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

```
create database library;
  2 •
         use library;
  3
  4 • ⊖ create table Branch(
  5
         Branch_no int PRIMARY KEY,
        Manager_Id int,
  6
  7
         Branch address varchar(20),
         Contact_no varchar(20)
  8
  9
         );
 10
         insert into branch values(01,101,'Kochi','9212345678'),
 11 •
         (02,102, 'Chennai', '8187654321'),
 12
         (03,103, 'Bangalore', '8098765432'),
 13
         (04,104, 'Kolkata', '7387654321'),
 14
         (05,105,'New Delhi','8198768137');
 15
 16
 17 •
         select * from branch;
                                          | Edit: 🕍 📆 📙 | Export/Import: 🏢 🎳 | Wrap Cell Content: 🟗
Branch_no
             Manager_Id
                        Branch_address
                                      Contact_no
                        Kochi
             101
                                      9212345678
  2
                        Chennai
             102
                                      8187654321
  3
             103
                        Bangalore
                                      8098765432
  4
             104
                        Kolkata
                                      7387654321
             105
                        New Delhi
                                      8198768137
  NULL
            NULL
                        NULL
                                      NULL
```

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

```
19
  20 • ⊖ create table Employee(
          Emp_Id int PRIMARY KEY,
  21
          Emp name varchar(20),
  22
          Position varchar(20),
  23
  24
          Salary int,
  25
          Branch_no int,
  26
          foreign key (Branch no) references branch(Branch no) on delete cascade
  27
  28
  29 •
          insert into employee values(501, 'Riyas Shahul', 'Manager', 60000, 1),
  30
          (502, 'Alex X', 'Librarian', 45000,2),
          (503, 'Saahil Rizvin', 'Assistant Librarian',40000,1),
  31
          (504, 'Jaseela Jasim', 'Clerk', 35000,5),
  32
          (505, 'Thasleema', 'Manager', 60000, 3),
  33
          (506, 'Suchithra', 'Librarian', 45000,1),
  34
          (507, 'Visal S', 'Assistant Librarian', 40000,2),
  35
 | Edit: 🚄 🖶 | Export/Import: 📳 🌄 | Wrap Cell Content: 🔼
    Emp_Id Emp_name
                                          Salary Branch_no
                          Position
    501
            Riyas Shahul
                                          60000
                          Manager
    502
            Alex X
                         Librarian
                                          45000
                                                2
            Saahil Rizvin
                                          40000
    503
                         Assistant Librarian
                                                 1
                                                5
    504
           Jaseela Jasim
                        Clerk
                                          35000
    505
            Thasleema
                         Manager
                                          60000
                                                 3
    506
           Suchithra
                                          45000
                         Librarian
                                                1
    507
            Visal S
                                          40000
                         Assistant Librarian
                                                 2
           Sharukh Khan
                        Clerk
                                          35000
    508
                                               1
            Vijay Joseph
    509
                         Clerk
                                          60000
                                                1
    510
          Tovino Thomas Librarian
                                          45000
                                                5
    511
            Daniel
                         Clerk
                                          42000
                                                1
                         Manager
    512
            Emily
                                          48000
   NULL
            NULL
                         NULL
                                         NULL
                                                NULL
employee 144 X
Output
```

```
28
          insert into employee values(501, 'Riyas Shahul', 'Manager',60000,1),
 29 •
          (502, 'Alex X', 'Librarian', 45000,2),
 30
          (503, 'Saahil Rizvin', 'Assistant Librarian',40000,1),
 31
          (504, 'Jaseela Jasim', 'Clerk', 35000,5),
 32
 33
          (505, 'Thasleema', 'Manager', 60000,3),
          (506, 'Suchithra', 'Librarian', 45000,1),
 34
          (507, 'Visal S', 'Assistant Librarian', 40000,2),
 35
          (508, 'Sharukh Khan', 'Clerk', 35000, 1),
 36
          (509, 'Vijay Joseph', 'Clerk', 60000,1),
 37
 38
          (510, 'Tovino Thomas', 'Librarian', 45000,5),
          (511, 'Daniel', 'Clerk', 42000, 1),
 39
          (512, 'Emily', 'Manager', 48000, 4);
 40
 41
 42 •
          select * from employee;
 43
 44
                                             | Edit: 🚄 🖶 🖶 | Export/Import: 📳 🌄 | Wrap Cell Content: 🛂
Result Grid Filter Rows:
   Emp_Id
            Emp_name
                           Position
                                            Salary
                                                   Branch_no
   501
            Riyas Shahul
                          Manager
                                           60000
                                                   1
   502
            Alex X
                                           45000
                                                   2
                          Librarian
   503
            Saahil Rizvin
                          Assistant Librarian
                                           40000
                                                   1
            Jaseela Jasim
                                           35000 5
   504
                          Clerk
   505
            Thasleema
                          Manager
                                           60000
                                                   3
   506
            Suchithra
                                           45000
                                                   1
                          Librarian
            Visal S
   507
                          Assistant Librarian
                                                   2
                                           40000
           Sharukh Khan
   508
                          Clerk
                                           35000
                                                   1
   509
            Vijay Joseph
                          Clerk
                                           60000
                                                   1
                          Librarian
                                                   5
   510
           Tovino Thomas
                                           45000
   511
            Daniel
                          Clerk
                                           42000
           Emily
                          Manager
                                                   4
   512
                                           48000
           NULL
                          NULL
                                                   NULL
  NULL
                                           NULL
employee 144 🗶
```

