

Library Management System

We 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

Displaying all the tables

Branch

```
279 • SELECT * FROM branch;
```




Result Grid				
Filter Rows: <input type="text"/>				
Edit:    				
	Branch_no	Manager_Id	Branch_address	Contact_no
▶	1	101	City central,Trivandrum	0471-2345678
	2	201	Clock Tower,Kollam	0471-2345678
	3	301	Kakkand,Ernakulam	0471-2345678
	4	401	Thalassery,Kannur	0471-2345678
	5	501	Mittayi Theruvu,Kozhikode	0471-2345678
*	NULL	NULL	NULL	NULL

Employee

278

279 • `SELECT * FROM employee;`







280

Result Grid					
Filter Rows: <input type="text"/>					
Edit:   					
Export					
Emp_Id	Emp_name	Position	Salary	Branch_no	
106	RAJAN	Security	35000.00	1	
201	GRACE DAVISs	Manager	50000.00	2	
202	WISLON THOMAS	Librarian	30000.00	2	
203	ARUN KUMAR	Clerk	40000.00	2	
301	THOMAS KURIAN	Manager	65000.00	3	
302	SUSHAMMA V	Librarian	62000.00	3	
303	RAMACHANDRAN S	Clerk	48000.00	3	
304	KRISSHNA KUMAR	Accountant	45000.00	3	
305	BALAN CK	Assistant Librarian	48000.00	3	
306	RAJU	Security	26000.00	3	
401	HARIKRISHNAN M	Manager	55000.00	4	
402	NEETHU SURESH	Librarian	45000.00	4	
403	BALACHANDRAN S	Clerk	40000.00	4	

Books

279 • `SELECT * FROM books;`





280

Result Grid						
Filter Rows: <input type="text"/>						
Edit:   						
Export/Import:  						
Wrap Cell Content: 						
ISBN	Book_title	Category	Rental_Price	Status	Author	Publisher
9781234567800	Introduction to Psychology	Psychology	37.75	no	Emma Purple	Psycho Reads
9781234567801	Advanced Python	Technology	41.20	yes	Alice Brown	Code World
9781234567802	Quantum Physics	Science	49.50	no	David Grey	Science Today
9781234567803	Ancient Civilizations	History	20.40	yes	Lisa White	Past Publishers
9781234567804	Business Ethics	Business	28.25	no	Mark Red	Biz House
9781234567805	Behavioral Economics	Economics	43.75	yes	Nina Green	Economic Insights
9781234567806	Philosophical Questions	Philosophy	19.95	yes	Oscar Blue	Thoughtful Press
9781234567807	Calculus II	Mathematics	33.20	no	Tom White	Math Group
9781234567808	Sociology Basics	Social Science	26.85	yes	Anna Brown	Social World
9781234567809	Business Strategies	Business	39.10	yes	Patricia Gold	Strategy Press
9781234567810	Introduction to Machine L...	Technology	44.85	no	Chris Black	ML Corp
9781234567811	World War II	History	24.60	yes	Nancy Grey	History Makers

Customer

```
279 • SELECT * FROM customer;
```






```
280
```

Result Grid  Filter Rows: <input type="text"/> Edit:   				
	Customer_Id	Customer_name	Customer_address	Reg_date
▶	1000	Akhil Menon	Thiruvananthapuram	2020-01-15
	1001	Vishnu Raj	Kochi	2020-03-22
	1002	Ravi Nair	Kollam	2020-05-10
	1003	Deepa Suresh	Thrissur	2020-07-01
	1004	Lekshmi Pillai	Kozhikode	2020-08-18
	1005	Manu Krishnan	Kannur	2020-10-05
	1006	Sreejith Ramesh	Palakkad	2021-01-12
	1007	Anjana Nair	Alappuzha	2021-02-25
	1008	Rakesh Varma	Pathanamthitta	2021-04-30
	1009	Sree Lakshmi	Malappuram	2021-06-15
	1010	Divya Mohan	Idukki	2021-09-05
	1011	Ajith Kumar	Kasaragod	2021-11-20
	1012	Arun Suresh	Kottayam	2022-02-10

