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 :

Query and Results

```
1     -- Create the database
2     create database library;
3     use library;
4
5     create table Branch (
6         Branch_no int primary key,
7         Manager_Id int,
8         Branch_address varchar(100),
9         Contact_no varchar(15)
10    );
```

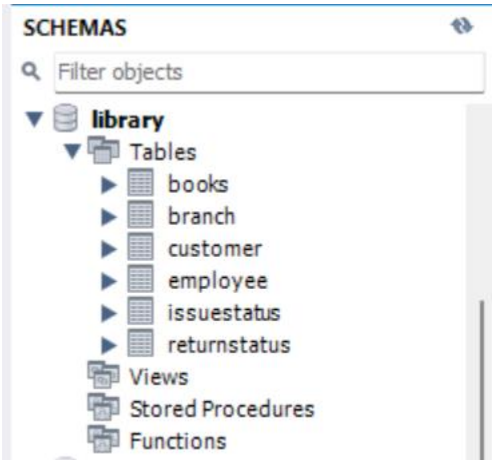
```sql
create table Employee (
    Emp_Id int primary key,
    Emp_name varchar(100),
    Position varchar(100),
    Salary decimal(10, 2),
    Branch_no int,
    foreign key (Branch_no) references Branch(Branch_no)
);

create table Books (
    ISBN varchar(20) primary key,
    Book_title varchar(100),
    Category varchar(100),
    Rental_Price decimal(10, 2),
    Status enum('Yes', 'No'),
    Author varchar(100),
    Publisher varchar(100)
);

create table Customer (
    Customer_Id int primary key,
    Customer_name varchar(100),
    Customer_address varchar(120),
    Reg_date date
);

create table IssueStatus (
    Issue_Id int primary key,
    Issued_cust int,
    Issued_book_name varchar(100),
    Issue_date date,
    Isbn_book varchar(20),
    foreign key (Issued_cust) references Customer(Customer_Id),
    foreign key (Isbn_book) references Books(ISBN)
);
```

```sql
create table ReturnStatus (
    Return_Id int primary key,
    Return_cust int,
    Return_book_name varchar(100),
    Return_date date,
    Isbn_book2 varchar(20),
    foreign key (Isbn_book2) references Books(ISBN)
);
```




```sql
insert into Branch (Branch_no, Manager_Id, Branch_address, Contact_no) values
(1, 11, 'Street 45 Bangalore', '1454567890'),
(2, 12, 'Street 46 Bangalore', '9986543210'),
(3, 13, 'Street 47 Bangalore', '1134334455'),
(4, 14, 'Street 48 Bangalore', '1454334455'),
(5, 15, 'Street 49 Bangalore', '2234334455');
select* from Branch;
```

Result Grid | Filter Rows: | Edit:

Branch_no	Manager_Id	Branch_address	Contact_no
1	11	Street 45 Bangalore	1454567890
2	12	Street 46 Bangalore	9986543210
3	13	Street 47 Bangalore	1134334455
4	14	Street 48 Bangalore	1454334455
5	15	Street 49 Bangalore	2234334455
NULL	NULL	NULL	NULL

```
65 •  insert into Employee (Emp_Id, Emp_name, Position, Salary, Branch_no) values
66    (11, 'Divya Sarath', 'Manager', 60000, 1),
67    (12, 'Rajesh Shankar', 'Manager', 55000, 2),
68    (13, 'Rani Manoj', 'Manager', 52000, 3),
69    (14, 'Manav Singh', 'Librarian', 45000, 4),
70    (15, 'Mahesh Swaraj', 'Clerk', 30000, 5);
71 •  select* from Employee;
```

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

Emp_Id	Emp_name	Position	Salary	Branch_no
11	Divya Sarath	Manager	60000.00	1
12	Rajesh Shankar	Manager	55000.00	2
13	Rani Manoj	Manager	52000.00	3
14	Manav Singh	Librarian	45000.00	4
15	Mahesh Swaraj	Clerk	30000.00	5
NULL	NULL	NULL	NULL	NULL

```
73 •  insert into Books (ISBN, Book_title, Category, Rental_Price, Status, Author, Publisher) values
74    ('ISBN001', 'Alices Adventures in Wonderland', 'Novel', 130.00, 'Yes', 'Lewis Carroll', 'abcd'),
75    ('ISBN002', 'Advanced Mathematics', 'Education', 125.00, 'Yes', 'Jane Roe', 'efgh'),
76    ('ISBN003', 'The Covenant of Water', 'Fiction', 120.00, 'No', 'Abraham Verghese', 'ijkl'),
77    ('ISBN004', 'Beautiful World, Where Are You', 'Fiction', 120.00, 'No', 'Sally Rooney', 'mnop'),
78    ('ISBN005', 'Modern Art Explained', 'Art', 135.00, 'Yes', 'Picasso', 'qrst');
79 •  select* from Books;
```

