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:

Attributes for the tables:

1. Branch

Branch_no - Set as PRIMARY KEY

Manager_Id

Branch_address

Contact_no

```
4  create table Branch (Branch_no int not null primary key,Manager_id int not null,Branch_address varchar(35),contact_no int,
5  check(contact_no > 999999999 and contact_no <= 9999999999));
6  desc Branch;
7  insert into branch values(101,1001,'Central library palakkad',1846232321);
8  insert into branch values(102,1002,'Central library Thrissur',1445676711);
9  insert into branch values(103,1003,'Central library Kochi',1845676711);
10 insert into branch values(104,1004,'Central library Wayanad',1745676711);
11 insert into branch values(105,1005,'Central library TVM',1454676711);
```

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

Branch_no	Manager_id	Branch_address	contact_no
101	1001	Central library palakkad	1846232321
102	1002	Central library Thrissur	1645666711
103	1003	Central library Kochi	1845676711
104	1004	Central library Wayanad	1745676711
105	1005	Central library TVM	1454676711
NULL	NULL	NULL	NULL

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

```
14 • create table Employee(Emp_id int not null primary key,Emp_Name varchar(25),Position varchar(25),Salary int,
15   Branch_no int,FOREIGN KEY (Branch_no)REFERENCES Branch(Branch_no)ON DELETE CASCADE);
16 • drop table Employee;
17 • insert into Employee values(1001,'Ram','Manger',55000,101);
18 • insert into Employee values(1002,'Akhila','Accountant',52000,102);
19 • insert into Employee values(1003,'Athira','Manger',65000,103);
20 • insert into Employee values(1004,'Nirmala','Cleaner',35000,104);
21 • insert into Employee values(1005,'vinu','Trainee.Ass',25000,105);
22 • insert into Employee values(1006,'ramu','System librarian',47000,102);
23 • insert into Employee values(1007,'getha','information Manger',40000,104);
24 • select * from employee;
```

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

Emp_id	Emp_Name	Position	Salary	Branch_no
1001	Ram	Manger	55000	101
1002	Akhila	Accountant	52000	102
1003	Athira	Manger	65000	103
1004	Nirmala	Cleaner	35000	104
1005	vinu	Trainee.Ass	25000	105
1006	ramu	System librarian	47000	102
1007	getha	information Manger	40000	104
NULL	NULL	NULL	NULL	NULL

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

```
25 • create table Book (ISBN int not null primary key,Book_title varchar(35),Category varchar(25),Rental_Price int,Status_b varchar(5),Author varchar(30),Publisher varchar(30));
26 • insert into book values(1111,'IT','Horror',150,'yes','Stephen King','Nation Press');
27 • insert into book values(2222,'Dune','Science fiction',100,'yes','Frank Herbert','Penguin Books India');
28 • insert into book values(2020,'Jaws','Horror',170,'No','Peter Benchley','Nation Press');
29 • insert into book values(4444,'Macbeth','Classics',250,'yes','William Sakespeare','Macmillan');
30 • insert into book values(5050,'X','Detective',50,'yes','Stephen King','Harper Collins');
31 • insert into book values(1511,'Emma','Historical',180,'yes','Stephen King','Nation Press');
32 • insert into book values(7171,'Goldfinger','Detective',210,'No','Stephen King','Macmillan');
33 • insert into book values(1212,'Mockingjay','Romance',210,'No','Stephen King','Simon And Schuster');
34 • select * from book;
```

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

ISBN	Book_title	Category	Rental_Price	Status_b	Author	Publisher
1111	IT	Horror	150	yes	Stephen King	Nation Press
1212	Mockingjay	Romance	210	No	Stephen King	Simon And Schuster
1511	Emma	Historical	180	yes	Stephen King	Nation Press
2020	Jaws	Horror	170	No	Peter Benchley	Nation Press
2222	Dune	Science fiction	100	yes	Frank Herbert	Penguin Books India
4444	Macbeth	Classics	250	yes	William Sakespeare	Macmillan
5050	X	Detective	50	yes	Stephen King	Harper Collins
7171	Goldfinger	Detective	210	No	Stephen King	Macmillan
NULL	NULL	NULL	NULL	NULL	NULL	NULL

