Mysql Comprehensive Assessment

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   create database Library;
2 • use Library;
3 • create table Branch ( Branch_No int primary key,Manager_Id int, Branch_Address varchar(300), contact_No varchar(15));
4 • insert into Branch ( Branch_No, Manager_Id, Branch_Address, Contact_No) value
5   (101, 10101, '1001 Aluva, Ernakulam', '873456298'),
6   (102, 10102, '1002 Chalakudy, Thrissur', '987642678'),
7   (103, 10103, '1003 Thalassery, Kannur', '789654326'),
8   (104, 10104, '1004 Vadakara, Kozhikode', '876541295'),
9   (105, 10105, '1005 Ottappalam, Palakkad', '987654932');
10 • select*from Branch;
```

1. Branch

• Branch_no

- Set as PRIMARY KEY
  • Manager_Id
  • Branch_address
  • Contact_no

```
insert into Branch ( Branch_No, Manager_Id, Branch_Address, Contact_No) value
(101, 10101, '1001 Aluva, Ernakulam', '873456298'),
(102, 10102, '1002 Chalakudy, Thrissur', '987642678'),
(103, 10103, '1003 Thalassery, Kannur', '789654326'),
(104, 10104, '1004 Vadakara, Kozhikode', '876541295'),
(105, 10105, '1005 Ottappalam, Palakkad', '987654932');
select*from Branch;
```

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

Branch_No	Manager_Id	Branch_Address	contact_No
101	10101	1001 Aluva, Ernakulam	873456298
102	10102	1002 Chalakudy, Thrissur	987642678
103	10103	1003 Thalassery, Kannur	789654326
104	10104	1004 Vadakara, Kozhikode	876541295
105	10105	1005 Ottappalam, Palakkad	987654932
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

```
create table Employee (Emp_Id int primary key, Emp_Name varchar(60), Position varchar(60), Salary int, Branch_No int, foreign key (Branch_No) references Branch(Branch_No));
insert into Employee (Emp_Id, Emp_Name, Position, Salary, Branch_No) value
(1, 'Vishnu Ravi', 'Manager', 50000, 101),
(2, 'Achu Raj', 'Librarian', 30000, 101),
(3, 'Aswin Kumar', 'Manager', 60000,102),
(4, 'kavya Anoop', 'Librarian', 25000, 102),
(5, 'Priya Peter', 'Manager', 55000,103),
(6, 'vijay Kumar', 'Manager', 50000,104),
(7, 'Pooja Ravi', 'Librarian', 35000, 105);
select*from Employee;
```

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

Emp_Id	Emp_Name	Position	Salary	Branch_No
1	Vishnu Ravi	Manager	50000	101
2	Achu Raj	Librarian	30000	101
3	Aswin Kumar	Manager	60000	102
4	kavya Anoop	Librarian	25000	102
5	Priya Peter	Manager	55000	103
6	vijay Kumar	Manager	50000	104
7	Pooja Ravi	Librarian	35000	105
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

