Edit: 🕍 🖶 Export/Import: 📳 📸 Wrap Cell Content: 🔣
Result Grid
               Filter Rows:
   Customer_id
               Customer_name
                              Customer_address
                                                    Reg date
  301
                                                    2023-01-01
               Alice Johnson
                              789 Pine Lane, City A
  302
               Bob Brown
                              101 Maple Drive, City B 2023-02-15
  303
               Charlie Green
                              567 Oak Avenue, City C 2023-03-20
  304
                              456 Main Street, City A 2023-04-10
               Danielle Harris
  305
               Emily Wilson
                              123 Main Street, City B
                                                   2023-05-25
  306
               Frank Johnson
                              789 Pine Lane, City C
                                                   2023-06-15
  307
               Grace Miller
                              101 Maple Drive, City A
                                                   2023-07-20
                              567 Oak Avenue, City B 2023-08-10
  308
               Henry Taylor
  309
               Isabella Lee
                              123 Main Street, City C
                                                   2023-09-25
                              789 Pine Lane, City A
                                                   2023-10-15
  310
               Jacob Wilson
  NULL
              NULL
                              NULL
                                                   NULL
```

IssueStatus

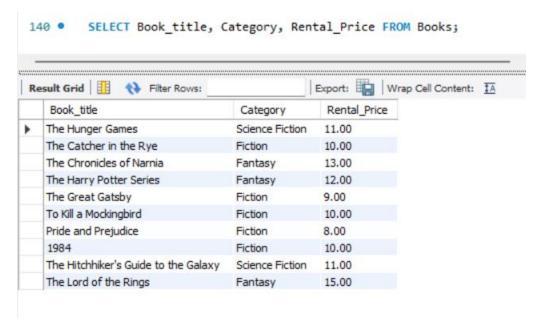
```
INSERT INTO Issuestatus (Issue_Id, Issued_cust, Issued_book_name, Issue_date, Isbn_book)
115
        VALUES
116
      (401, 301, 'To Kill a Mockingbird', '2023-03-10', 97800081),
       (402, 302, '1984', '2023-04-05', 97801431),
117
      (403, 303, 'Pride and Prejudice', '2023-05-15', 97800608),
118
       (404, 301, 'The Lord of the Rings', '2023-06-20', 97805900),
119
120
       (405, 304, "The Hitchhiker's Guide to the Galaxy", '2023-07-10', 97803167),
       (406, 305, 'The Great Gatsby', '2023-08-15', 97800074),
121
       (407, 306, 'The Catcher in the Rye', '2023-09-20', 978000065),
122
       (408, 307, 'The Harry Potter Series', '2023-10-10', 97800072),
123
       (409, 308, 'The Hunger Games', '2023-11-15', 97800064),
124
125
       (410, 309, 'The Chronicles of Narnia', '2023-12-20', 97800070);
126
127 • SELECT * FROM IssueStatus;
```

Issue_Id	Issued_cust	Issued_book_name	Issue_date	Isbn_book		
401	301	To Kill a Mockingbird	2023-03-10	97800081		
402	302	1984	2023-04-05	97801431		
403	303	Pride and Prejudice	2023-05-15	97800608		
404	301	The Lord of the Rings	2023-06-20	97805900		
405	304	The Hitchhiker's Guide to the Galaxy	2023-07-10	97803167		
406	305	The Great Gatsby	2023-08-15	97800074		
