**Library Management System**

**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

**SQL SCRIPT**

CREATE DATABASE library;

USE library;

CREATE TABLE Branch (

Branch\_no INT PRIMARY KEY,

Manager\_Id INT,

Branch\_address VARCHAR(255),

Contact\_no VARCHAR(15));

select \*from branch;

CREATE TABLE Employee (

Emp\_Id INT PRIMARY KEY,

Emp\_name VARCHAR(255),

Position VARCHAR(100),

Salary DECIMAL(10, 2),

Branch\_no INT,

FOREIGN KEY (Branch\_no) REFERENCES Branch(Branch\_no));

select \*from employee;

CREATE TABLE Books (

ISBN VARCHAR(13) PRIMARY KEY,

Book\_title VARCHAR(255),

Category VARCHAR(100),

Rental\_Price DECIMAL(10, 2),

Status ENUM('yes', 'no'),

Author VARCHAR(255),

Publisher VARCHAR(255));

select \*from books;

CREATE TABLE Customer (

Customer\_Id INT PRIMARY KEY,

Customer\_name VARCHAR(255),

Customer\_address VARCHAR(255),

Reg\_date DATE);

select \*from customer;

CREATE TABLE IssueStatus (

Issue\_Id INT PRIMARY KEY,

Issued\_cust INT,

Issued\_book\_name VARCHAR(255),

Issue\_date DATE,

Isbn\_book VARCHAR(13),

FOREIGN KEY (Issued\_cust) REFERENCES Customer(Customer\_Id),

FOREIGN KEY (Isbn\_book) REFERENCES Books(ISBN));

select \*from issuestatus;

CREATE TABLE ReturnStatus (

Return\_Id INT PRIMARY KEY,

Return\_cust INT,

Return\_book\_name VARCHAR(255),

Return\_date DATE,

Isbn\_book2 VARCHAR(13),

FOREIGN KEY (Return\_cust) REFERENCES Customer(Customer\_Id),

FOREIGN KEY (Isbn\_book2) REFERENCES Books(ISBN));

select \*from returnstatus;

-- Branch

INSERT INTO Branch (Branch\_no, Manager\_Id, Branch\_address, Contact\_no) VALUES

(1, 101, '123 KL IND', '1234567890'),

(2, 102, '456 TN IND', '2345678901'),

(3, 103, '789 KA IND', '3456789012');

select \*from branch;

-- Employee

INSERT INTO Employee (Emp\_Id, Emp\_name, Position, Salary, Branch\_no) VALUES

(101, 'Alice', 'Manager', 60000, 1),

(104, 'Bob', 'Staff', 45000, 1),

(102, 'Charlie', 'Manager', 70000, 2),

(105, 'David', 'Staff', 50000, 2),

(103, 'Eve', 'Manager', 75000, 3),

(106, 'Roi', 'Staff', 45000, 3),

(107, 'ali', 'Staff', 40000, 3);

select \*from employee;

-- Books

INSERT INTO Books (ISBN, Book\_title, Category, Rental\_Price, Status, Author, Publisher) VALUES

('1234567890123', 'The Sound of Us', 'Fiction', 30, 'yes', 'Sarah Castille ', 'Laura Bradford'),

('2345678901234', 'What Is History', 'History', 25, 'no', 'Edward Hallett Carr', 'University of Cambridge'),

('3456789012345', 'The Life of Galileo', 'Science', 20, 'yes', 'Bertolt Brecht', 'Arcade Publishing'),

('4567890123456', 'Love,Theoretically', 'Romantic', 35, 'yes', 'Ali Hazelwood', 'Penguin Publishing'),

('5678901234567', 'The AI Edge', 'Technology', 40, 'no', 'Anthony Iannarino', 'O-Reilly Media'),

('6789012345678', 'Harry Potter', 'Fiction', 50, 'no', 'J. K. Rowling', 'Bloomsbury'),

('7890123456789', 'India After Gandhi', 'non-fiction', 40, 'yes', 'Ramachandra Guha', 'HarperCollins'),

('8901234567890', 'The Kalki Trilogy', 'Historical Fiction', 70, 'yes', 'Kevin Missal', 'Fingerprint Publishing'),