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

```
45 • ⊖ create table Books(
       ISBN varchar(20) PRIMARY KEY,
 47
        Book_title varchar(50),
        Category varchar(50),
 49
        Rental Price int,
       Status varchar(20),
 51
       Author varchar(30),
 52
        Publisher varchar(30)
 53
 55 • insert into books values('978-0-446-31078-6', 'To Kill a Mockingbird', 'Fiction', 120, 'yes', 'Harper Lee', 'HarperCollins'),
       ('978-1-234-56789-0', '1984', 'Fiction', 140, 'yes', 'George Orwell', 'Penguin Books'),
       ('978-0-7432-7356-5', 'The Great Gatsby', 'Classic', 110, 'no', 'F. Scott Fitzgerald', 'Scribner'),
       ('978-0-06-097749-6', 'The God of Small Things', 'Fiction', 130, 'yes', 'Arundhati Roy', 'Random House India'),
       ('978-93-8038-717-3', 'Aarachar', 'Fiction', 150, 'yes', 'K.R. Meera', 'DC Books'),
       ('978-0-7475-3269-6', 'Harry Potter and the Sorcerer\'s Stone', 'Fantasy', 160, 'yes', 'J.K. Rowling', 'Bloomsbury'),
        ('978-0-060838652-0', 'A Peoples History of the United States', 'History', 100, 'yes', 'J.D. Salinger', 'Little, Brown and Company'),
        C'978-81-265-0978-7'. 'Pathummavude Aadu'. 'Fiction'. 130. 'ves'. 'Vaikom Muhammad Racheer'. 'DC Rooks').
| Edit: 🔏 🖶 🖶 | Export/Import: 📳 🐻 | Wrap Cell Content: 🏗
                                              Category Rental_Price Status Author
                   Book_title
978-0-06-097749-6
                  The God of Small Things
                                               Fiction
                                                       130
                                                                         Arundhati Roy
                                                                                              Random House India
  978-0-060838652-0 A Peoples History of the United States History 100 yes J.D. Salinger
                                                                                     Little, Brown and Company
  978-0-09-928223-3 Oru Desathinte Katha
                                                                         S.K. Pottekkatt
  978-0-14-119907-3 Pride and Prejudice Romance 110 no Jane Austen Penguin Classics
  978-0-446-31078-6 To Kill a Mockingbird
                                              Fiction
                                                      120
                                                                         Harper Lee
                                                                                              HarperCollins
  978-0-7432-7356-5 The Great Gatsby Classic 110 no F. Scott Fitzgerald Scribner
  978-0-7475-3269-6 Harry Potter and the Sorcerer's Stone Fantasy 160
                                                                         J.K. Rowling
                                                                                              Bloomsbury
                                 Fiction 140 yes George Orwell
  978-1-234-56789-0 1984
                                                                                              Penguin Books
                                              Fiction 130
Fiction 150
NULL NULL
  978-81-265-0978-7 Pathummayude Aadu
                                                                         Vaikom Muhammad Basheer
                                                                                             DC Books
                                                                        K.R. Meera
  978-93-8038-717-3 Aarachar
                                                                                              DC Books
books 145 🗶
```