IssueStatus

```
279 • SELECT * FROM issuestatus;
```

```
280
```

Result Grid  Filter Rows: <input type="text"/> Edit:    Export/Import: 					
	Issue_Id	Issued_cust	Issued_book_name	Issue_date	Isbn_book
▶	1	1000	Python Programming	2023-06-01	9781234567891
	2	1001	Data Science Handbook	2023-06-05	9781234567892
	3	1002	Machine Learning Basics	2023-06-10	9781234567893
	4	1003	Statistics Essentials	2023-06-15	9781234567894
	6	1005	World History	2023-06-25	9781234567896
	7	1006	Introduction to Philosophy	2023-07-01	9781234567897
	8	1007	Modern Economics	2023-07-05	9781234567898
	9	1008	Digital Marketing	2023-07-10	9781234567899
	10	1009	Introduction to Psychology	2023-07-15	9781234567800
	11	1010	Advanced Python	2023-07-20	9781234567801
	12	1011	Quantum Physics	2023-07-25	9781234567802
	13	1012	Ancient Civilizations	2023-08-01	9781234567803
	14	1013	Business Ethics	2023-08-05	9781234567804
	15	1014	Behavioral Economics	2023-08-10	9781234567805
•	NULL	NULL	NULL	NULL	NULL

ReturnStatus

279

```
279 • SELECT * FROM returnstatus;
```

Result Grid

Filter Rows:

Edit:




Export/Import:

	Return_Id	Return_cust	Return_book_name	Return_date	Isbn_book2
1	1000	Python Programming	2023-07-01	9781234567891	
2	1003	Statistics Essentials	2023-07-20	9781234567894	
3	1005	World History	2023-08-01	9781234567896	
4	1007	Introduction to Philosophy	2023-08-10	9781234567897	
5	1011	Quantum Physics	2023-08-20	9781234567802	
6	1013	Business Ethics	2023-09-01	9781234567804	
	NULL	NULL	NULL	NULL	NULL

Questions and Answer Queries

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

```
186      -- Retrieve the book title, category, and rental price of all available books
187
188 •    SELECT Book_title, Category, Rental_Price
189      FROM Books
190      WHERE Status = 'yes';
191
```

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

	Book_title	Category	Rental_Price
▶	Advanced Python	Technology	41.20
	Ancient Civilizations	History	20.40
	Behavioral Economics	Economics	43.75
	Philosophical Questions	Philosophy	19.95
	Sociology Basics	Social Science	26.85
	Business Strategies	Business	39.10
	World War II	History	24.60
	Linear Algebra	Mathematics	31.40
	Political Science Fundamentals	Social Science	29.95
	Python Programming	Technology	35.00
	Machine Learning Basics	Technology	48.00
	Statistics Essentials	Education	22.50
	World History	History	32.00
	Modern Economics	Economics	45.50
	Digital Marketing	Business	50.25

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

```
--  
192 -- List the employee names and their respective salaries in descending order of salary  
193  
194 • SELECT * FROM employee ORDER BY Salary DESC;
```

Result Grid

Filter Rows:

Edit:

Export/Import:

Wrap Cell Content:

	Emp_Id	Emp_name	Position	Salary	Branch_no
	301	THOMAS KURIAN	Manager	65000.00	3
	302	SUSHAMMA V	Librarian	62000.00	3
	105	VIJAYAN R	Librarian	60000.00	1
	501	SANTHOSH KRISHNAN	Manager	55500.00	5
	401	HARIKRISHNAN M	Manager	55000.00	4
	101	SUKUMARAN S	Manager	50000.00	1
	201	GRACE DAVISs	Manager	50000.00	2
	502	DEEPAK PRADEEP	Librarian	50000.00	5
	303	RAMACHANDRAN S	Clerk	48000.00	3
	305	BALAN CK	Assistant Librarian	48000.00	3
	403	BALAACHANDRAN S	Clerk	48000.00	4
	104	MUHAMMED	Accountant	45000.00	1
	304	KRISSHNA KUMAR	Accountant	45000.00	3
	402	NEETHU SURESH	Librarian	45000.00	4
	102	LALITHA KUMARI	Assistant Librarian	40000.00	1
	203	ARUN KUMAR	Clerk	40000.00	2
	404	SOUMYA RAJENDRAN	Accountant	38000.00	4
	106	RAJAN	Security	35000.00	1
	103	SREENI IMAN	Clerk	30000.00	1

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

```
197      -- Retrieve the book titles and the corresponding customers who have issued those books
198
199 •    SELECT books.Book_title, customer.Customer_name
200      FROM books
201      INNER JOIN issuestatus ON books.ISBN = issuestatus.Isbn_book
202      INNER JOIN customer ON issuestatus.Issued_cust = customer.Customer_Id;
203
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Book_title	Customer_name		
Python Programming	Akhil Menon		
Data Science Handbook	Vishnu Raj		
Machine Learning Basics	Ravi Nair		
Statistics Essentials	Deepa Suresh		
World History	Manu Krishnan		
Introduction to Philosophy	Sreejith Ramesh		
Modern Economics	Anjana Nair		
Digital Marketing	Rakesh Varma		
Introduction to Psychology	Sree Lakshmi		
Advanced Python	Divya Mohan		
Quantum Physics	Ajith Kumar		
Ancient Civilizations	Arya Sivan		
Business Ethics	Nikhil Pradeep		
Behavioral Economics	Revathy Haridas		

4. Display the total count of books in each category

