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

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

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

4. Customer

Customer_Id - Set as PRIMARY KEY

Customer_name

Customer_address

Reg_date

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

6. ReturnStatus

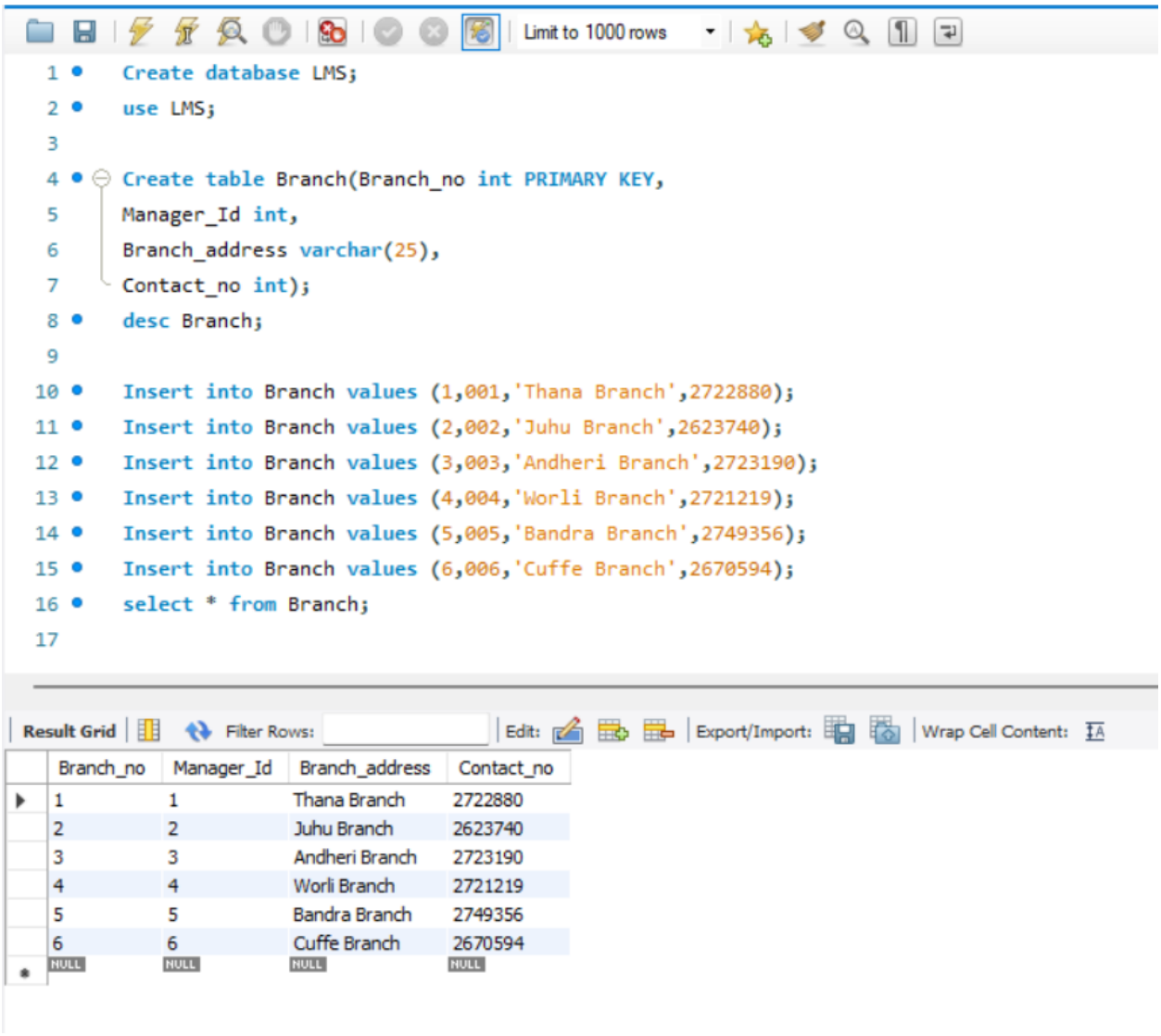
Return_Id - Set as PRIMARY KEY

Return_cust

Return_book_name

Return_date

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



```
Create database LMS;
use LMS;

Create table Branch(Branch_no int PRIMARY KEY,
Manager_Id int,
Branch_address varchar(25),
Contact_no int);
desc Branch;

Insert into Branch values (1,001,'Thana Branch',2722880);
Insert into Branch values (2,002,'Juhu Branch',2623740);
Insert into Branch values (3,003,'Andheri Branch',2723190);
Insert into Branch values (4,004,'Worli Branch',2721219);
Insert into Branch values (5,005,'Bandra Branch',2749356);
Insert into Branch values (6,006,'Cuffe Branch',2670594);
select * from Branch;
```