4. Customer

Customer_Id - Set as PRIMARY KEY Customer_name Customer_address Reg_date

```
69 • ⊖ create table Customer(
          Customer Id int PRIMARY KEY,
 70
 71
          Customer_name varchar(20),
          Customer_address varchar(30),
 72
  73
          Reg date date
 74
          );
 75
          insert into customer values(1, 'Ayesha', 'Kochi, Kerala', '2022-03-20'),
  76 •
          (2, 'Farhan', 'Coimbatore, Tamil Nadu', '2022-05-08'),
 77
          (3, 'Fathima', 'Kozhikode, Kerala', '2022-05-17'),
 78
          (4, 'Imran', 'Bengaluru, Karnataka', '2021-08-25'),
 79
          (5, 'Zainab', 'Mysuru, Karnataka', '2022-01-05'),
  80
          (6, 'Salman', 'Kollam, Kerala', '2022-10-18'),
 81
          (7, 'Nazia', 'Salem, Tamil Nadu', '2022-05-13'),
 82
 83
          (8, 'Amir', 'Agra, New Delhi', '2021-11-20'),
          (9, 'Irfan', 'Kannur, Kerala', '2023-12-27'),
          (10, 'Rahman', 'Kolkata, West Bengal', '2021-04-19');
 85
          select * from customer;
 86 •
                                              Edit: 🚣 🖶 Export/Import: 📺 🖏 | Wrap Cell Content: 🖽
Result Grid
                Filter Rows:
    Customer Id
                 Customer_name
                                Customer address
                                                     Reg_date
   1
                                Kochi,Kerala
                                                     2022-03-20
                Ayesha
   2
                Farhan
                               Coimbatore, Tamil Nadu
                                                    2022-05-08
   3
                Fathima
                               Kozhikode, Kerala
                                                     2022-05-17
   4
                Imran
                               Bengaluru,Karnataka
                                                    2021-08-25
   5
                Zainab
                               Mysuru,Karnataka
                                                    2022-01-05
                Salman
                                                    2022-10-18
                               Kollam,Kerala
                               Salem, Tamil Nadu
                                                     2022-05-13
                Nazia
   8
                Amir
                               Agra, New Delhi
                                                     2021-11-20
                Irfan
                                Kannur, Kerala
                                                     2023-12-27
   10
                Rahman
                               Kolkata, West Bengal
                                                    2021-04-19
  NULL
customer 146 ×
```

