

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 the following TABLES in the database:

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

Table Branch

```
65 • use library;
66
67 • create table Branch(
68     Branch_no int PRIMARY KEY,
69     Manager_id int,
70     Branch_address varchar(100),
71     Contact_no int);
72
73 • INSERT INTO Branch VALUES
74     (1, 101, '123 Main St', 5551234),
75     (2, 102, '456 Oak St', 5555678),
76     (3, 103, '789 Pine St', 5559012),
77     (4, 104, '101 Elm St', 5553456),
78     (5, 105, '202 Maple Ave', 5557890),
79     (6, 106, '303 Birch Ln', 5552345),
80     (7, 107, '404 Cedar Rd', 5556789),
```

<

Result Grid | Filter Rows: | Edit: |

	Branch_no	Manager_id	Branch_address	Contact_no
▶	1	101	123 Main St	5551234
	2	102	456 Oak St	5555678
	3	103	789 Pine St	5559012
	4	104	101 Elm St	5553456
	5	105	202 Maple Ave	5557890
	6	106	303 Birch Ln	5552345
	7	107	404 Cedar Rd	5556789
	8	108	505 Walnut Dr	5551234
	9	109	606 Spruce Ct	5555678

Table Employee

```

87 • create table Employee(
88     Emp_Id int PRIMARY KEY ,
89     Emp_name varchar(30) not null,
90     Position varchar(20) not null,
91     Salary decimal(10,2),
92     Branch_no int,
93     FOREIGN KEY(Branch_no) REFERENCES Branch(Branch_no));
94
95 • INSERT INTO Employee VALUES
96     (001, 'John Doe', 'Manager', 60000, 1),
97     (002, 'Jane Smith', 'Clerk', 40000, 1),
98     (003, 'Bob Johnson', 'Assistant Manager', 50000, 1),
99     (004, 'Alice Williams', 'Librarian', 45000, 2),
100    (005, 'Charlie Brown', 'Clerk', 40000, 3),
101    (006, 'Diana Davis', 'Assistant Manager', 52000, 3),

```






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Result Grid					
Filter Rows: <input type="text"/>					
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	Emp_Id	Emp_name	Position	Salary	Branch_no
▶	1	John Doe	Manager	60000.00	1
	2	Jane Smith	Clerk	40000.00	1
	3	Bob Johnson	Assistant Manager	50000.00	1
	4	Alice Williams	Librarian	45000.00	2
	5	Charlie Brown	Clerk	40000.00	3
	6	Diana Davis	Assistant Manager	52000.00	3
	7	Edward Evans	Librarian	46000.00	4
	8	Frank Fisher	Clerk	41000.00	4
	9	Grace Green	Manager	65000.00	4
	10	Harv Harris	Clerk	42000.00	5

Table Books

```

120 • create table Books(
121     ISBN int PRIMARY KEY,
122     Book_title varchar(100) not null,
123     Category varchar(50),
124     Rental_Price decimal(8,2),
125     Status Enum('Yes','no') Not null,
126     Author varchar(100),
127     Publisher varchar(100));
128
129 • INSERT INTO Books VALUES
130     ('1001', 'The Catcher in the Rye', 'Fiction', 3.99, 'Yes', 'J.D. Salinger', 'Little, Brown and Company'),
131     ('1002', 'To Kill a Mockingbird', 'Fiction', 4.99, 'Yes', 'Harper Lee', 'J.B. Lippincott & Co. '),
132     ('1003', '1984', 'Dystopian', 5.99, 'Yes', 'George Orwell', 'Secker & Warburg'),
133     ('1004', 'The Great Gatsby', 'Classic', 3.99, 'No', 'F. Scott Fitzgerald', 'Scribner'),
134     ('1005', 'The Hobbit', 'Fantasy', 6.99, 'Yes', 'J.R.R. Tolkien', 'Allen & Unwin'),

```








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

	ISBN	Book_title	Category	Rental_Price	Status	Author	Publisher
▶	1001	The Catcher in the Rye	Fiction	3.99	Yes	J.D. Salinger	Little, Brown and Company
	1002	To Kill a Mockingbird	Fiction	4.99	Yes	Harper Lee	J.B. Lippincott & Co.
	1003	1984	Dystopian	5.99	Yes	George Orwell	Secker & Warburg
	1004	The Great Gatsby	Classic	3.99	no	F. Scott Fitzgerald	Scribner
	1005	The Hobbit	Fantasy	6.99	Yes	J.R.R. Tolkien	Allen & Unwin
	1006	The Renaissance: Art and Culture	History	14.50	no	Michael Renaissance Scholar	Artistic Books
	1007	The Da Vind Code	Mystery	7.99	no	Dan Brown	Doubleday
	1008	Harry Potter and the Sorcerer's Stone	Fantasy	6.99	Yes	J.K. Rowling	Bloomsbury
	1009	The History of Ancient Civilizations	History	12.99	Yes	John Historian	Academic Press
	1010	The Hunoer Games	Science Fiction	5.99	no	Suzanne Collins	Scholastic