('9012345678901', 'Generation 14', 'Science Fiction', 50, 'no', 'Priya Sarukkai Chabria', 'Zubaan'),

('0123456789012', 'The God of Small Things', 'Novel', 40, 'no', 'Arundhati Roy', 'RST IndiaInk & Penguin Books');

select \*from books;

-- Customer

INSERT INTO Customer (Customer\_Id, Customer\_name, Customer\_address, Reg\_date) VALUES

(1, 'TOM', 'KL IND', '2020-12-01'),

(2, 'JERRY', 'KA IND', '2021-11-15'),

(3, 'DORA', 'TN IND', '2022-05-20'),

(4, 'JACOB', 'TS IND', '2023-03-10'),

(5, 'CHRISTY', 'DL IND', '2021-01-30');

select \*from customer;

-- Issue Status

INSERT INTO IssueStatus (Issue\_Id, Issued\_cust, Issued\_book\_name, Issue\_date, Isbn\_book) VALUES

(1, 1, 'The Sound of Us', '2020-12-01', '1234567890123'),

(2, 2, 'The Life of Galileo', '2021-11-15', '3456789012345'),

(3, 3, 'Love,Theoretically', '2022-05-20', '4567890123456');

select \*from IssueStatus;

-- Return Status

INSERT INTO ReturnStatus (Return\_Id, Return\_cust, Return\_book\_name, Return\_date, Isbn\_book2) VALUES

(1, 1, 'The Sound of Us', '2021-02-01', '1234567890123'),

(2, 2, 'The Life of Galileo', '2022-02-10', '3456789012345'),

(3, 3, 'Love,Theoretically', '2022-08-15', '4567890123456');

select \*from ReturnStatus;

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

SELECT Book\_title, Category, Rental\_Price

FROM Books

WHERE Status = 'no';

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

SELECT Emp\_name, Salary

FROM Employee

ORDER BY Salary DESC;

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

SELECT Books.Book\_title, Customer.Customer\_name

FROM IssueStatus

JOIN Books ON IssueStatus.Isbn\_book = Books.ISBN

JOIN Customer ON IssueStatus.Issued\_cust = Customer.Customer\_Id;

-- Display the total count of books in each category

SELECT Category, COUNT(\*) AS Total\_Books

FROM Books

GROUP BY Category;

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

SELECT Emp\_name, Position

FROM Employee

WHERE Salary >= 50000;

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

SELECT Customer\_id, Customer\_name, Reg\_date

FROM Customer

WHERE Reg\_date < '2022-01-01'

AND Customer\_Id NOT IN (SELECT Issued\_cust FROM IssueStatus);

-- Display the branch numbers and the total count of employees in each branch

SELECT Branch\_no, COUNT(\*) AS Total\_Employees

FROM Employee

GROUP BY Branch\_no;

-- Display the names of customers who have issued books in the month of 2021-10-01

SELECT DISTINCT Customer.Customer\_name

FROM IssueStatus

JOIN Customer ON IssueStatus.Issued\_cust = Customer.Customer\_Id

WHERE Issue\_date BETWEEN '2021-10-01' AND '2023-06-30';

-- Retrieve book\_title from book table containing history

SELECT Book\_title, Category

FROM Books

WHERE Book\_title LIKE '%history%';

-- Retrieve the branch numbers along with the count of employees for branches having more than 2 employees

SELECT Branch\_no, COUNT(\*) AS Total\_Employees

FROM Employee

GROUP BY Branch\_no

HAVING COUNT(\*) > 2;

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

SELECT Employee.Emp\_name, Employee.position, Branch.Branch\_address

FROM branch

JOIN Employee ON Branch.Manager\_Id = Employee.Emp\_Id;

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

SELECT DISTINCT Customer.Customer\_name, Books.book\_title, Books.rental\_Price

FROM IssueStatus

JOIN Books ON IssueStatus.Isbn\_book = Books.ISBN

JOIN Customer ON IssueStatus.Issued\_cust = Customer.Customer\_Id

WHERE Books.Rental\_Price > 25;

* MY SQL WORKBENCH SCREENSHOTS (GIVEN BELOW)

SCREENSHOTS OF MY SQL WORKBENCH









































