

**MODUE 2 MYSQL PROJECT**  
**LIBRARY MANAGEMENT SYSTEM**

**Topic : Library Management System**

This is 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

CREATE DATABASE LIBRARY;

USE LIBRARY;

**TABLE DESCRIPTION**

**1. Branch**

- Branch\_no

- Set as PRIMARY KEY
  - Manager\_Id
  - Branch\_address
  - Contact\_no

create table branch(

branch\_no int primary key,

manager\_id int,

branch\_address varchar(10),

contact\_no bigint);

**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(10),
    position varchar(10),
    salary int,
    branch_no int,
    FOREIGN KEY (branch_no) REFERENCES branch(branch_no)
);

desc branch;

desc employee;

```

### 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 int,
    book_title varchar(10),
    category varchar(10),
    rental_price int,
    status varchar(10),
    author varchar(10),
    publisher varchar(10));

desc books;

```

#### 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(10),
customer_address varchar(10),
reg_date date);
desc customer;
```

#### 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

```
create table issuestatus(
issue_id int primary key,
issued_cust int,
issued_book_name varchar(10),
issue_date date,
isbn_book int,
foreign key(issued_cust)references customer(customer_id),
foreign key(isbn_book) references books(isbn));
desc issuestatus;
```

## 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(  
    returnid int primary key,  
    return_cust varchar(10),  
    return_book_name varchar(10),  
    return_date date,  
    isbn_book2 int,  
    foreign key(isbn_book2) references books(isbn));  
desc returnstatus;
```

```
insert into branch values(100,200,'ekm',9496903309);  
select * from branch;  
insert into branch values(101,201,'tvm',9387464352);  
insert into branch values(102,202,'klm',9496903381);  
insert into branch values(103,203,'pta',9496903902);  
insert into branch values(104,204,'alp',9496903813);  
insert into branch values(105,205,'ktm',9496903449);  
insert into branch values(106,206,'idukki',9496903698);  
insert into branch values(107,207,'tsr',9496903745);  
insert into branch values(108,208,'kkd',9496903358);  
insert into branch values(109,209,'wnd',9496903667);  
select * from branch;
```

	branch_no	manager_id	branch_address	contact_no
▶	100	200	ekm	9496903309
	101	201	tvm	9387464352
	102	202	klm	9496903381
	103	203	pta	9496903902
	104	204	alp	9496903813
	105	205	ktm	9496903449
	106	206	idukki	9496903698
	107	207	tsr	9496903745
	108	208	kkd	9496903358
	109	209	wnd	9496903667

```

insert into employee values(300,'Vihaan','manager',100000,100);
insert into employee values(301,'Sherin','SeniorManager',200000,101);
insert into employee values(302,'Neauman','StoreKeeper',10000,101);
insert into employee values(303,'Samveda','Clerk',15000,103);
insert into employee values(304,'Rini','Clerk',15000,104);
insert into employee values(305,'Saawan','Accounts Officer',50000,105);
insert into employee values(306,'Sanvi','Security',10000,106);
insert into employee values(307,'Deva','TechnicalAssitant',80000,106);
insert into employee values(308,'Abhinav','Personal Assistant',30000,108);
insert into employee values(309,'Abhinya','Senior Clerk',40000,109);
select * from employee;

```

emp_id	emp_name	position	salary	branch_no
300	Vihaan	manager	100000	100
301	Sherin	SeniorManager	200000	101
302	Neauman	StoreKeeper	10000	101
303	Samve	Neauman	15000	103
304	Rini	Clerk	15000	104
305	Saawan	Accounts Officer	50000	105
306	Sanvi	Security	10000	106
307	Deva	TechnicalAssitant	80000	106
308	Abhinav	Personal Assistant	30000	108
309	Abhinya	Senior Clerk	40000	109
310	Saaagi	SeniorManager	200000	101
311	Neau	StoreKeeper	10000	101
312	Shans	SeniorManager	200000	101
313	Samvy	StoreKeeper	10000	101

```

insert into books values (1000,'Operating Systems','Computer Science',800,'yes','Clavinski','JK');