4. Customer

Customer_Id - Set as PRIMARY KEY

Customer_name

Customer_address

Reg_date

```sql
create table Customer (Customer_id int not null primary key,Customer_Name varchar(15),Customer_address varchar(25),Reg_Date date);
desc Customer;
insert into Customer values(1,'Manu','NH 66 main st','2024-06-12');
insert into Customer values(2,'mani','NH 666  st','2023-09-02');
insert into Customer values(3,'Anu','NH 606 main st','2024-08-21');
insert into Customer values(4,'anju','NH 616 main st','2024-11-13');
insert into Customer values(6,'ravi','NH 67 main Road','2024-12-10');
insert into Customer values(7,'Rahul','NH 46 main st','2024-09-09');
insert into Customer values(8,'radha','NH 56 main st','2024-01-09');
insert into Customer values(9,'ganesh','NH 86 main st','2024-12-10');
insert into Customer values(10,'Abhi','NH 460  st','2024-04-14');
select * from Customer;
```

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

Customer_id	Customer_Name	Customer_address	Reg_Date
1	Manu	NH 66 main st	2024-06-12
2	mani	NH 666 st	2023-09-02
3	Anu	NH 606 main st	2024-08-21
4	anju	NH 616 main st	2024-11-13
6	ravi	NH 67 main Road	2024-12-10
7	Rahul	NH 46 main st	2024-09-09
8	radha	NH 56 main st	2024-01-09
9	ganesh	NH 86 main st	2024-12-10
10	Abhi	NH 460 st	2024-04-14
NULL	NULL	NULL	NULL

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

```sql
create table IssueStatus (Issue_id int not null primary key,issued_book_name varchar(25),issue_date date,
ISBN_book int,FOREIGN KEY (ISBN_book) REFERENCES Book(ISBN) ON DELETE CASCADE, Issued_cust int,
FOREIGN KEY (Issued_cust) REFERENCES Customer(Customer_id) ON DELETE CASCADE);
desc IssueStatus;
select * from IssueStatus;
insert into IssueStatus values(21,'IT','2024-09-19','1111',1);
insert into IssueStatus values(22,'Dune','2024-12-29','2222',2);
insert into IssueStatus values(23,'2020','2024-04-17','2020',3);
insert into IssueStatus values(24,'Macbeth','2024-10-15','4444',4);
insert into IssueStatus values(25,'X','2024-05-03','5050',6);
insert into IssueStatus values(26,'Emma','2024-01-02','1511',7);
insert into IssueStatus values(27,'Goldfinger','2024-06-12','7171',6);
insert into IssueStatus values(28,'Mockingjay','2024-12-22','1212',8);
insert into IssueStatus values(29,'Dune','2024-11-09','2222',1);
insert into IssueStatus values(30,'Macbeth','2024-09-19','4444',10);
```

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

Issue_id	issued_book_name	issue_date	ISBN_book	Issued_cust
21	IT	2024-09-09	1111	1
22	Dune	2024-12-29	2222	2
23	2020	2024-04-17	2020	3
24	Macbeth	2024-10-15	4444	4
25	X	2024-05-03	5050	6
26	Emma	2024-01-02	1511	7
27	Goldfinger	2024-06-12	7171	6
28	Mockingjay	2024-12-22	1212	8
29	Dune	2024-11-09	2222	1
30	Macbeth	2024-09-19	4444	10
NULL	NULL	NULL	NULL	NULL