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

ISBN	Book_title	Category	Rental_Price	Status	Author	Publisher
ISBN001	Alices Adventures in Wonderland	Novel	130.00	Yes	Lewis Carroll	abcd
ISBN002	Advanced Mathematics	Education	125.00	Yes	Jane Roe	efgh
ISBN003	The Covenant of Water	Fiction	120.00	No	Abraham Verghese	ijkl
ISBN004	Beautiful World, Where Are You	Fiction	120.00	No	Sally Rooney	mnop
ISBN005	Modern Art Explained	Art	135.00	Yes	Picasso	qrst
NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
81 •  insert into Customer (Customer_Id, Customer_name, Customer_address, Reg_date) values
82    (31, 'Sony Thomas', 'Street 1, Mumbai', '2021-12-20'),
83    (32, 'Anil Samuel', 'Street 2, Mumbai', '2022-05-15'),
84    (33, 'Raj Mohan', 'Street 3, Mumbai', '2022-05-15'),
85    (34, 'Praveen Raj', 'Street 4, Mumbai', '2022-05-15'),
86    (35, 'Akhila Dev', 'Street 5, Mumbai', '2020-11-10');
87 •  select* from Customer;
```

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

Customer_Id	Customer_name	Customer_address	Reg_date
31	Sony Thomas	Street 1, Mumbai	2021-12-20
32	Anil Samuel	Street 2, Mumbai	2022-05-15
33	Raj Mohan	Street 3, Mumbai	2022-05-15
34	Praveen Raj	Street 4, Mumbai	2022-05-15
35	Akhila Dev	Street 5, Mumbai	2020-11-10
NULL	NULL	NULL	NULL

```
89 •  insert into IssueStatus (Issue_Id, Issued_cust, Issued_book_name, Issue_date, Isbn_book) values
90    (1001, 31, 'Alices Adventures in Wonderland', '2023-06-15', 'ISBN001'),
91    (1002, 32, 'Advanced Mathematics', '2023-06-16', 'ISBN002'),
92    (1003, 33, 'The Covenant of Water', '2023-06-17', 'ISBN003'),
93    (1004, 34, 'Modern Art Explained', '2023-06-19', 'ISBN005');
94 •  select* from IssueStatus;
```

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

Issue_Id	Issued_cust	Issued_book_name	Issue_date	Isbn_book
1001	31	Alices Adventures in Wonderland	2023-06-15	ISBN001
1002	32	Advanced Mathematics	2023-06-16	ISBN002
1003	33	The Covenant of Water	2023-06-17	ISBN003
1004	34	Modern Art Explained	2023-06-19	ISBN005
NULL	NULL	NULL	NULL	NULL

```
96 •  insert into ReturnStatus (Return_Id, Return_cust, Return_book_name, Return_date, Isbn_book2) values
97    (3001, 31, 'Alices Adventures in Wonderland', '2023-06-25', 'ISBN001'),
98    (3002, 32, 'Advanced Mathematics', '2023-06-26', 'ISBN002'),
99    (3003, 33, 'The Covenant of Water', '2023-06-27', 'ISBN003');
100 •  select* from ReturnStatus;
```

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

Return_Id	Return_cust	Return_book_name	Return_date	Isbn_book2
3001	31	Alices Adventures in Wonderland	2023-06-25	ISBN001
3002	32	Advanced Mathematics	2023-06-26	ISBN002
3003	33	The Covenant of Water	2023-06-27	ISBN003
NULL	NULL	NULL	NULL	NULL

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

Query and Results