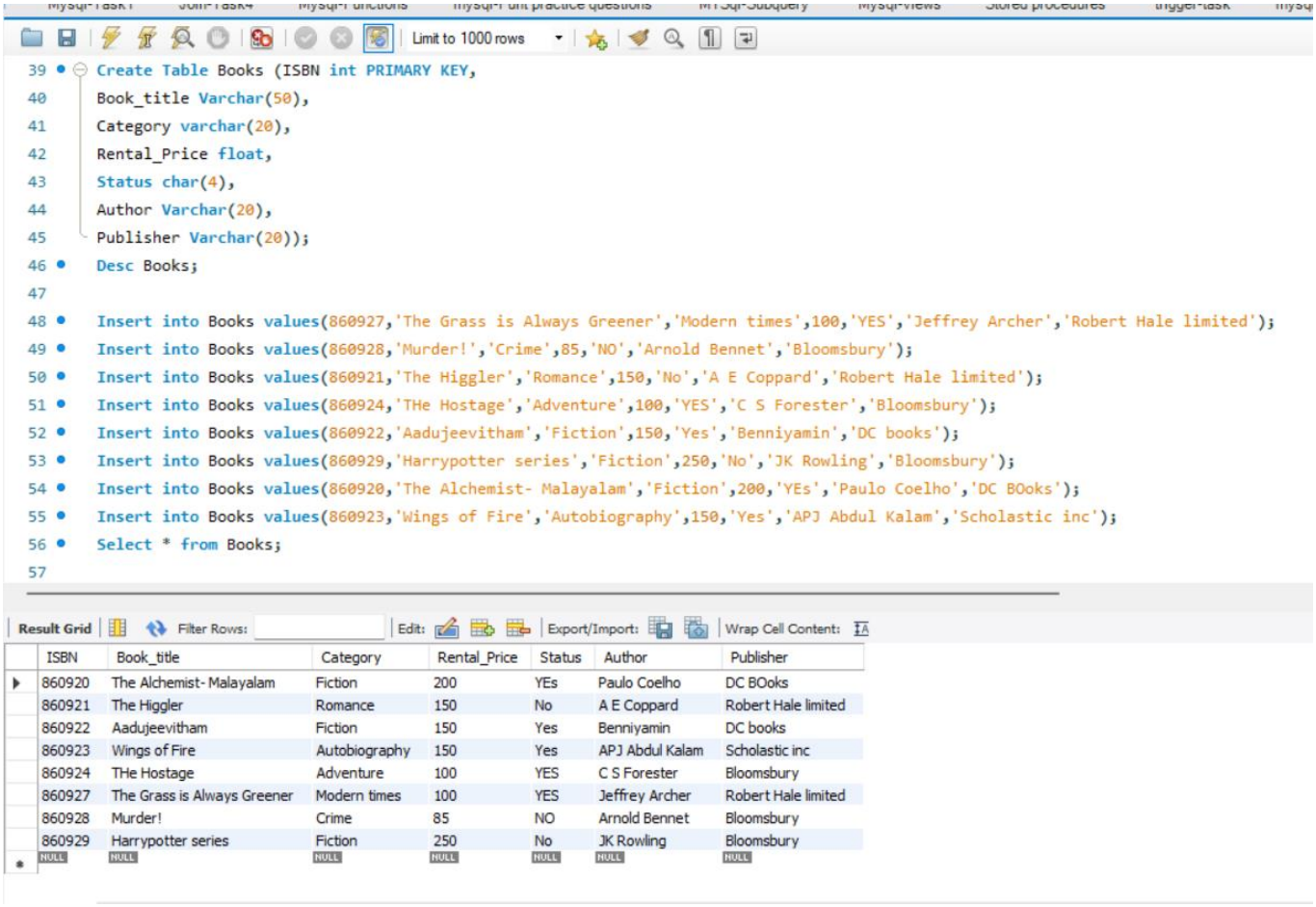
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Branch_no	Manager_Id	Branch_address	Contact_no
1	1	Thana Branch	2722880
2	2	Juhu Branch	2623740
3	3	Andheri Branch	2723190
4	4	Worli Branch	2721219
5	5	Bandra Branch	2749356
6	6	Cuffe Branch	2670594
NULL	NULL	NULL	NULL

```
20    Position varchar(30),
21    Salary float,
22    Branch_no int,
23    foreign key (Branch_no) references Branch (Branch_no));
24    Desc Employee;
25
26    insert into Employee values(101,'Arun Lal','Lib Assistant',25000,1);
27    insert into Employee values(102,'Swetha Bhatia','Library Manager',70000,3);
28    insert into Employee values(103,'Shivangi Josh','Librarian',36400,1);
29    insert into Employee values(104,'Sidharth Reddy','Librarian',50600,5);
30    insert into Employee values(105,'Arshi Oliver','Library Assistant',37500,4);
31    insert into Employee values(106,'Surbhi K','Computer Technician',38000,5);
32    insert into Employee values(107,'Anupam Mishra','Library Manager',69000,1);
33    insert into Employee values(108,'Aarushi Sharma','Library Clerk',28500,6);
34    insert into Employee values(109,'Dipika Modi','Library Clerk',31000,1);
35    insert into Employee values(110,'Sundar Lal','Librarian',52000,2);
36    insert into Employee values(111,'Suresh Kumar','Library Assistant',22000,1);
37    select * from employee;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Emp_Id	Emp_name	Position	Salary	Branch_no
101	Arun Lal	Lib Assistant	25000	1
102	Swetha Bhatia	Library Manager	70000	3
103	Shivangi Josh	Librarian	36400	1
104	Sidharth Reddy	Librarian	50600	5
105	Arshi Oliver	Library Assistant	37500	4
106	Surbhi K	Computer Technician	38000	5
107	Anupam Mishra	Library Manager	69000	1
108	Aarushi Sharma	Library Clerk	28500	6
109	Dipika Modi	Library Clerk	31000	1
110	Sundar Lal	Librarian	52000	2
111	Suresh Kumar	Library Assistant	22000	1