Books 1 x

Table Customer

```
143 • create table Customer(  
144     Customer_Id int PRIMARY KEY,  
145     Customer_name varchar(20) not null,  
146     Customer_address varchar(200),  
147     Reg_date date);  
148  
149 • INSERT INTO Customer VALUES  
150     (1, 'Alice Johnson', '123 Main St', '2021-01-01'),  
151     (2, 'Bob Smith', '456 Oak St', '2024-01-02'),  
152     (3, 'Charlie Brown', '789 Pine St', '2021-08-03'),  
153     (4, 'Diana Davis', '101 Elm St', '2024-01-04'),  
154     (5, 'Edward Evans', '202 Maple Ave', '2022-01-05'),  
155     (6, 'Frank Fisher', '303 Birch Ln', '2024-06-06'),  
156     (7, 'Grace Green', '404 Cedar Rd', '2021-04-07'),  
157     (8, 'Harry Harris', '505 Walnut Dr', '2020-03-08'),
```

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

	Customer_Id	Customer_name	Customer_address	Reg_date
▶	1	Alice Johnson	123 Main St	2021-01-01
	2	Bob Smith	456 Oak St	2024-01-02
	3	Charlie Brown	789 Pine St	2021-08-03
	4	Diana Davis	101 Elm St	2024-01-04
	5	Edward Evans	202 Maple Ave	2022-01-05
	6	Frank Fisher	303 Birch Ln	2024-06-06
	7	Grace Green	404 Cedar Rd	2021-04-07
	8	Harry Harris	505 Walnut Dr	2020-03-08
	9	Ivy White	606 Spruce Ct	2023-06-09
	10	Jack Jones	707 Fir Blvd	2024-01-10

Customer 1 x

Table IssueStatus

```
163 • create table IssueStatus(  
164     Issue_Id int PRIMARY KEY,  
165     Issued_cust int,  
166     Issued_book_name varchar(200) not null,  
167     Issue_date date,  
168     Isbn_book int,  
169     FOREIGN KEY(Issued_cust) references Customer(customer_id),  
170     FOREIGN KEY(Isbn_book) references Books(ISBN));  
171  
172 • INSERT INTO IssueStatus(Issue_id,Issued_cust,Issued_book_name,Issue_date) VALUES  
173     (201, 1, 'The Catcher in the Rye', '2023-06-15'),  
174     (202, 2, 'To Kill a Mockingbird', '2024-01-16'),  
175     (203, 3, '1984', '2023-06-17'),  
176     (204, 4, 'The Great Gatsby', '2024-01-18'),  
177     (205, 5, 'The Hobbit', '2024-01-19');  
178  
179 • select * from IssueStatus;
```

Result Grid					
		Filter Rows:	Edit:		Export/Import:
					Wrap Cell Content:
	Issue_Id	Issued_cust	Issued_book_name	Issue_date	Isbn_book
▶	201	1	The Catcher in the Rye	2023-06-15	NULL
	202	2	To Kill a Mockingbird	2024-01-16	NULL
	203	3	1984	2023-06-17	NULL
	204	4	The Great Gatsby	2024-01-18	NULL
	205	5	The Hobbit	2024-01-19	NULL
*	NULL	NULL	NULL	NULL	NULL

Table ReturnStatus

```

181 • create table ReturnStatus(
182     Return_Id int PRIMARY KEY,
183     Return_cust int,
184     Return_book_name varchar(100) not null,
185     Return_date date,
186     Isbn_book2 int,
187     FOREIGN KEY(Isbn_book2) references Books(ISBN));
188
189 • INSERT INTO ReturnStatus (Return_Id, Return_cust, Return_book_name, Return_date, Isbn_book2)
190     VALUES
191     (301, 1, 'The Catcher in the Rye', '2024-02-01', '1001'),
192     (302, 2, 'To Kill a Mockingbird', '2024-02-02', '1002'),
193     (303, 3, '1984', '2024-02-03', '1003'),
194     (304, 4, 'The Great Gatsby', '2024-02-04', '1004'),
195     (305, 5, 'The Hobbit', '2024-02-05', '1005');