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

```
89
 90 • ⊖ create table IssueStatus(
         Issue_Id int PRIMARY KEY ,
 91
         issued cust int,
 92
         foreign key (issued_cust) references customer(customer_id) on delete cascade,
 93
         issued_book_name varchar (50),
 94
         Issue date date,
         isbn_book varchar(30),
 96
         foreign key (isbn_book) references books(isbn) on delete cascade
 97
 98
 99
         insert into IssueStatus values(11,1,'To Kill a Mockingbird','2010-01-20','978-0-446-31078-6'),
100 •
         (22,2,'1984','2002-04-02','978-1-234-56789-0'),
101
         (33,3,'The Great Gatsby', '2009-03-10','978-0-7432-7356-5'),
102
         (44, 4, 'The God of Small Things', '2004-04-18', '978-0-06-097749-6'),
103
         (55, 5, 'Aarachar', '2002-05-05', '978-93-8038-717-3'),
104
         (66, 6, 'Harry Potter and the Sorcerer\'s Stone', '2004-05-12', '978-0-7475-3269-6'),
105
106
         (77, 7, 'A Peoples History of the United States', '2006-05-20', '978-0-060838652-0'),
         /88. 8.'Pathummavude Aadu'.'2007-06-02'.'978-81-265-0978-7'\.
107
Edit: 🚄 🖶 Export/Import: 📳 📸 Wrap Cell Content: 🖽
   Issue_Id issued_cust issued_book_name
                                                      Issue_date | isbn_book
            1
                       To Kill a Mockingbird
                                                      2010-01-20 978-0-446-31078-6
   22
           2
                      1984
                                                     2002-04-02 978-1-234-56789-0
   33
                       The Great Gatsby
                                                     2009-03-10 978-0-7432-7356-5
            3
   44
                      The God of Small Things
                                                     2004-04-18 978-0-06-097749-6
   55
                       Aarachar
                                                      2002-05-05 978-93-8038-717-3
                       Harry Potter and the Sorcerer's Stone 2004-05-12 978-0-7475-3269-6
   66
            6
                       A Peoples History of the United States 2006-05-20 978-0-060838652-0
   77
   88
                                                     2007-06-02 978-81-265-0978-7
                       Pathummayude Aadu
   99
                       Pride and Prejudice
                                                     2023-06-15 978-0-14-119907-3
   100
            2
                       Oru Desathinte Katha
                                                     2010-06-28 978-0-09-928223-3
           NULL
NULL
                      NULL
                                                                NULL
IssueStatus 147 🗴
```

```
95
         Issue date date,
         isbn_book varchar(30),
 96
 97
         foreign key (isbn book) references books(isbn) on delete cascade
 98
 99
         insert into IssueStatus values(11,1,'To Kill a Mockingbird','2010-01-20','978-0-446-31078-6'),
100 •
         (22,2,'1984','2002-04-02','978-1-234-56789-0'),
101
         (33,3,'The Great Gatsby', '2009-03-10','978-0-7432-7356-5'),
102
103
         (44, 4, 'The God of Small Things', '2004-04-18', '978-0-06-097749-6'),
104
         (55, 5, 'Aarachar', '2002-05-05', '978-93-8038-717-3'),
         (66, 6, 'Harry Potter and the Sorcerer\'s Stone', '2004-05-12', '978-0-7475-3269-6'),
105
         (77, 7, 'A Peoples History of the United States', '2006-05-20', '978-0-060838652-0'),
106
         (88, 8, 'Pathummayude Aadu', '2007-06-02', '978-81-265-0978-7'),
107
         (99, 9, 'Pride and Prejudice', '2023-06-15', '978-0-14-119907-3'),
108
         (100, 2, 'Oru Desathinte Katha', '2010-06-28', '978-0-09-928223-3');
109
110
         select * from IssueStatus;
111 •
112
113
| Edit: 🚄 🖶 | Export/Import: 📳 🐻 | Wrap Cell Content: 🖽
   Issue_Id issued_cust issued_book_name
                                                      Issue_date
                                                                 isbn_book
                       To Kill a Mockingbird
   11
                                                      2010-01-20
                                                                 978-0-446-31078-6
   22
            2
                       1984
                                                      2002-04-02 978-1-234-56789-0
                       The Great Gatsby
                                                      2009-03-10 978-0-7432-7356-5
   33
   44
                      The God of Small Things
                                                     2004-04-18 978-0-06-097749-6
   55
                                                      2002-05-05 978-93-8038-717-3
   66
                      Harry Potter and the Sorcerer's Stone 2004-05-12 978-0-7475-3269-6
           6
   77
                       A Peoples History of the United States 2006-05-20 978-0-060838652-0
   88
            8
                       Pathummayude Aadu
                                                      2007-06-02 978-81-265-0978-7
                       Pride and Prejudice
                                                      2023-06-15 978-0-14-119907-3
   99
            9
                       Oru Desathinte Katha
   100
            2
                                                      2010-06-28 978-0-09-928223-3
NULL
           NULL
IssueStatus 147 🗙
```

