SQL Project -

Topic: Library Management System

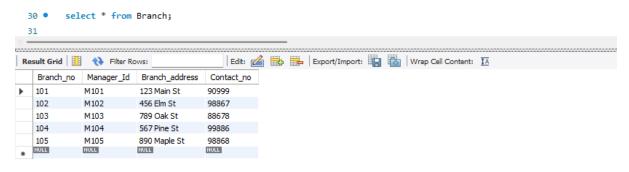
/* You are going to build a project based on Library Management System.

It keeps track of all information about books in the library, their cost, status and total number of books available in the library.

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

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

```
8 •
       create database library;
       use library;
    ⊖ /* Table -1 :Branch ,
          Attributes:
11
12
          Branch no - Set as PRIMARY KEY
13
          Manager Id
14
          Branch address
          Contact no
15
16
17 • ⊖ create table Branch(
                            Branch_no int primary key,
18
                            Manager_Id varchar(5),
19
                            Branch_address varchar(25),
20
                            Contact_no int
21
22
23 •
       insert into Branch values
                                (101, 'M101', '123 Main St', 90999),
24
                                (102, 'M102', '456 Elm St', 98867),
25
                                (103, 'M103', '789 Oak St', 88678),
                                (104, 'M104', '567 Pine St', 99886),
27
                                (105, 'M105', '890 Maple St', 98868);
28
29
```



```
/*Table 2- Employee.
Attributes:
 Emp Id - Set as PRIMARY KEY,
 Emp name,
 Position,
 Salary,
 *Branch no - Set as FOREIGN KEY and it refer Branch no in Branch table
 */
  41 • ⊖ create table Employee(
  42
                            Emp_Id int primary key,
  43
                            Emp_name varchar(25) not null,
  44
                            Position varchar(25) not null,
  45
                            Salary decimal(10,2) not null
  46
  47 •
         insert into Employee values
                        (01, 'John Doe', 'Manager', 60000.00),
  48
                        (02, 'Jane Smith', 'Clerk', 45000.00),
  49
                        (03, 'Mike Johnson', 'Librarian', 55000.00),
  50
                        (04, 'Emily Davis', 'Assistant', 40000.00),
  51
                        (05, 'Sarah Brown', 'Assistant', 42000.00),
  52
  53
                       (06, 'Michelle Ramirez', 'Assistant', 43000.00),
  54
                        (07, 'Michael Thompson', 'Manager', 62000.00),
                        (08, 'Jessica Taylor', 'Clerk', 46000.00),
  55
                        (09, 'Daniel Anderson', 'Librarian', 57000.00),
  56
                        (10, 'Laura Martinez', 'Assistant', 41000.00);
  57
         alter table Employee add column Branch_no int;
  58 •
  59 •
         alter table Employee add foreign key (Branch_no) references Branch(Branch_no);
  60 •
         select * from Employee;
  60 •
          UPDATE employee SET Branch_no = 101 WHERE Emp_Id =1;
  61 •
          UPDATE employee SET Branch no = 101 WHERE Emp Id =2;
          UPDATE employee SET Branch_no = 101 WHERE Emp_Id =3;
  62 •
          UPDATE employee SET Branch_no = 101 WHERE Emp_Id =4;
  63 •
          UPDATE employee SET Branch no = 102 WHERE Emp Id =5;
  64 •
  65 •
          UPDATE employee SET Branch no = 103 WHERE Emp Id =6;
          UPDATE employee SET Branch_no = 102 WHERE Emp_Id =7;
  66 •
  67 •
          UPDATE employee SET Branch_no = 102 WHERE Emp_Id=8;
          UPDATE employee SET Branch no = 102 WHERE Emp Id =9;
  68 •
          UPDATE employee SET Branch_no = 104 WHERE Emp_Id =10;
  69 •
```

```
select * from employee;
213 •
214
| Edit: 🚄 🖶 | Export/Import: 🖫 🐻 | Wrap Cell Content: 🟗
                       Position
                                 Salary
  Emp_Id Emp_name
                                         Branch_no
                        Manager
                                 60000.00 101
         Jane Smith Clerk
                                45000.00 101
          Mike Johnson
                        Librarian
                                55000.00
                                         101
  4
         Emily Davis
                       Assistant 40000.00 101
  5
          Sarah Brown
                        Assistant 42000.00 102
         Michelle Ramirez Assistant 43000.00 103
  6
          Michael Thompson
                       Manager
                                62000.00
                                         102
  8
         Jessica Taylor Clerk
                                 46000.00 102
  9
                                57000.00
         Daniel Anderson
                        Librarian
                                        102
         Laura Martinez
   10
                        Assistant 41000.00 104
NULL
employee 20 ×
```