```
102    /*Retrieve the book title, category, and rental price of all available books*/
103 •  select Book_title, Category, Rental_Price from Books where Status = 'Yes';
```

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

Book_title	Category	Rental_Price
Alices Adventures in Wonderland	Novel	130.00
Advanced Mathematics	Education	125.00
Modern Art Explained	Art	135.00

---

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

Query and Results

```
105     /*List the employee names and their respective salaries in descending order of salary*/
106 •   select Emp_name, Salary from Employee order by Salary desc;
```

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

Emp_name	Salary
Divya Sarath	60000.00
Rajesh Shankar	55000.00
Rani Manoj	52000.00
Manav Singh	45000.00
Mahesh Swaraj	30000.00

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

Query and Results

```
108     /*Retrieve the book titles and the corresponding customers who have issued those books*/
109 •   select B.Book_title, C.Customer_name from IssueStatus I
110     join Books B on I.Isbn_book = B.ISBN
111     join Customer C on I.Issued_cust = C.Customer_Id;
```

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

Book_title	Customer_name
Alices Adventures in Wonderland	Sony Thomas
Advanced Mathematics	Anil Samuel
The Covenant of Water	Raj Mohan
Modern Art Explained	Praveen Raj

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

Query and Results

```
113     /*Display the total count of books in each category*/
114 •   select Category, count(*) as Total_Books from Books group by Category;
```

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

Category	Total_Books
Novel	1
Education	1
Fiction	2
Art	1

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

Query and Results

```
116  /*Retrieve the employee names and their positions for the employees whose salaries
117  are above Rs.50,000*/
118  select Emp_name, Position from Employee where Salary > 50000;
```

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

Emp_name	Position
Divya Sarath	Manager
Rajesh Shankar	Manager
Rani Manoj	Manager

---

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

Query and Results

```
120  /* List the customer names who registered before 2022-01-01 and have not issued any books yet*/
121  select C.Customer_name from Customer C
122  left join IssueStatus I on C.Customer_Id = I.Issued_cust
123  where C.Reg_date < '2022-01-01' and I.Issue_Id is null;
```

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

Customer_name
Akhila Dev

---

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

Query and Results

```
125  /*Display the branch numbers and the total count of employees in each branch*/
126  select Branch_no, count(*) as Total_Employees from Employee group by Branch_no;
```

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

Branch_no	Total_Employees
1	1
2	1
3	1
4	1
5	1

---

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

Query and Results

```
128     /*Display the names of customers who have issued books in the month of June 2023*/
129 •   select C.Customer_name from IssueStatus I
130     join Customer C on I.Issued_cust = C.Customer_Id
131     where Issue_date between '2023-06-01' and '2023-06-30';
```

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

Customer_name
Sony Thomas
Anil Samuel
Raj Mohan
Praveen Raj

---

9. Retrieve book_title from book table containing history.

Query and Results

```
133     /*Retrieve book_title from book table containing history*/
134 •   select Book_title from Books where Book_title like '%history%';
```

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

Book_title

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

Query and Results

```
136     /*Retrieve the branch numbers along with the count of employees for branches
137     having more than 5 employees*/
138 •   select Branch_no, count(*) as Total_Employees from Employee group by Branch_no having
139     count(*) > 5;
```

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

Branch_no	Total_Employees

11. Retrieve the names of employees who manage branches and their respective branch addresses.

Query and Results

```
141     /*Retrieve the names of employees who manage branches and their respective branch addresses*/
142 •   select E.Emp_name, B.Branch_address from Employee E
143     join Branch B on E.Emp_Id = B.Manager_Id;
```

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

Emp_name	Branch_address
Divya Sarath	Street 45 Bangalore
Rajesh Shankar	Street 46 Bangalore
Rani Manoj	Street 47 Bangalore
Manav Singh	Street 48 Bangalore
Mahesh Swaraj	Street 49 Bangalore

12. Display the names of customers who have issued books with a rental price higher than Rs. 25.

Query and Results

```
145     /*Display the names of customers who have issued books with a rental price higher than Rs. 25*/
146 •   select distinct C.Customer_name from IssueStatus I
147     join Books B on I.Isbn_book = B.ISBN
148     join Customer C on I.Issued_cust = C.Customer_Id where B.Rental_Price > 25;
```

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

Customer_name
Sony Thomas
Anil Samuel
Raj Mohan
Praveen Raj