

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
6. 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

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.
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 5 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.

Score Distribution:

1 point for correctly formulating the query of each question (12 x 1 = 12).

1 point for providing screenshots of the output for each question (12 x 1 = 12).

1 point for timely submission.

Total = 25.

```
1 • CREATE DATABASE library;
2 • USE library;
3 • DROP TABLE employee;
4 • drop table Branches;
5 • drop table customers;
6 • CREATE TABLE Branches (Branch_no INT PRIMARY KEY,Manager_Id INT,
7 • Branch_address VARCHAR(255),Contact_no VARCHAR(20));
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8 • INSERT INTO Branches ( Branch_no,Manager_Id,Branch_address,Contact_no)
9 VALUES
10 ('20', '10', 'Alappuzha', '12345678910'),
11 ('21', '11', 'Eranakulam', '999888777666'),
12 ('22', '12', 'Aluva', '112233445566'),
13 ('23', '13', 'Trissur', '88889999989'),
14 ('24', '14', 'Palakkad', '9988776655');
15

```

```

16 • CREATE TABLE Employee (Emp_Id INT PRIMARY KEY,Emp_name VARCHAR(100),Position VARCHAR(50),
17 Salary DECIMAL(10, 2),Branch_no INT, FOREIGN KEY (Branch_no) REFERENCES Branches(Branch_no));
18 • INSERT INTO Employee (Emp_Id, Emp_name, Position, Salary, Branch_no)
19 VALUES
20 ('111', 'Rina', 'Assistant Manager', 50000.55, '20'),
21 ('112', 'Malu', 'Staff', 50000.50, '21'),
22 ('113', 'Sania', 'Staff 2', 45000.50, '22'),
23 ('114', 'Ravi', 'Assistant Manager', 55000.45, '23'),
24 ('115', 'Joe', 'Cashier', 35000.45, '24');
25

```

```

26 • CREATE TABLE Book_ (ISBN VARCHAR(20) PRIMARY KEY,Book_title VARCHAR(255),Category VARCHAR(100),
27 Rental_Price DECIMAL(10, 2),Status ENUM('yes', 'no'), Author VARCHAR(100), Publisher VARCHAR(100));
28 • INSERT INTO Book_(ISBN,Book_title,Category,Rental_Price,Status,Author,Publisher)
29 VALUES
30 ('30','Frozen','Fairy tales','100.00','yes','Tim Davies','Dishney'),
31 ('31','Ronald Duck','Cartoon','150.50','yes','Ben Don','Cartoon Network'),
32 ('32','Mowngali','Fairy Tales','180.50','yes','Tin Tom','Nick'),
33 ('33','Shuppandi','Commic','200.40','no','Rolex','Balarama'),
34 ('34','Boban Moli','Commic','120.35','no','Ken','kochu');
35

```

```

36 • CREATE TABLE Customers (Customer_Id INT PRIMARY KEY,Customer_name VARCHAR(100),
37 Customer_address VARCHAR(255), Reg_date DATE);
38 • INSERT INTO Customers(Customer_Id, Customer_name, Customer_address, Reg_date)
39 VALUES
40 ('140', 'Elsa', 'Newyork', '2024-06-10'),
41 ('141', 'Anna', 'Paris Town', '2024-06-15'),
42 ('142', 'Snowel', 'London', '2023-06-20'),
43 ('143', 'Alice', 'India', '2022-05-24'),
44 ('144', 'Anand', 'America', '2021-04-10');
45

```

```

46 • CREATE TABLE _Issue_Status_ (Issue_Id INT PRIMARY KEY,Issued_cust INT,Issued_book_name VARCHAR(255),
47 Issue_date DATE,Isbn_book VARCHAR(20),FOREIGN KEY (Issued_cust) REFERENCES Customers(Customer_Id),FOREIGN KEY (Isbn_book) REFERENCES Book_(ISBN));
48 • INSERT INTO _Issue_Status_ (Issue_Id, Issued_cust, Issued_book_name, Issue_date, Isbn_book)
49 VALUES
50 ('135', '140', 'Ice World', '2024-06-15', '30'),
51 ('136', '141', 'Tin Tonk', '2024-06-20', '31'),
52 ('137', '142', 'Anabella', '2023-07-25', '32'),
53 ('138', '143', 'Wonder land', '2022-10-30', '33'),
54 ('139', '144', 'Cool Dairy', '2021-08-05', '34');
55