```

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

	Return_Id	Return_cust	Return_book_name	Return_date	Isbn_book2
▶	301	1	The Catcher in the Rye	2024-02-01	1001
	302	2	To Kill a Mockingbird	2024-02-02	1002
	303	3	1984	2024-02-03	1003
	304	4	The Great Gatsby	2024-02-04	1004
	305	5	The Hobbit	2024-02-05	1005
*	NULL	NULL	NULL	NULL	NULL



Queries

1. 202 -- 1. Retrieve the book title, category, and rental price of all available books.
203 • select Book_title,Category,Rental_Price from Books where status='Yes';
204

Result Grid			
Filter Rows: <input type="text"/>			
Export: 			
Wrap Cell Content: 			
	Book_title	Category	Rental_Price
▶	The Catcher in the Rye	Fiction	3.99
	To Kill a Mockingbird	Fiction	4.99
	1984	Dystopian	5.99
	The Hobbit	Fantasy	6.99
	Harry Potter and the Sorcerer's Stone	Fantasy	6.99
	The History of Ancient Civilizations	History	12.99

2.

- 204
205 -- 2. List the employee names and their respective salaries in descending order of salary.
206 • select Emp_name,Salary from employee order by salary desc;

Result Grid		
Filter Rows: <input type="text"/>		
Export: 		
Wrap Cell Content: 		
	Emp_name	Salary
	John Doe	60000.00
	Ivy White	60000.00
	Quincy Quinn	60000.00
	Diana Davis	52000.00
	Jack Jones	52000.00
	Nathan Nelson	52000.00
	Bob Johnson	50000.00
	Edward Evans	46000.00
	Peter Parker	46000.00
	Alice Williams	45000.00
	Larry Lee	45000.00
	Harry Harris	42000.00
	Frank Fisher	41000.00
	Rachel Rogers	41000.00
	Jane Smith	40000.00
	Charlie Brown	40000.00
	Karen King	40000.00
	Olivia Olson	40000.00

3.

```
208 -- 3. Retrieve the book titles and the corresponding customers who have issued those books.
209 • select Customer_Id,Issued_book_name,Customer_name
210 from issuestatus I
211 JOIN Customer C ON I.Issued_cust=C.customer_id;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Customer_Id	Issued_book_name	Customer_name	
1	The Catcher in the Rye	Alice Johnson	
2	To Kill a Mockingbird	Bob Smith	
3	1984	Charlie Brown	
4	The Great Gatsby	Diana Davis	
5	The Hobbit	Edward Evans	

4.

```
214 -- 4. Display the total count of books in each category.
215 • select Category,count(*) as total_Books from books group by Category;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Category	total_Books		
Fiction	2		
Dystopian	1		
Classic	1		
Fantasy	2		
History	2		
Mystery	1		
Science Fiction	1		

5.

```
17 -- 5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.
18 • select Emp_name,Position from employee where Salary>50000;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Emp_name	Position		
John Doe	Manager		
Diana Davis	Assistant Manager		
Grace Green	Manager		
Ivy White	Manager		
Jack Jones	Assistant Manager		
Megan Miller	Manager		
Nathan Nelson	Assistant Manager		
Quincy Quinn	Manager		

6.

```
219
220 -- 6. List the customer names who registered before 2022-01-01 and have not issued any books yet.
221 • select Customer_name from customer
222 where Reg_date<'2022-01-01' AND
223 Customer_Id NOT IN(select Issued_cust from issuestatus);
224
```

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

Customer_name
Grace Green
Harry Harris

7.

```
225 -- 7. Display the branch numbers and the total count of employees in each branch.
226 • select Branch_no,count(*) as Total_employees from branch group by Branch_no;
227
```

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

Branch_no	Total_employees
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1

8.

```
228 -- 8. Display the names of customers who have issued books in the month of June 2023.
229 • select C.Customer_name from Customer C
230 Join issuestatus I on I.Issued_cust=C.Customer_Id
231 where month(Issue_date)=6 AND year(Issue_date)=2023;
232
```

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

Customer_name
Alice Johnson
Charlie Brown

9.

```
233 -- 9. Retrieve the book_title from the book table containing history.  
234 • select Book_title from books where Category='History';
```

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

	Book_title
▶	The Renaissance: Art and Culture
	The History of Ancient Civilizations

10.

```
238 -- 10.Retrieve the branch numbers along with the count of employees for branches having more than 5 employees  
239 • select Branch_no,count(*) as Total_Employees from Employee group by Branch_no having Total_Employees>5;
```

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

	Branch_no	Total_Employees
▶	1	6
	4	6