```
Create Table Books (ISBN int PRIMARY KEY,
Book_title Varchar(50),
Category varchar(20),
Rental_Price float,
Status char(4),
Author Varchar(20),
Publisher Varchar(20));
Desc Books;

Insert into Books values(860927,'The Grass is Always Greener','Modern times',100,'YES','Jeffrey Archer','Robert Hale limited');
Insert into Books values(860928,'Murder!','Crime',85,'NO','Arnold Bennet','Bloomsbury');
Insert into Books values(860921,'The Higgler','Romance',150,'No','A E Coppard','Robert Hale limited');
Insert into Books values(860924,'THe Hostage','Adventure',100,'YES','C S Forester','Bloomsbury');
Insert into Books values(860922,'Aadujeevitham','Fiction',150,'Yes','Benniyamin','DC books');
Insert into Books values(860929,'Harrypotter series','Fiction',250,'No','JK Rowling','Bloomsbury');
Insert into Books values(860920,'The Alchemist- Malayalam','Fiction',200,'YEs','Paulo Coelho','DC BOoks');
Insert into Books values(860923,'Wings of Fire','Autobiography',150,'Yes','APJ Abdul Kalam','Scholastic inc');
Select * from Books;
```

Result Grid

ISBN	Book_title	Category	Rental_Price	Status	Author	Publisher
860920	The Alchemist- Malayalam	Fiction	200	YEs	Paulo Coelho	DC BOoks
860921	The Higgler	Romance	150	No	A E Coppard	Robert Hale limited
860922	Aadujeevitham	Fiction	150	Yes	Benniyamin	DC books
860923	Wings of Fire	Autobiography	150	Yes	APJ Abdul Kalam	Scholastic inc
860924	THe Hostage	Adventure	100	YES	C S Forester	Bloomsbury
860927	The Grass is Always Greener	Modern times	100	YES	Jeffrey Archer	Robert Hale limited
860928	Murder!	Crime	85	NO	Arnold Bennet	Bloomsbury
860929	Harrypotter series	Fiction	250	No	JK Rowling	Bloomsbury
NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
57
58 • Create Table Customer(Customer_Id int PRIMARY KEY,
59   Customer_name varchar(15),
60   Customer_address Varchar(25),
61   Reg_date date);
62 • Desc Customer;
63
64 • Insert into Customer Values(1001,'Vandana Ambat','Mary Villa Andheri','2021-05-21');
65 • Insert into Customer Values(1002,'Kalyani Raj','Star Apartment Juhu','2024-03-13');
66 • Insert into Customer Values(1003,'Kalesh Raj','Bandra Heights','2019-09-29');
67 • Insert into Customer Values(1004,'Anil Ghosh','Nitara House Worli','2024-01-07');
68 • Insert into Customer Values(1005,'Vaidehi Nath','Avj Hostel Juhu','2023-05-18');
69 • select * from customer;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Customer_Id	Customer_name	Customer_address	Reg_date
1001	Vandana Ambat	Mary Villa Andheri	2021-05-21
1002	Kalyani Raj	Star Apartment Juhu	2024-03-13
1003	Kalesh Raj	Bandra Heights	2019-09-29
1004	Anil Ghosh	Nitara House Worli	2024-01-07
1005	Vaidehi Nath	Avj Hostel Juhu	2023-05-18
NULL	NULL	NULL	NULL