```
create table Books( ISBN varchar(20) primary key, Book_Title varchar(200), Category varchar (100), Rental_Price decimal (10,2),
Status ENUM ('Yes', 'No '), Author varchar(60), Publisher varchar(100));
insert into Books(ISBN, Book_Title, Category, Rental_Price, Status, Author, Publisher) values
('9788123434798', 'Kannadi  Novel', 20.00, 'Yes', 'Mahakavi Kavi','Orma Books'),
('9788123434804', 'Malayalathile Kathakal','Short Stories', 15.00, 'Yes', 'M. T. Vasudevan Nair','Anupama Productions'),
('9788123434811', 'Sreeramayanam', 'Religious', 30.00, 'No', 'Avanikodi','Prabhashakangal'),
('9788123434828', 'Vedanakalude Pusthakam', 'Poetry', 25.00, 'Yes', 'Balaraman', 'Sahithyam Publishers'),
('9788123434835','Kalidasa','Biography', 18.00, 'Yes','Jijesh', 'Geethanjali'),
('9788123434842', 'Shastriya Malayalam', 'Language', 22.00, 'No', 'Sudhakaran', 'Malavika'),
('9788123434859', 'Ammaude Smaranakal', 'Memoir', 28.00, 'Yes', 'Preethikaran', 'Puthupputhan'),
('9788123434866', 'Keralam Ente Nattu', 'History', 35.00, 'No', 'Narendran', 'Parambaryashree');
select*from Books;
```

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

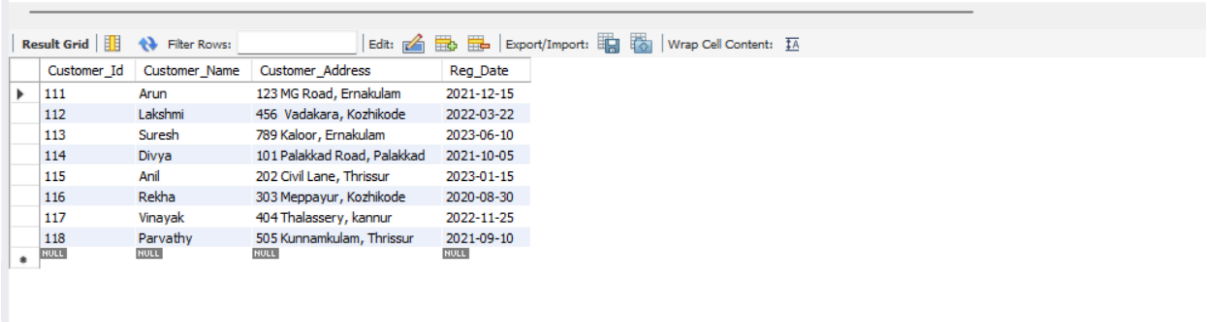
ISBN	Book_Title	Category	Rental_Price	Status	Author	Publisher
9788123434798	Kannadi	Novel	20.00	Yes	Mahakavi Kavi	Orma Books
9788123434804	Malayalathile Kathakal	Short Stories	15.00	Yes	M. T. Vasudevan Nair	Anupama Productions
9788123434811	Sreeramayanam	Religious	30.00	No	Avanikodi	Prabhashakangal
9788123434828	Vedanakalude Pusthakam	Poetry	25.00	Yes	Balaraman	Sahithyam Publishers
9788123434835	Kalidasa	Biography	18.00	Yes	Jijesh	Geethanjali
9788123434842	Shastriya Malayalam	Language	22.00	No	Sudhakaran	Malavika
9788123434859	Ammaude Smaranakal	Memoir	28.00	Yes	Preethikaran	Puthupputhan
9788123434866	Keralam Ente Nattu	History	35.00	No	Narendran	Parambaryashree
NULL	NULL	NULL	NULL	NULL	NULL	NULL

4. Customer

• Customer_Id

- Set as PRIMARY KEY
  • Customer_name
  • Customer_address
  • Reg_date