```
204      -- Display the total count of books in each category.
205 •    SELECT Category, COUNT(*) AS Total_Books
206      FROM Books
207      GROUP BY Category;
208
209
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Category	Total_Books		
Psychology	2		
Technology	5		
Science	1		
History	3		
Business	4		
Economics	2		
Philosophy	2		
Mathematics	3		
Social Science	2		
Education	1		

5. Retrieve the employee names and their positions for the employees whose salaries are above 50000

```
210 -- Retrieve the employee names and their positions for the employees whose salaries are above Rs.50,000
211
212 • SELECT Emp_name AS 'Name of Employee' , Position FROM employee WHERE Salary > 50000;
213
```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	Name of Employee	Position			
▶	VIJAYAN R	Librarian			
	THOMAS KURIAN	Manager			
	SUSHAMMA V	Librarian			
	HARIKRISHNAN M	Manager			
	SANTHOSH KRISHNAN	Manager			

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

```
214 -- List the customer names who registered before 2022-01-01 and have not issued any books yet
215 • SELECT Customer_name ,Reg_date AS 'Registered Date'
216 FROM Customer
217 WHERE Reg_date < '2022-01-01'
218 AND Customer_Id NOT IN (
219     SELECT Issued_cust
220     FROM IssueStatus
221 );
```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	Customer_name	Registered Date			
▶	Lekshmi Pillai	2020-08-18			

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

```
223 -- Display the branch numbers and the total count of employees in each branch
224
225 • SELECT Branch_no , COUNT(*) AS 'No of Employees'
226 FROM employee
227 GROUP BY Branch_no;
```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	Branch_no	No of Employees			
▶	1	6			
	2	3			
	3	6			
	4	4			
	5	3			

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

```
229
230 -- Display the names of customers who have issued books in the month of June 2023
231 • SELECT customer.Customer_name
232 FROM issuestatus
233 JOIN customer ON issuestatus.Issued_cust = customer.Customer_Id
234 WHERE Issue_date BETWEEN '2023-06-01' AND '2023-06-30';
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Customer_name			
▶ Akhil Menon			
Vishnu Raj			
Ravi Nair			
Deepa Suresh			
Manu Krishnan			

9. Retrieve book title from book table containing history.

```
237 -- Retrieve book_title from book table containing history
238
239 • SELECT Book_title AS 'Ttile of book About History'
240 FROM books
241 WHERE Category = 'History';
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Ttile of book About History			
▶ Ancient Civilizations			
World War II			
World History			





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

```
244 -- Retrieve the branch numbers along with the count of employees for branches having more than 5 employees
245
246 • SELECT Branch_no, COUNT(*) AS 'Employee Count'
247 FROM employee
248 GROUP BY Branch_no HAVING COUNT(*)>5;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
Branch_no	Employee Count		
▶ 1	6		
3	6		

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




```
251 -- Retrieve the names of employees who manage branches and their respective branch addresses:
252
253 • SELECT employee.Emp_name AS 'Name Of Employee', branch.Branch_address AS 'Branch Address'
254 FROM employee
255 JOIN branch ON employee.Branch_no = branch.Branch_no
256 WHERE employee.Position = 'Manager';
```

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

	Name Of Employee	Branch Address
▶	SUKUMARAN S	City central,Trivandrum
	GRACE DAVISs	Clock Tower,Kollam
	THOMAS KURIAN	Kakkand,Ernakulam
	HARIKRISHNAN M	Thalassery,Kannur
	SANTHOSH KRISHNAN	Mittayi Theruvu,Kozhikode

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

```
260 • SELECT customer.Customer_name AS 'Customers rented books above 25'
261 FROM customer
262 JOIN issuestatus ON customer.Customer_Id = issuestatus.Issued_cust
263 JOIN books ON issuestatus.Isbn_book = books.ISBN
264 WHERE books.Rental_Price > 25;
```

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

	Customers rented books above 25
▶	Sree Lakshmi
	Divya Mohan
	Ajith Kumar
	Nikhil Pradeep
	Revathy Haridas
	Akhil Menon
	Vishnu Raj
	Ravi Nair
	Manu Krishnan
	Anjana Nair
	Rakesh Varma