/*Table 3-Books

```
Attributes :
```

ISBN - Set as PRIMARY KEY,

Book title,

Category ,

Rental Price,

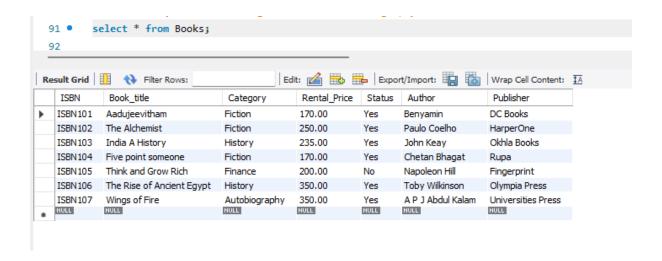
Status [Give yes if book available and no if book not available]

Author .

Publisher

*/

```
73 •
       create table Books
74
                   (
                   ISBN VARCHAR(10) PRIMARY KEY,
75
76
                   Book_title VARCHAR(50),
77
                   Category VARCHAR(30),
78
                   Rental_Price DECIMAL(10,2),
79
                   Status ENUM('Yes','No'),
                   Author VARCHAR(30),
80
                   Publisher VARCHAR(30)
81
82
                   );
83 •
       insert into Books values
                   ('ISBN101', 'Aadujeevitham', 'Fiction', 170, 'Yes', 'Benyamin', 'DC Books'),
84
                   ('ISBN102', 'The Alchemist', 'Fiction', 250, 'Yes', 'Paulo Coelho', 'HarperOne'),
85
                   ('ISBN103', 'India A History', 'History', 235, 'Yes', 'John Keay', 'Okhla Books'),
86
                   ('ISBN104', 'Five point someone', 'Fiction', 170, 'Yes', 'Chetan Bhagat', 'Rupa'),
88
                   ('ISBN105', 'Think and Grow Rich', 'Finance', 200, 'No', 'Napoleon Hill', 'Fingerprint'),
89
                   ('ISBN106', 'The Rise of Ancient Egypt', 'History', 350, 'Yes', 'Toby Wilkinson', 'Olympia Press'),
                   ('ISBN107', 'Wings of Fire', 'Autobiography', 350, 'Yes', 'A P J Abdul Kalam', 'Universities Press');
90
      select * from Books;
91 •
```



/* Table 4- Customer

Attributes : Customer_Id - Set as PRIMARY KEY

Customer name

Customer_address

Reg_date

*/

```
CREATE TABLE Customer
 99 •
100
         Customer Id varchar(10) primary key,
101
         Customer name varchar(30),
102
         Customer_address varchar(30),
103
         Reg date date
104
105
         );
         insert into Customer values
106 •
         ('C101', 'Alice Johnson', '123 Main St', '2021-05-15'),
107
         ('C102', 'Bob Smith', '456 Elm St', '2021-06-20'),
108
         ('C103', 'Carol Davis', '789 Oak St', '2021-07-10'),
109
         ('C104', 'Dave Wilson', '567 Pine St', '2021-08-05'),
110
         ('C105', 'Eve Brown', '890 Maple St', '2021-09-25'),
111
         ('C106', 'Frank Thomas', '234 Cedar St', '2021-10-15'),
112
         ('C107', 'Grace Taylor', '345 Walnut St', '2021-11-20'),
113
         ('C108', 'Henry Anderson', '456 Birch St', '2021-12-10'),
114
         ('C109', 'Ivy Martinez', '567 Oak St', '2022-01-05'),
115
         ('C110', 'Jack Wilson', '678 Pine St', '2022-02-25');
116
         select * from Customer;
117 •
         select * from Customer;
117 •
118
Result Grid
                                             Edit: 🚄 🖶 🖶 Export/Import: 📳
               Filter Rows:
   Customer_Id
                Customer_name
                                Customer_address
                                                 Reg_date
  C101
                Alice Johnson
                               123 Main St
                                                 2021-05-15
   C102
               Bob Smith
                               456 Elm St
                                                 2021-06-20
                                                 2021-07-10
   C103
               Carol Davis
                               789 Oak St
   C104
               Dave Wilson
                               567 Pine St
                                                 2021-08-05
   C105
               Eve Brown
                               890 Maple St
                                                 2021-09-25
                                                 2021-10-15
   C106
               Frank Thomas
                               234 Cedar St
   C107
               Grace Taylor
                               345 Walnut St
                                                 2021-11-20
                                                 2021-12-10
   C108
               Henry Anderson
                               456 Birch St
                                                 2022 2021-12-10
   C109
               Ivy Martinez
                               567 Oak St
                                                2022-02-25
   C110
               Jack Wilson
                               678 Pine St
  NULL
               NULL
                               NULL
                                                NULL
```