```

```

insert into books values(1001,'System Software','Computer Science',600,'yes','Jack','Selins');
insert into books values(1002,'Accountancy','Management',800,'no','Clavinski','Hachette');
insert into books values(1003,'Netwok Systems','Computer Science',700,'yes','Selen','Bloomsbury');
insert into books values(1004,'Java','Computer Science',900,'yes','Macbeth','Rupa');
insert into books values(1005,'C++','Computer Science',600,'yes','MaryShelly','Aleph');
insert into books values(1006,'Mechanics','Mechanical',1800,'yes','JohnMilton','SAGE');
insert into books values(1007,'Renewable Energy','Electrical',580,'yes','Ghosh','Westland');
insert into books values(1008,'Cryptography','Computer Science',900,'no','Thomson','HarprColin');
insert into books values(1009,'Python','Computer Science',400,'yes','Jenny','Bloomsbury');
select * from books;

```

isbn	book_title	category	rental_price	status	author	publisher
1000	Operating Systems	Computer Science	800	yes	Clavinski	JK
1001	System Software	Computer Science	600	yes	Jack	Selins
1002	Accountancy	Management	800	no	Clavinski	Hachette
1003	Netwok Systems	Computer Science	700	yes	Selen	Bloomsbury
1004	Java	Computer Science	900	yes	Macbeth	Rupa
1005	C++	Computer Science	600	yes	MaryShelly	Aleph
1006	Mechanics	Mechanical	1800	yes	JohnMilton	SAGE
1007	Renewable Enel	Renewable Energy	580	yes	Ghosh	Westland
1008	Cryptography	Computer Science	900	no	Thomson	HarprColin
1009	Python	Computer Science	400	yes	Jenny	Bloomsbury
1010	Lanka	History	500	yes	Jenny	Bloomsbury

```

insert into customer values(400,'Sarang','Souparnika','1981-02-25');
insert into customer values(401,'Sarang','Gagan','1984-04-26');
insert into customer values(402,'Kumar','Pournami','1989-03-22');
insert into customer values(403,'Ajith','Silver','1987-01-15');
insert into customer values(404,'Ananya','Lagoons','1991-06-15');
insert into customer values(405,'Gaurav','Souparnika','1984-07-10');
insert into customer values(406,'Sayooj','Glen','1986-10-19');
insert into customer values(407,'Binil','Greens','1981-02-25');
insert into customer values(408,'Shenaya','Yaari','1987-11-25');
insert into customer values(409,'Dhyan','Bluelane','1981-11-08');

```

select \* from customer;

customer_id	customer_name	customer_address	reg_date
400	Sarang	Souparnika	1981-02-25
401	Sarang	Gagan	1984-04-26
402	Kumar	Pournami	1989-03-22
403	Ajith	Silver	1987-01-15
404	Ananya	Lagoons	1991-06-15
405	Gaurav	Souparnika	1984-07-10
406	Sayooj	Glen	1986-10-19
407	Binil	Greens	1981-02-25
408	Shenaya	Yaari	1987-11-25
409	Dhyan	Bluelane	1981-11-08

insert into issuestatus values(500,400,'operatingsystems','2024-07-20',1000);

insert into issuestatus values(501,402,'operating systems','2024-07-22',1000);

insert into issuestatus values(502,403,'System Software','2024-07-19',1001);

insert into issuestatus values(503,405,'Accountancy','2024-07-15',1002);

insert into issuestatus values(504,406,'operating systems','2024-07-18',1000);

insert into issuestatus values(505,407,'operating systems','2024-07-07',1000);

insert into issuestatus values(506,400,'Accountancy','2024-07-16',1002);

insert into issuestatus values(507,402,'C++','2024-07-08',1005);

insert into issuestatus values(508,407,'Mechanics','2024-07-30',1006);

insert into issuestatus values(509,407,'Renewable Energy','2024-07-28',1007);

select \* from issuestatus;

issue_id	issued_cust	issued_book_name	issue_date	isbn_book
500	400	operatingsystems	2023-06-20	1000
501	402	operating systems	2024-07-22	1000
502	403	System Software	2024-07-19	1001
503	405	Accountancy	2024-07-15	1002
504	406	operating systems	2023-06-14	1000
505	407	operating systems	2024-07-07	1000
506	400	Accountancy	2023-06-20	1002
507	402	C++	2024-07-08	1005
508	407	Mechanics	2024-07-30	1006
509	407	Renewable Energy	2024-07-28	1007

```

insert into returnstatus values (600,'Sarang','operatingSystems','2024-07-25',1000);
insert into returnstatus values(601,'Kumar','operatingSystems','2024-07-24',1000);
insert into returnstatus values(602,'Ajith','SystemSoftware','2024-07-25',1001);
insert into returnstatus values(603,'Gaurav','Accountancy','2024-07-20',1002);
insert into returnstatus values(604,'Sayooj','operatingSystems','2024-07-25',1000);
insert into returnstatus values(605,'Binil','operatingSystems','2024-07-25',1000);
insert into returnstatus values(606,'Sarang','Accountancy','2024-07-20',1002);
insert into returnstatus values(607,'Kumar','C++','2024-07-15',1005);
insert into returnstatus values(608,'Binil','Mechanics','2024-07-31',1006);
insert into returnstatus values(609,'Binil','Renewable Energy','2024-07-31',1007);
select * from returnstatus;