```

```

56 • CREATE TABLE _Return_Status_ (Return_Id INT PRIMARY KEY,Return_cust INT,Return_book_name VARCHAR(255),
57 Return_date DATE,Isbn_book2 VARCHAR(20), FOREIGN KEY (Isbn_book2) REFERENCES Book_(ISBN));
58 • INSERT INTO _Return_Status_ (Return_Id, Return_cust, Return_book_name, Return_date, Isbn_book2)
59 VALUES
60 ('126', '105', 'Jungle book', '2024-06-20', '30'),
61 ('127', '106', 'Tom Jerry', '2024-06-25', '31'),
62 ('128', '107', 'Marsha', '2023-08-15', '32'),
63 ('129', '108', 'Dragon Fly', '2022-09-10', '33'),
64 ('130', '109', 'The sun', '2021-04-06', '34');
65

```

```

65
66 • SELECT Book_title, Category, Rental_Price
67 FROM Book_
68 WHERE Status = 'yes';
69

```

Result Grid			
		Filter Rows:	
		Export:	
		Wrap Cell Content:	
	Book_title	Category	Rental_Price
►	Frozen	Fairy tales	100.00
	Ronald Duck	Cartoon	150.50
	Mowngali	Fairy Tales	180.50

```

70 • SELECT Emp_name, Salary
71 FROM Employee
72 ORDER BY Salary DESC;

```





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

	Emp_name	Salary
▶	Rina	500000.55
	Ravi	55000.45
	Malu	50000.50
	Sania	45000.50
	Joe	35000.45

```

73
74 • SELECT b.Book_title, c.Customer_name
75 FROM Book_b
76 JOIN _Issue_Status_ i ON b.ISBN = i.Isbn_book
77 JOIN Customers c ON i.Issued_cust = c.Customer_Id;
78
79

```

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

	Book_title	Customer_name
▶	Frozen	Elsa
	Ronald Duck	Anna
	Mowngali	Snowel
	Shuppandi	Alice
	Boban Moli	Anand

```

80 • SELECT Category, COUNT(*) AS Total_Books
81 FROM Book_
82 GROUP BY Category;
83

```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	Category	Total_Books			
▶	Fairy tales	2			
	Cartoon	1			
	Commic	2			

```

84 • SELECT Emp_name, Position
85 FROM Employee
86 WHERE Salary > 50000;

```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	Emp_name	Position			
▶	Rina	Assistant Manager			
	Malu	Staff			
	Ravi	Assistant Manager			

```

87
88 • SELECT Customer_name
89 FROM Customers
90 WHERE Reg_date < '2022-01-01'
91 AND Customer_Id NOT IN (SELECT DISTINCT Issued_cust FROM IssueStatus);

```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
	Customer_name			
▶	Anand			

92

```
93 • SELECT Branch_no, COUNT(*) AS Total_Employees
94 FROM Employee
95 GROUP BY Branch_no;
```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	Branch_no	Total_Employees			
▶	20	1			
	21	1			
	22	1			
	23	1			
	24	1			

96

```
97 • SELECT DISTINCT Customer_name
98 FROM Customers
99 JOIN _Issue_Status_ i ON Customer_Id = Issued_cust
100 WHERE YEAR(Issue_date) = 2023 AND MONTH(Issue_date) = 6;
101
```

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

101

```
102 • SELECT Book_title
103 FROM Book_
104 WHERE Category LIKE '%history%';
105
```

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


```

106 • SELECT Branch_no, COUNT(*) AS Total_Employees
107     FROM Employee
108     GROUP BY Branch_no
109     HAVING COUNT(*) > 5;
110
111
112
113
114
115
116

```

Result Grid		Filter Rows: <input type="text"/>	Export:	Wrap Cell Content:
Branch_no	Total_Employees			

```

---
116 • SELECT Emp_name, Branch_address
117     FROM Employee
118     JOIN Branches ON Employee.Branch_no = Branches.Branch_no
119     WHERE Position = 'Assistant Manager'
120     LIMIT 1000;
121
122
123