```
create table Customer( Customer_Id int primary key, Customer_Name varchar(60),  Customer_Address varchar (100), Reg_Date date );
insert into Customer( Customer_Id, Customer_Name, Customer_Adderss,Reg_Date) values
(111, 'Arun', '123 MG Road, Ernakulam ', '2021-12-15'),
(112, 'Lakshmi', '456  Vadakara, Kozhikode' , '2022-03-22'),
(113, 'Suresh', '789 Kaloor, Ernakulam', '2023-06-10'),
(114, 'Divya', '101 Palakkad Road, Palakkad', '2021-10-05'),
(115, 'Anil', '202 Civil Lane, Thrissur', '2023-01-15'),
(116, 'Rekha', '303 Meppayur, Kozhikode', '2020-08-30'),
(117, 'Vinayak', '404 Thalassery, kannur', '2022-11-25'),
(118, 'Parvathy', '505 Kunnamkulam, Thrissur', '2021-09-10');
select*from Customer;
```



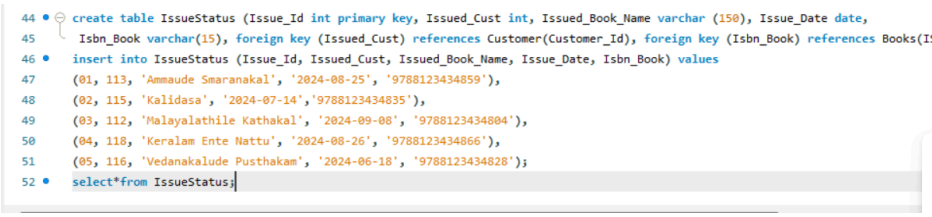
Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

Customer_Id	Customer_Name	Customer_Address	Reg_Date
111	Arun	123 MG Road, Ernakulam	2021-12-15
112	Lakshmi	456 Vadakara, Kozhikode	2022-03-22
113	Suresh	789 Kaloor, Ernakulam	2023-06-10
114	Divya	101 Palakkad Road, Palakkad	2021-10-05
115	Anil	202 Civil Lane, Thrissur	2023-01-15
116	Rekha	303 Meppayur, Kozhikode	2020-08-30
117	Vinayak	404 Thalassery, kannur	2022-11-25
118	Parvathy	505 Kunnamkulam, Thrissur	2021-09-10
NULL	NULL	NULL	NULL

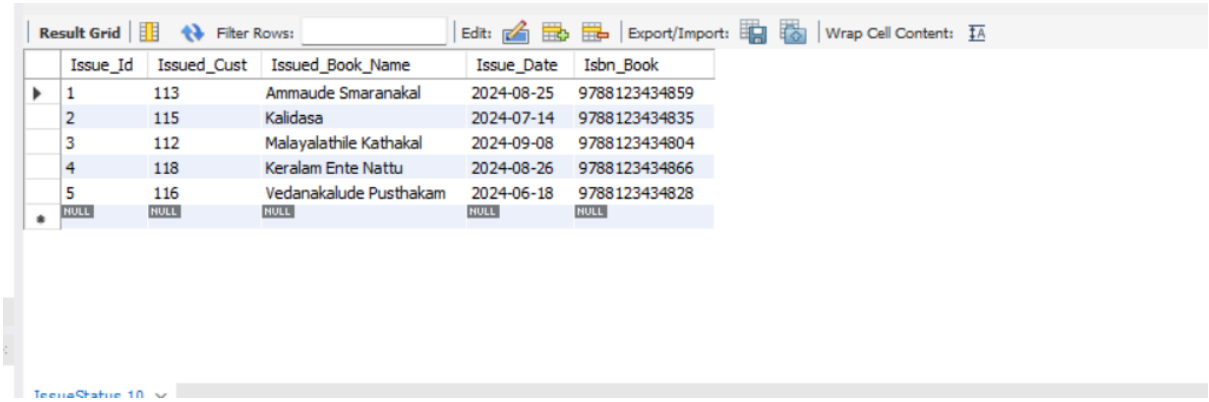
5. IssueStatus

• 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



```
44 • create table IssueStatus (Issue_Id int primary key, Issued_Cust int, Issued_Book_Name varchar (150), Issue_Date date,
45    Isbn_Book varchar(15), foreign key (Issued_Cust) references Customer(Customer_Id), foreign key (Isbn_Book) references Books(ISBN));
46 • insert into IssueStatus (Issue_Id, Issued_Cust, Issued_Book_Name, Issue_Date, Isbn_Book) values
47   (01, 113, 'Ammaude Smaranakal', '2024-08-25', '9788123434859'),
48   (02, 115, 'Kalidasa', '2024-07-14','9788123434835'),
49   (03, 112, 'Malayalathile Kathakal', '2024-09-08', '9788123434804'),
50   (04, 118, 'Keralam Ente Nattu', '2024-08-26', '9788123434866'),
51   (05, 116, 'Vedanakalude Pusthakam', '2024-06-18', '9788123434828');
52 • select*from IssueStatus;
```



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

Issue_Id	Issued_Cust	Issued_Book_Name	Issue_Date	Isbn_Book
1	113	Ammaude Smaranakal	2024-08-25	9788123434859
2	115	Kalidasa	2024-07-14	9788123434835
3	112	Malayalathile Kathakal	2024-09-08	9788123434804
4	118	Keralam Ente Nattu	2024-08-26	9788123434866
5	116	Vedanakalude Pusthakam	2024-06-18	9788123434828
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