/*Table 5 -IssueStatus

Attributes: 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

```
*/
126 •
         CREATE TABLE IssueStatus
     ⊖ (
127
            Issue_Id varchar(10) primary key,
128
129
          Issued cust varchar(30),
130
            Issued_book_name varchar(50),
            Issue date date,
131
            Isbn_book varchar(15),
132
            foreign key (Issued_cust) references Customer(Customer_Id),
133
134
            foreign key (Isbn_book) references Books(ISBN)
135
136 •
        insert into IssueStatus values
            ('I101','C101','Aadujeevitham','2023-05-01','ISBN101'),
137
            ('I102','C102','The Alchemist','2023-06-05','ISBN102'),
138
            ('I103','C103','India A History','023-04-28','ISBN103'),
139
140
            ('I104','C104','Five point someone','2023-02-25','ISBN104'),
            ('I105','C105','Think and Grow Rich','2023-01-30','ISBN105'),
141
            ('I106','C106','The Rise of Ancient Egypt','2023-05-10','ISBN106'),
142
143
            ('I107','C107','Wings of Fire','2023-04-10','ISBN107');
            select * from IssueStatus;
144 •
144 •
              select * from IssueStatus;
145
Edit: 🚄 🖶 🖶 Export/Import: 🟢
   Issue_Id
             Issued_cust
                          Issued_book_name
                                                  Issue_date
                                                              Isbn_book
   I101
             C101
                         Aadujeevitham
                                                 2023-05-01
                                                             ISBN101
   I102
             C102
                         The Alchemist
                                                 2023-06-05
                                                             ISBN 102
   I103
             C103
                         India A History
                                                 0023-04-28
                                                             ISBN 103
   I104
            C104
                         Five point someone
                                                 2023-02-25 ISBN104
                         Think and Grow Rich
   I105
             C105
                                                 2023-01-30
                                                             ISBN 105
   I106
             C106
                         The Rise of Ancient Egypt
                                                 2023-05-10
                                                             ISBN 106
   I107
             C107
                         Wings of Fire
                                                 2023-04-10
                                                             ISBN 107
  NULL
                         NULL
                                                             NULL
```

Attributes: Return Id - Set as PRIMARY KEY

Return cust

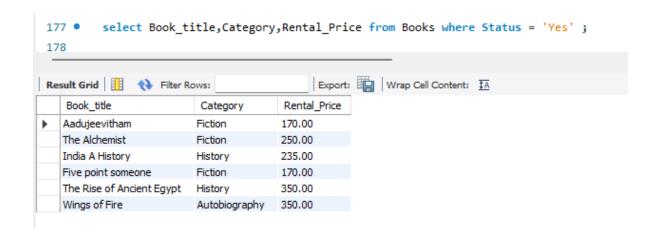
Return book name

Return_date

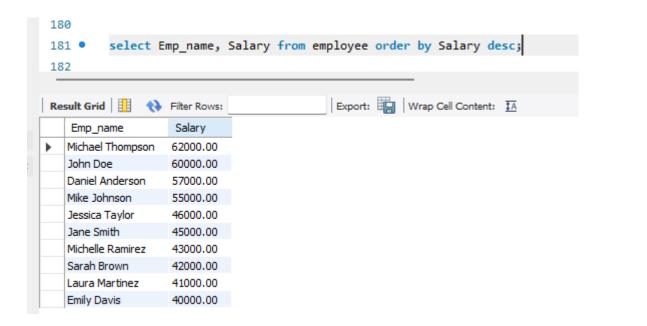
Isbn book2 - Set as FOREIGN KEY and it should refer isbn in BOOKS table

```
153 •
        CREATE TABLE ReturnStatus
154
    ⊖ (
155
        Return_id varchar(10) primary key,
        Return_cust varchar(30),
156
157
        Return_book_name varchar(50),
       Return_date date,
158
159
       ISBN_book2 varchar(25),
       FOREIGN KEY (isbn_book2) REFERENCES Books(ISBN)
160
161
162
163 •
        insert into ReturnStatus values
                   ('R101','C1','Aadujeevitham','2023-05-20','ISBN101'),
164
165
                    ('R102','C2','The Alchemist','2023-07-05','ISBN102'),
                    ('R103','C3','India A History','2023-05-18','ISBN103'),
166
                    ('R104','C4','Five point someone','2023-03-23','ISBN104'),
167
                    ('R105','C5','Think and Grow Rich','2023-03-20','ISBN105'),
168
169
                    ('R106','C6','The Rise of Ancient Egypt','2023-06-10','ISBN106'),
                    ('R107','C7','Wings of Fire','2023-05-05','ISBN107');
170
        select * from ReturnStatus;
171
170
           select * from ReturnStatus;
171 •
172
                                                 Edit: 🚄 🖶 🖶 Export/Import: 📳 🌄
Return_date
                                                                  ISBN_book2
    Return_id
               Return_cust
                            Return_book_name
   R101
               C1
                            Aadujeevitham
                                                    2023-05-20
                                                                  ISBN 101
   R102
              C2
                            The Alchemist
                                                    2023-07-05
                                                                  ISBN 102
   R103
               C3
                            India A History
                                                    2023-05-18
                                                                  ISBN 103
   R104
              C4
                            Five point someone
                                                    2023-03-23
                                                                 ISBN 104
   R105
               C5
                            Think and Grow Rich
                                                    2023-03-20
                                                                  ISBN 105
              C6
                            The Rise of Ancient Egypt
   R106
                                                    2023-06-10
                                                                  ISBN 106
   R107
              C7
                            Winas of Fire
                                                    2023-05-05
                                                                  ISBN 107
              NULL
   NULL
                           NULL
                                                    NULL
                                                                 NULL
```