6. ReturnStatus

Return_Id - Set as PRIMARY KEY

Return cust

Return_book_name

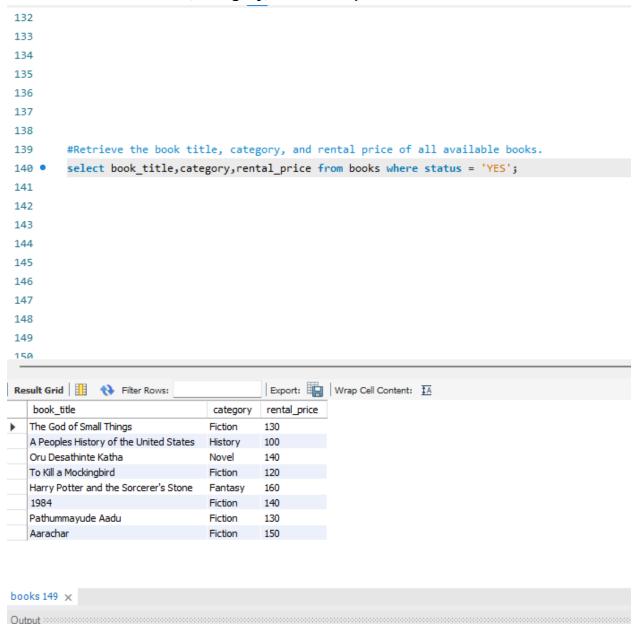
Return_date

Isbn_book2 - Set as FOREIGN KEY and it should refer isbn in BOOKS table

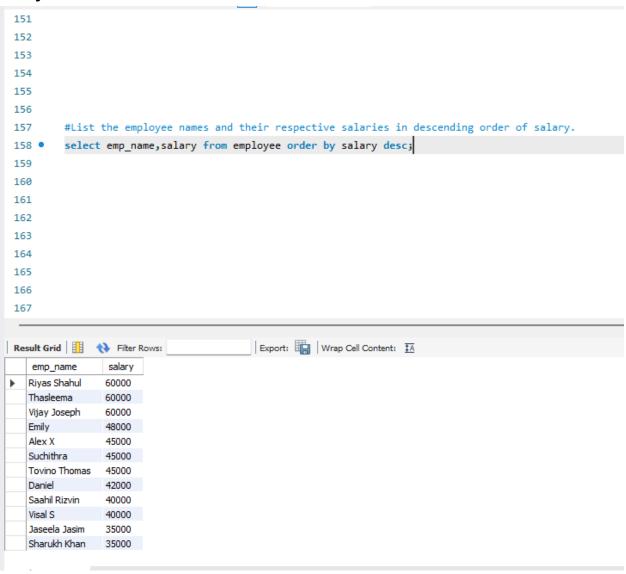
```
113
114
115 • ⊝ create table ReturnStatus(
         Return_Id int PRIMARY KEY ,
116
117
         Return_cust varchar(30),
118
         Return_book_name varchar(50),
         Return_date date,
119
120
         isbn_book2 varchar(20),
         foreign key (isbn_book2) references books(isbn) on delete cascade
121
122
123
124 •
         insert into ReturnStatus values(1001, 'Ayesha','To Kill a Mockingbird','2023-04-02','978-0-446-31078-6'),
125
         (1002, 'Farhan', '1984', '2023-04-05', '978-1-234-56789-0'),
         (1003, 'Fathima','The Great Gatsby','2023-04-10','978-0-7432-7356-5'),
126
         (1004, 'Rahman','Oru Desathinte Katha', '2023-04-15','978-0-09-928223-3');
127
128
         select * from ReturnStatus;
129 •
130
131
                                         | Edit: 🚄 🖶 🖶 | Export/Import: 📳 🐻 | Wrap Cell Content: 🏗
Return_date isbn_book2
   Return_Id Return_cust Return_book_name
                                         2023-04-02 978-0-446-31078-6
1001
                       To Kill a Mockingbird
            Avesha
   1002
            Farhan
                      1984
                                         2023-04-05 978-1-234-56789-0
                       The Great Gatsby
   1003
            Fathima
                                         2023-04-10
                                                    978-0-7432-7356-5
   1004
            Rahman
                       Oru Desathinte Katha 2023-04-15
                                                    978-0-09-928223-3
NULL
            NULL
                       NULL
                                                    NULL
```

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

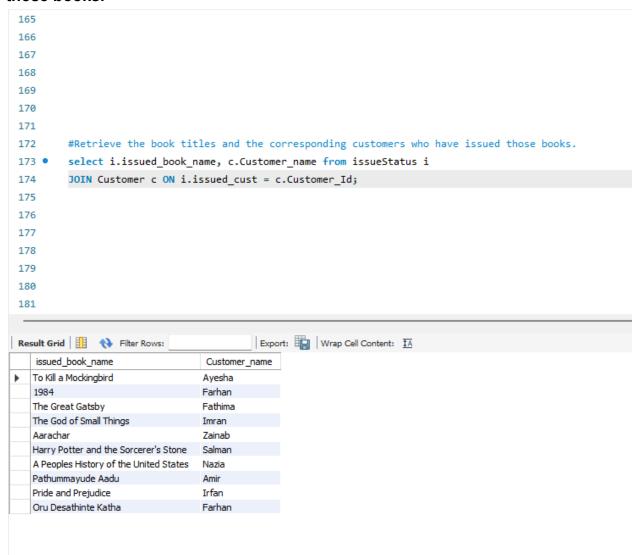
1. Retrieve the book title, category, and rental price of all available books.