```sql
create table ReturnStatus( Return_Id int primary key, Return_Cust int, Return_Book_Name varchar (150),
Return_Date date, Isbn_Books varchar(15),foreign key (Isbn_books) references Books(ISBN));
insert into ReturnStatus( Return_Id, Return_Cust, Return_Book_Name, Return_Date, Isbn_Books) values
(1, 116, 'Vedanakalude Pusthakam', '2024-08-15', '9788123434828'),
(2, 115, 'Kalidasa', '2024-09-01','9788123434835'),
(3, 113, 'Ammaude Smaranakal', '2024-09-20', '9788123434859'),
(4, 118, 'Keralam Ente Nattu', '2024-09-16', '9788123434866');
select*from ReturnStatus;
```

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

Return_Id	Return_Cust	Return_Book_Name	Return_Date	Isbn_Books
1	116	Vedanakalude Pusthakam	2024-08-15	9788123434828
2	115	Kalidasa	2024-09-01	9788123434835
3	113	Ammaude Smaranakal	2024-09-20	9788123434859
4	118	Keralam Ente Nattu	2024-09-16	9788123434866
NULL	NULL	NULL	NULL	NULL

ReturnStatus 11

Display all the tables and Write the queries for the following :

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

```sql
select Book_Title, Category, Rental_Price from Books where Status = 'Yes';
```

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

Book_Title	Category	Rental_Price
Kannadi	Novel	20.00
Malayalathile Kathakal	Short Stories	15.00
Vedanakalude Pusthakam	Poetry	25.00
Kalidasa	Biography	18.00
Ammaude Smaranakal	Memoir	28.00

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

```
62 •  select Emp_Name, Salary from Employee order by Salary desc;
```

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

Emp_Name	Salary
Aswin Kumar	60000
Priya Peter	55000
Vishnu Ravi	50000
vijay Kumar	50000
Pooja Ravi	35000
Achu Raj	30000
kavya Anoop	25000

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

```
63 •  select B.Book_title, C.Customer_Name from Books B
64    join IssueStatus I on B.ISBN = I.Isbn_Book
65    join Customer C on I.Issued_Cust = C.Customer_Id;
```

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

Book_title	Customer_Name
Ammaude Smaranakal	Suresh
Kalidasa	Anil
Malayalathile Kathakal	Lakshmi
Keralam Ente Nattu	Parvathy
Vedanakalude Pusthakam	Rekha

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

```
66 •  select Category, count(*) as TotakBooks from Books group by Category;
```

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

Category	TotakBooks
Novel	1
Short Stories	1
Religious	1
Poetry	1
Biography	1
Language	1
Memoir	1
History	1

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

```
67 •  select Emp_Name, Position from Employee where Salary > 50000;
```

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

Emp_Name	Position
Aswin Kumar	Manager
Priya Peter	Manager

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

```
68 •  select C.Customer_Name from Customer C left join IssueStatus I on C. Customer_Id = I.Issued_Cust
69    where C. Reg_Date < '2022-01-01' and I.Issue_Id is null;
```

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

Customer_Name
Arun
Divya

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

```
70 •  select Branch_No, count(*) as TotalEmployees from Employee group by Branch_No;
```

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

Branch_No	TotalEmployees
101	2
102	2
103	1
104	1
105	1

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

```
71 •  select C.Customer_Name from Customer C join IssueStatus I on C.Customer_Id = I.Issued_Cust
72    where I.Issue_Date between '2024-06-01' and '2024-06-30' ;
```

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

Customer_Name
Rekha

9. Retrieve book_title from book table containing history.

```
73 •  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

```
74 •  select Branch_No, count(*) as TotalEmployees from Employee group by Branch_No having count(*) > 5;
```

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

Branch_No	TotalEmployees

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

```
75 •  select E.Emp_Name, B.Branch_Address from Employee E join Branch B on E.Emp_Id = B.Manager_Id;
```

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

Emp_Name	Branch_Address

Result Grid

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

```
76 •  select C.Customer_Name from Customer C join IssueStatus I on C.Customer_Id = I.Issued_Cust
77    join Books B on I.Isbn_Book = B.ISBN where B.Rental_Price > 25 limit 0,1000;
```

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

Customer_Name
Suresh
Parvathy