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 table ReturnStatus (Return_id int not null primary key,Return_cust int,Return_book_name varchar(25),
Return_Date date,ISBN_book2 int , foreign key (ISBN_book2) references  Book(ISBN) ON DELETE CASCADE);
desc ReturnStatus;
select * from ReturnStatus;
insert into ReturnStatus (Return_id,Return_cust,Return_book_name,Return_Date,ISBN_book2) values
                         (2,1,'Dune','2024-10-19',2222),
                         (3,3,'Jaws','2024-09-22',2020),
                         (4,4,'Macbeth','2024-08-25',4444),
                         (5,5,'X','2024-10-22',5050),
                         (6,6,'Emma','2024-09-28',1511),
                         (7,7,'Goldfinger','2024-11-22',7171),
                         (8,8,'Mockingjay','2024-10-27',1212);
show tables in library;
```

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

Return_id	Return_cust	Return_book_name	Return_Date	ISBN_book2
1	1	IT	2024-09-19	1111
2	1	Dune	2024-10-19	2222
3	3	Jaws	2024-09-22	2020
4	4	Macbeth	2024-08-25	4444
5	5	X	2024-10-22	5050
6	6	Emma	2024-09-28	1511
7	7	Goldfinger	2024-11-22	7171
8	8	Mockingjay	2024-10-27	1212
NULL	NULL	NULL	NULL	NULL

<u>Display all the tables and Write the queries for the following :</u>

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

```
#1. Retrieve the book title, category, and rental price of all available books.
select Book_Title,Category,Rental_Price from Book;
```

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

Book_Title	Category	Rental_Price
IT	Horror	150
Mockingjay	Romance	210
Emma	Historical	180
Jaws	Horror	170
Dune	Science fiction	100
Macbeth	Classics	250
X	Detective	50
Goldfinger	Detective	210

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

```
#2. List the employee names and their respective salaries in descending order of salary.
select Emp_Name, Salary  from Employee order by Salary desc;
```

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

Emp_Name	Salary
Athira	65000
Ram	55000
Akhila	52000
ramu	47000
getha	40000
Nirmala	35000
vinu	25000

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

```
91    #3. Retrieve the book titles and the corresponding customers who have issued those books.
92 •  select Book_Title,Customer_Name from IssueStatus i join Book b on i.ISBN_book =b.ISBN join Customer c on i.Issued_cust = c.Customer_id ;
93
94
```

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

Book_Title	Customer_Name
IT	Manu
Mockingjay	radha
Emma	Rahul
Jaws	Anu
Dune	mani
Dune	Manu
Macbeth	anju
Macbeth	Abhi
X	ravi
Goldfinger	ravi

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

```
92
93    #4. Display the total count of books in each category.
94 •  select Category,count(*) as 'Count of books' from book group  by Category;
95
```

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

Category	Count of books
Horror	2
Romance	1
Historical	1
Science fiction	1
Classics	1
Detective	2

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

```
96    #5. Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000.
97 •  select Emp_Name,Position from Employee where Salary > 50000;
98
```

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

Emp_Name	Position
Ram	Manger
Akhila	Accountant
Athira	Manger

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

```
100    #6. List the customer names who registered before 2022-01-01 and have not issued any books yet.
101 •  select Customer_Name from customer where Reg_Date <'2022-01-01' and Customer_id not in (select Issued_cust from IssueStatus);
102
```

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

Customer_Name
Abhinav

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

```
105    #7. Display the branch numbers and the total count of employees in each branch.
106    select Branch_no,count(Emp_Name) as Emp_count from Employee group by Branch_no;
```

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

Branch_no	Emp_count
101	1
102	2
103	1
104	2
105	1

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

```
108
109    #8. Display the names of customers who have issued books in the month of sep 2023.
110    select Customer_Name from IssueStatus i join Customer c on i.Issued_cust =c.Customer_id where month(issue_date) =09 ;
111
```

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

Customer_Name
Manu
Abhi

9. Retrieve book_title from book table containing history.

```
113    #9. Retrieve book_title from book table containing Historical.
114    select Book_title from Book where Category ='Historical';
115
```

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

Book_title
Emma

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

```
118    #10.Retrieve the branch numbers along with the count of employees for branches having more than 1 employees
119    select Branch_no,count(Emp_Name) as Emp_count  from Employee group by Branch_no having count(Emp_Name) >1;
```

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

Branch_no	Emp_count
102	2
104	2