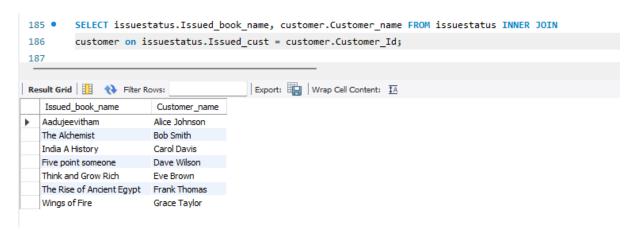
1. Retrieve the book title, category, and rental price of all available books.



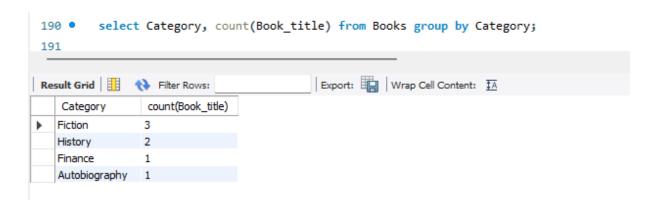
2. List the employee names and their respective salaries in descending order of salary.



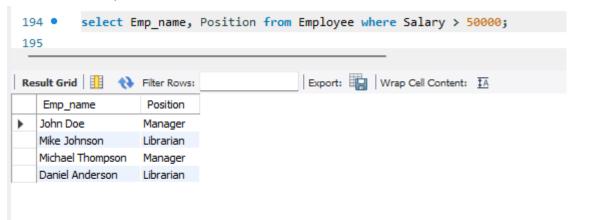
3. Retrieve the book titles and the corresponding customers who have issued those books.



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

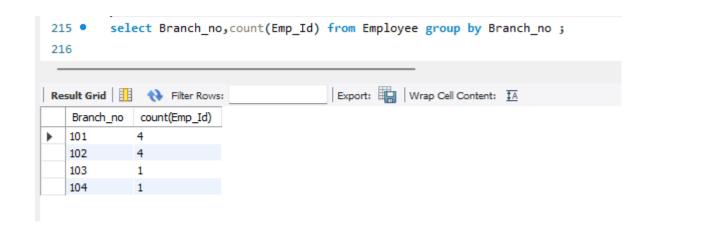


5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.



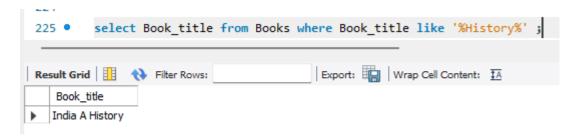
6. List the customer names who registered before 2022-01-01 and have not issued any books yet.

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

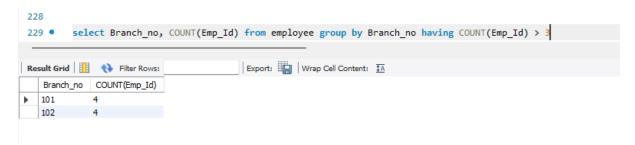


8. Display the names of customers who have issued books in the month of June 2023.

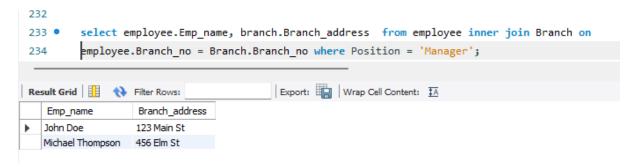
9. Retrieve book_title from book table containing history.



10 .Retrieve the branch numbers along with the count of employees for branches having more than 3 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. 25.