```

Result Grid		Filter Rows: <input type="text"/>	Export:	Wrap Cell Content:
Emp_name	Branch_address			
▶ Rina	Alappuzha			
Ravi	Trissur			

```

123 • SELECT DISTINCT Customer_name
124 FROM Customers
125 JOIN _Issue_Status_ ON Customer_Id = Issued_cust
126 JOIN Book_ ON Isbn_book = ISBN
127 WHERE Rental_Price > 25;

```

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

Customer_name
Elsa
Anna
Snowel
Alice
Anand

Input

✓	1	18:21:44	USE library	0 row(s) affected	0.000 sec
✓	2	18:21:53	CREATE TABLE Branches (Branch_no INT PRIMARY KEY, Manager_Id INT, Branch_address VARCHAR(100))	0 row(s) affected	0.031 sec
✓	3	18:22:52	INSERT INTO Branches (Branch_no, Manager_Id, Branch_address, Contact_no) VALUES (20, 10, 'Alappu', 100)	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.031 sec
✓	4	18:27:18	CREATE TABLE Employee (Emp_Id INT PRIMARY KEY, Emp_name VARCHAR(100), Position VARCHAR(50))	0 row(s) affected	0.046 sec
✓	22	18:56:32	drop table employee	0 row(s) affected	0.031 sec
✓	23	18:56:38	CREATE TABLE Employee (Emp_Id INT PRIMARY KEY, Emp_name VARCHAR(100), Position VARCHAR(50))	0 row(s) affected	0.031 sec
✓	24	18:56:47	INSERT INTO Employee (Emp_Id, Emp_name, Position, Salary, Branch_no) VALUES (111, 'Rina', 'Assista', 1000, 20)	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.031 sec
✓	25	19:20:01	CREATE TABLE Book_ (ISBN VARCHAR(20) PRIMARY KEY, Book_title VARCHAR(255), Category VARCHAR(50))	0 row(s) affected	0.047 sec
✓	26	19:20:07	INSERT INTO Book_ (ISBN, Book_title, Category, Rental_Price, Status, Author, Publisher) VALUES (30, 'Frozen', 'Children', 10, 'Frozen', 'Disney', 'Disney')	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.031 sec
✓	26	19:20:07	INSERT INTO Book_ (ISBN, Book_title, Category, Rental_Price, Status, Author, Publisher) VALUES (30, 'Frozen', 'Children', 10, 'Frozen', 'Disney', 'Disney')	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.031 sec
✓	27	19:21:04	CREATE TABLE Customers_s (Customer_Id INT PRIMARY KEY, Customer_name VARCHAR(100))	0 row(s) affected	0.031 sec
✗	28	19:21:44	drop table customers	Error Code: 1051. Unknown table 'library.customers'	0.000 sec
✓	29	19:22:13	CREATE TABLE Customers (Customer_Id INT PRIMARY KEY, Customer_name VARCHAR(100))	0 row(s) affected	0.047 sec
✓	30	19:29:52	INSERT INTO Customers (Customer_Id, Customer_name, Customer_address, Reg_date) VALUES (140, 'Elsa', '123 Main St', '2019-01-01')	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.031 sec
✓	31	19:30:20	CREATE TABLE Issue_Status (Issue_Id INT PRIMARY KEY, Issued_cust INT, Issued_book_name VARCHAR(100))	Error Code: 1050. Table 'issue_status' already exists	0.000 sec
✓	29	19:22:13	CREATE TABLE Customers (Customer_Id INT PRIMARY KEY, Customer_name VARCHAR(100))	0 row(s) affected	0.047 sec
✓	30	19:29:52	INSERT INTO Customers (Customer_Id, Customer_name, Customer_address, Reg_date) VALUES (140, 'Elsa', '123 Main St', '2019-01-01')	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.031 sec
✓	31	19:30:20	CREATE TABLE Issue_Status (Issue_Id INT PRIMARY KEY, Issued_cust INT, Issued_book_name VARCHAR(100))	Error Code: 1050. Table 'issue_status' already exists	0.000 sec
✓	32	19:31:10	CREATE TABLE _IssueStatus_ (Issue_Id INT PRIMARY KEY, Issued_cust INT, Issued_book_name VARCHAR(100))	0 row(s) affected	0.062 sec
✓	33	19:51:31	CREATE TABLE _Issue_Status_ (Issue_Id INT PRIMARY KEY, Issued_cust INT, Issued_book_name VARCHAR(100))	0 row(s) affected	0.047 sec
✓	34	19:51:42	INSERT INTO _Issue_Status_ (Issue_Id, Issued_cust, Issued_book_name, Issue_date, Isbn_book) VALUES (1, 10, 'Frozen', '2019-01-01', 30)	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.016 sec