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



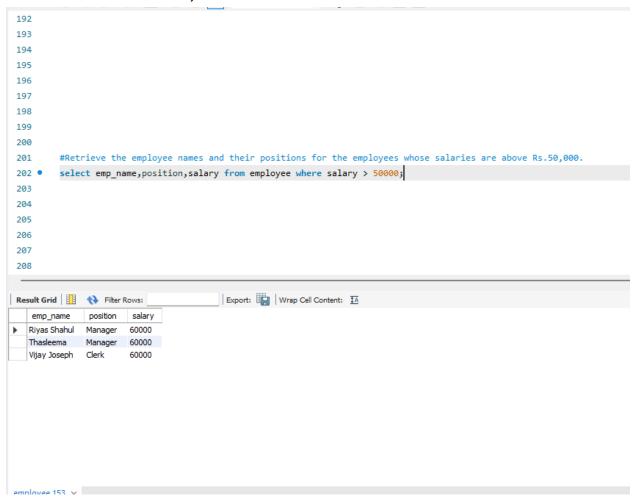
3. Retrieve the book titles and the corresponding customers who have issued those books.



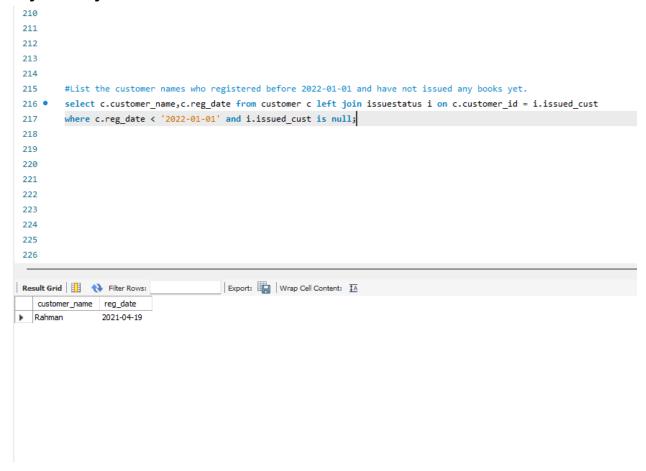
4. Display the total count of books in each category.

```
177
178
179
180
181
182
183
184
185
        #Display the total count of books in each category.
        select category, count(category) as count from books group by category;
186 •
187
188
189
190
191
192
193
Export: Wrap Cell Content: IA
           count
   category
  Fiction
  History
           1
  Novel
  Romance 1
  Classic
           1
  Fantasy 1
```

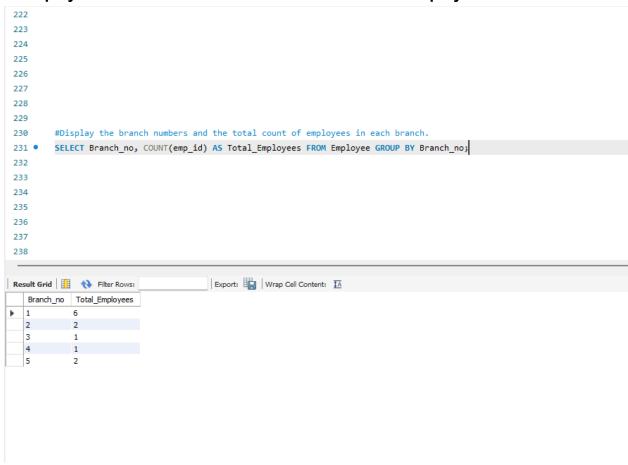
5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.



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 book_title from book table containing history.

```
251
252
253
254
255
256
         #Retrieve book_title from book table containing history.
257
         select book_title from books where category ='history';
258 •
259
260
261
262
263
264
265
266
267
                                       Export: Wrap Cell Content: IA
book_title
▶ A Peoples History of the United States
```

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