```

returnid	return_cust	return_book_name	return_date	isbn_book2
600	Sarang	operatingSystems	2024-07-25	1000
601	Kumar	operatingSystems	2024-07-24	1000
602	Ajith	SystemSoftware	2024-07-25	1001
603	Gaurav	Accountancy	2024-07-20	1002
604	Sayooj	operatingSystems	2024-07-25	1000
605	Binil	operatingSystems	2024-07-25	1000
606	Sarang	Accountancy	2024-07-20	1002
607	Kumar	C++	2024-07-15	1005
608	Binil	Mechanics	2024-07-31	1006
609	Binil	Renewable Energy	2024-07-31	1007

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

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

```
select book_title,category,rental_price from books;
```

book_title	category	rental_price
Operating Systems	Computer Science	800
System Software	Computer Science	600
Accountancy	Management	800
Network Systems	Computer Science	900
Java	Computer Science	900
C++	Computer Science	600
Mechanics	Mechanical	1800
Renewable Energy	Electrical	580
Cryptography	Computer Science	900
Python	Computer Science	400
Lanka	History	500

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



Select emp\_name,salary from employee order by salary desc;

emp_name	salary
Sherin	200000
Saaagi	200000
Shans	200000
Vihaan	100000
Deva	80000
Saawan	50000
Abhinya	40000
Abhinav	30000
Samveda	15000
Rini	15000
Neauman	10000
Sanvi	10000
Neau	10000
Samvy	10000

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

select issued\_book\_name,customer\_name from customer,issuestatus where  
customer.customer\_id=issuestatus.issued\_cust;

issued_book_name	customer_name
operatingsystems	Sarang
operating systems	Kumar
System Software	Ajith
Accountancy	Gaurav
operating systems	Sayooj
operating systems	Binil
Accountancy	Sarang
C++	Kumar
Mechanics	Binil
Renewable Energy	Binil

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

select count(book\_title) as Noofbooks,category from books group by category;

Noofbooks	category
7	Computer Science
1	Management
1	Mechanical
1	Electrical
1	History

5. 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;

emp_name	position
Vihaan	manager
Sherin	SeniorManager
Deva	TechnicalAssitant
Saaagi	SeniorManager
Shans	SeniorManager

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

select customer\_name from customer where reg\_date<'2022-01-01' and customer\_id not in(select issued\_cust from issuestatus);

customer_name
Sarang
Ananya
Shenaya
Dhyan

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

select branch.branch\_no,count(employee.emp\_id) as NoofEmployees from branch inner join employee on branch.branch\_no=employee.branch\_no group by employee.branch\_no;

branch_no	NoofEmployees
100	1
101	6
103	1
104	1
105	1
106	2
108	1
109	1

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

select distinct customer.customer\_id,customer.customer\_name from customer inner join issuestatus on customer.customer\_id=issuestatus.issued\_cust and month(issue\_date)=6;

customer_id	customer_name
400	Sarang
406	Sayooj

9. Retrieve book\_title from book table containing history.

select book\_title from books where category='history';

book_title
Lanka

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

select branch\_no,count(emp\_id) as NoofEmployees from employee group by branch\_no having count(emp\_id)>5;

branch_no	NoofEmployees
101	6

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

select emp\_name,branch\_address from employee inner join branch on branch.branch\_no=employee.branch\_no and position in('manager','SeniorManager');

emp_name	branch_address
Vihaan	ekm
Sherin	tvm
Saaagi	tvm
Shans	tvm

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

select distinct customer\_id,customer\_name from customer inner join books inner join issuestatus on customer.customer\_id=issuestatus.issued\_cust

and issuestatus.isbn\_book=books.isbn and rental\_price>=25 order by customer\_id;

customer_id	customer_name
400	Sarang
402	Kumar
403	Ajith
405	Gaurav
406	Sayooj
407	Binil