53	20:24:36	CREATE TABLE Branches (Branch_no INT PRIMARY KEY,Manager_Id INT, Branch_address VARCH...	0 row(s) affected	0.016 sec
54	20:24:36	INSERT INTO Branches (Branch_no,Manager_Id,Branch_address,Contact_no) VALUES (20,'10','Alappu...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
55	20:24:36	CREATE TABLE Employee (Emp_Id INT PRIMARY KEY,Emp_name VARCHAR(100),Position VARCHAR(50)...	0 row(s) affected	0.031 sec
56	20:24:36	INSERT INTO Employee (Emp_Id,Emp_name, Position, Salary, Branch_no) VALUES ('111','Rina','Assista...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
57	20:24:36	CREATE TABLE Book_ (ISBN VARCHAR(20) PRIMARY KEY,Book_title VARCHAR(255),Category VARCHA...	Error Code: 1050. Table 'book_' already exists	0.000 sec
58	20:24:36	INSERT INTO Book_ (ISBN,Book_title,Category,Rental_Price,Status,Author,Publisher) VALUES (30,'Frozen',...	Error Code: 1062. Duplicate entry '30' for key 'book_PRIMARY'	0.000 sec
61	20:24:36	CREATE TABLE _Issue_Status_ (Issue_Id INT PRIMARY KEY,Issued_cust INT,Issued_book_name VARCH...	Error Code: 1050. Table '_issue_status_' already exists	0.000 sec
62	20:24:36	INSERT INTO _Issue_Status_ (Issue_Id, Issued_cust, Issued_book_name, Issue_date, Isbn_book) VALUES ...	Error Code: 1062. Duplicate entry '135' for key '_issue_status_PRIMARY'	0.000 sec
63	20:24:36	CREATE TABLE _Return_Status_ (Return_Id INT PRIMARY KEY,Return_cust INT,Return_book_name VAR...	Error Code: 1050. Table '_return_status_' already exists	0.000 sec
64	20:24:36	INSERT INTO _Return_Status_ (Return_Id, Return_cust, Return_book_name, Return_date, Isbn_book2) VA...	Error Code: 1062. Duplicate entry '126' for key '_return_status_PRIMARY'	0.000 sec
65	20:24:36	SELECT Book_title, Category, Rental_Price FROM Book_ WHERE Status = 'yes' LIMIT 0, 1000	3 row(s) returned	0.000 sec / 0.000 sec
66	20:24:36	SELECT Emp_name, Salary FROM Employee ORDER BY Salary DESC LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
84	20:42:11	SELECT Emp_name, Branch_address FROM Employee JOIN Branches ON Employee.Branch_no = Branches....	0 row(s) returned	0.000 sec / 0.000 sec
85	20:43:21	SELECT Book_title FROM Book_ WHERE Category LIKE "%history%"; LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
86	20:43:29	SELECT Emp_name, Branch_address FROM Employee JOIN Branches ON Employee.Branch_no = Branches....	0 row(s) returned	0.000 sec / 0.000 sec
87	20:44:27	SELECT Branch_no, COUNT(*) AS Total_Employees FROM Employee GROUP BY Branch_no HAVING COU...	0 row(s) returned	0.000 sec / 0.000 sec
88	20:46:07	SELECT Book_title FROM Book_ WHERE Category LIKE "%history%"; LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
81	20:38:46	SELECT Emp_name, Branch_address FROM Employee JOIN Branches ON Employee.Branch_no = Branches....	2 row(s) returned	0.000 sec / 0.000 sec
82	20:41:15	SELECT DISTINCT Customer_name FROM Customers JOIN _Issue_Status_ i ON Customer_Id = Issued_cust...	0 row(s) returned	0.000 sec / 0.000 sec
83	20:41:33	SELECT DISTINCT Customer_name FROM Customers JOIN _Issue_Status_ i ON Customer_Id = Issued_cust...	0 row(s) returned	0.000 sec / 0.000 sec