```sql
Create Table IssueStatus(Issue_Id int PRIMARY KEY,
Issued_cust int,
FOREIGN KEY (issued_cust) references Customer(Customer_Id),
Issue_date Date,
Isbn_book int, FOREIGN KEY (Isbn_book) references Books (ISBN));
Desc IssueStatus;

Insert into IssueStatus Values(10001,1003,'2020-12-15',860929);
Insert into IssueStatus Values(10002,1004,'2024-01-10',860923);
Insert into IssueStatus Values(10003,1005,'2023-09-24',860927);
Insert into IssueStatus Values(10004,1003,'2024-02-19',860929);
select * from IssueStatus;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell C

Issue_Id	Issued_cust	Issue_date	Isbn_book
10001	1003	2020-12-15	860929
10002	1004	2024-01-10	860923
10003	1005	2023-09-24	860927
10004	1003	2024-02-19	860929
NULL	NULL	NULL	NULL

```sql
Create Table ReturnStatus(Return_Id int PRIMARY KEY,
Return_cust Varchar(25),
Return_book_name Varchar(50),
Return_date date,
Isbn_book2 int, FOREIGN KEY (Isbn_book2) references Books (ISBN));
Desc ReturnStatus;

Insert into ReturnStatus values(01,'Kalesh Raj','Harrypotter series','2021-05-08',860929);
Insert into ReturnStatus values(02,'Vaidehi nath','The Grass is Always Greener','2024-03-11',860927);
select * from ReturnStatus;
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Return_Id	Return_cust	Return_book_name	Return_date	Isbn_book2
1	Kalesh Raj	Harrypotter series	2021-05-08	860929
2	Vaidehi nath	The Grass is Always Greener	2024-03-11	860927
NULL	NULL	NULL	NULL	NULL

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

```
95
96 •    Select book_title,category,rental_price from books;
97
98
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

book_title	category	rental_price
The Alchemist- Malayalam	Fiction	200
The Higgler	Romance	150
Aadujeevitham	Fiction	150
Wings of Fire	Autobiography	150
THe Hostage	Adventure	100
The Grass is Always Greener	Modern times	100
Murder!	Crime	85
Harrypotter series	Fiction	250

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

```
97 •    select emp_name,salary from Employee order by salary desc;
98
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

emp_name	salary
Swetha Bhatia	70000
Anupam Mishra	69000
Sundar Lal	52000
Sidharth Reddy	50600
Surbhi K	38000
Arshi Oliver	37500
Shivangi Josh	36400
Dipika Modi	31000
Aarushi Sharma	28500
Arun Lal	25000
Suresh Kumar	22000

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

```
119
120 •   select b.book_title,c.customer_name,i.issue_date
121     from issuestatus i join books b on b.isbn=i.isbn_book
122     join customer c on i.issued_cust=c.customer_id;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

book_title	customer_name	issue_date
Wings of Fire	Anil Ghosh	2024-01-10
The Grass is Always Greener	Vaidehi Nath	2023-09-24
Harrypotter series	Kalesh Raj	2020-12-15
Harrypotter series	Kalesh Raj	2024-02-19

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

```
107 •   select category,count(book_title) from books group by category;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

category	count(book_title)
Fiction	3
Romance	1
Autobiography	1
Adventure	1
Modern times	1
Crime	1

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

```
99 •   Select emp_name,salary,position from Employee where salary>50000;
100
101
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

emp_name	salary	position
Swetha Bhatia	70000	Library Manager
Sidharth Reddy	50600	Librarian
Anupam Mishra	69000	Library Manager
Sundar Lal	52000	Librarian

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

```
108
109 •   select customer_name from customer where Reg_date<'2022-01-01'
110     and customer_id not in (select issued_cust from issuestatus);
111
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	customer_name
▶	Vandana Ambat

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

```
101 •   select Branch_no,count(emp_name) as TotalEmployees from Employee group by Branch_no;
102
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Branch_no	TotalEmployees
1	5
2	1
3	1
4	1
5	2
6	1

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

```
110
111 •  select issued_cust from issuestatus where issue_date in ('2023-06-01') and ('2023-06-31');
112
113    # OR
114
115 •  select c.customer_name,i.issue_date from customer c join issuestatus i on c.customer_id=i.issued_cust
116    where issue_date in ('2023-06-01') and ('2023-06-31');
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

customer_name	issue_date

9. Retrieve book_title from book table containing history.

```
117
118 •   select book_title,category from books where category='History';
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	book_title	category

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

```
102
103 •   select Branch_no,count(emp_name) as TotalEmployees from Employee group by Branch_no having count(emp_name)>=5;
104
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Branch_no	TotalEmployees
1	5