407	306	The Catcher in the Rye	2023-09-20	97800065		
408	307	The Harry Potter Series	2023-10-10	97800072		
409	308	The Hunger Games	2023-11-15	97800064		
410	309	The Chronicles of Narnia	2023-12-20	97800070		
NULL	HULL	NULL	HULL	NULL		

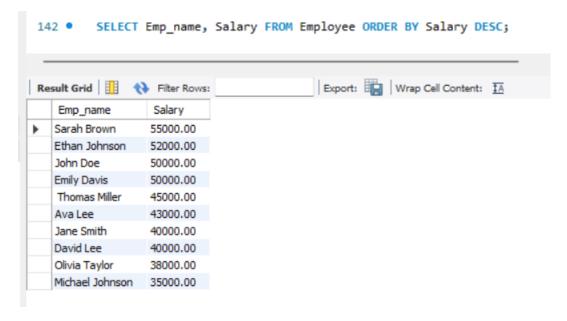
ReturnStatus

```
INSERT INTO Returnstatus (Return_Id, Return_cust, Return_book_name, Return_date, Isbn_book2)
130
         (501, 301, 'To Kill a Mockingbird', '2023-03-25', 97800081),
131
         (502, 302, '1984', '2023-04-20', 97801431),
132
133
         (503, 303, 'Pride and Prejudice', '2023-06-01', 97800608),
         (504, 301, 'The Lord of the Rings', '2023-08-05', 97805900),
134
         (505, 304, "The Hitchhiker's Guide to the Galaxy", '2023-09-10', 97803167);
135
136
        SELECT * FROM Returnstatus;
137 •
138
                                          | Edit: 🚄 📆 🖶 | Export/Import: 🏣 👸 | Wrap Cell Content: 🖽
Return_Id Return_cust Return_book_name
                                                     Return_date Isbn_book2
  501
            301
                        To Kill a Mockingbird
                                                     2023-03-25
                                                                97800081
                                                                97801431
            302
                       1984
                                                     2023-04-20
  502
   503
            303
                        Pride and Prejudice
                                                                97800608
                                                     2023-06-01
   504
            301
                       The Lord of the Rings
                                                     2023-08-05
                                                                97805900
   505
             304
                        The Hitchhiker's Guide to the Galaxy
                                                     2023-09-10
                                                                 97803167
  NULL
            NULL
                                                    NULL
```

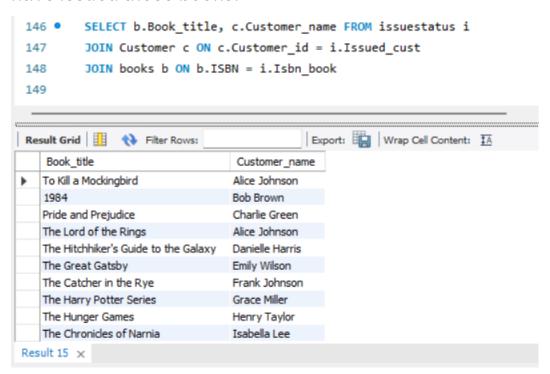
1. Retrieve the book title, category, and rental price of all available books.



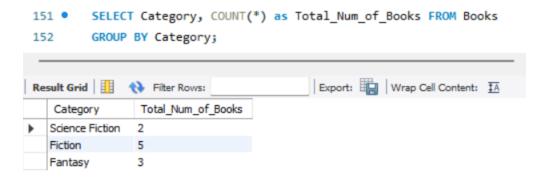
2. List the employee names and their respective salaries in descending order of salary.



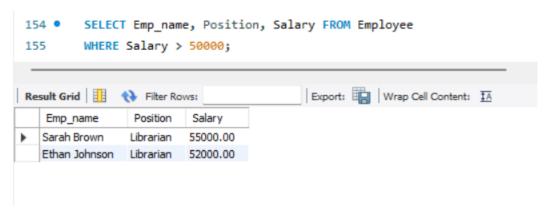
3. Retrieve the book titles and the corresponding customers who have issued those books.



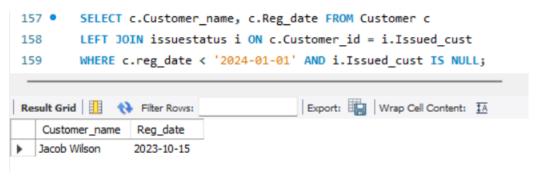
4. Display the total count of books in each category.



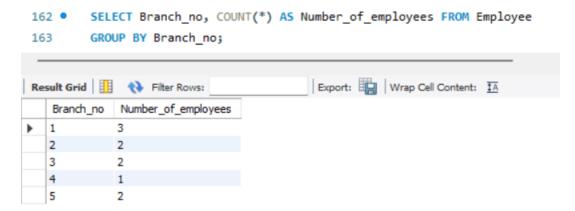
5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.



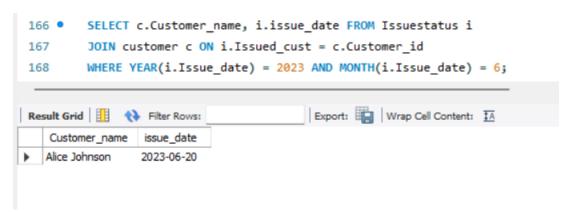
6. List the customer names who registered before 2024-01-01 and have not issued any books yet.



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 2 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. 10.

