



LAB ASSIGNMENT

CSET 201

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- Create a fresh database

```
mysql> CREATE DATABASE LibraryManagement;
Query OK, 1 row affected (0.01 sec)

mysql> USE LibraryManagement;
Database changed
mysql>
```

- Create LMS_MEMBERS table

```
mysql> CREATE TABLE LMS_MEMBERS ( Member_ID VARCHAR(10) PRIMARY KEY, Member_Name VARCHAR(50), City VARCHAR(50), Date_Register DATE, Date_Expire DATE, Membership_Status VARCHAR(10));
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO LMS_MEMBERS VALUES ('CS001','Ajay','Delhi','2021-01-02','2021-12-31','EXP01'), ('CS002','Mukul','Lucknow','2022-01-02','2022-12-31','NEXP01'), ('CS003','Rekha','Patna','2022-02-03','2022-12-31','NEXP02'), ('CS004','Rashmi','Ranchi','2021-03-03','2021-12-31','EXP02'), ('CS005','Rahul','Gurugram','2020-01-02','2020-12-31','EXP03');
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM LMS_MEMBERS;
```

Member_ID	Member_Name	City	Date_Register	Date_Expire	Membership_Status
CS001	Ajay	Delhi	2021-01-02	2021-12-31	EXP01
CS002	Mukul	Lucknow	2022-01-02	2022-12-31	NEXP01
CS003	Rekha	Patna	2022-02-03	2022-12-31	NEXP02
CS004	Rashmi	Ranchi	2021-03-03	2021-12-31	EXP02
CS005	Rahul	Gurugram	2020-01-02	2020-12-31	EXP03

5 rows in set (0.00 sec)

- Create LMS_SUPPLIERS_DETAILS table

```
mysql> CREATE TABLE LMS_SUPPLIERS_DETAILS (Supplier_ID VARCHAR(10) PRIMARY KEY, Supplier_Name VARCHAR(100), Address VARCHAR(100), Contact VARCHAR(15), Email VARCHAR(100));
Query OK, 0 rows affected (0.04 sec)

mysql> INSERT INTO LMS_SUPPLIERS_DETAILS VALUES ('X_01','Jaico_1','XYZ_1','70005437','Jaico@gmail.com'), ('X_02','Westland_2','ABC_2','90000231','Westland@gmail.com'), ('X_03','Penguin Random House_3','ASD_3','90000976','Randomhouse@gmail.com'), ('X_04','Hachette India_4','GHJ_4','90000876','Hachette@gmail.com');
Query OK, 4 rows affected (0.02 sec)
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM LMS_SUPPLIERS_DETAILS;
```

Supplier_ID	Supplier_Name	Address	Contact	Email
X_01	Jaico_1	XYZ_1	70005437	Jaico@gmail.com
X_02	Westland_2	ABC_2	90000231	Westland@gmail.com
X_03	Penguin Random House_3	ASD_3	90000976	Randomhouse@gmail.com
X_04	Hachette India_4	GHJ_4	90000876	Hachette@gmail.com

4 rows in set (0.00 sec)

- Create LMS_FINE_DETAILS table

```
mysql> CREATE TABLE LMS_FINE_DETAILS (Fine_Range VARCHAR(10) PRIMARY KEY, Fine_Amount DECIMAL(10,2));
Query OK, 0 rows affected (0.04 sec)

mysql> INSERT INTO LMS_FINE_DETAILS VALUES('R_30',100),('R_20',70),('R_10',20),('R_05',10);
Query OK, 4 rows affected (0.01 sec)
Records: 4 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM LMS_FINE_DETAILS;
+-----+-----+
| Fine_Range | Fine_Amount |
+-----+-----+
| R_05       | 10.00       |
| R_10       | 20.00       |
| R_20       | 70.00       |
| R_30       | 100.00      |
+-----+-----+
4 rows in set (0.00 sec)
```

- Create LMS_BOOK_DETAILS table

```
mysql> CREATE TABLE LMS_BOOK_DETAILS (Book_Code VARCHAR(10) PRIMARY KEY, Book_Title VARCHAR(100), Category VARCHAR(20), Author VARCHAR(50), Publication VARCHAR(50), Publish_Date DATE, Book_Edition VARCHAR(20), Price DECIMAL(10,2), Rack_Num VARCHAR(10), Date_Arrival DATE, Supplier_ID VARCHAR(10));
Query OK, 0 rows affected (0.04 sec)

mysql> INSERT INTO LMS_BOOK_DETAILS VALUES ('BC001','Algorithms_1','ENGG_01','Vander Hussain_1','Springer_1','2021-03-16','1st',238,'CS_11','2021-06-09','X_01'), ('BC003','DataStructures_2','ENGG_02','SKumar_2','CPS_1','2021-05-22','1st',565,'CS_14','2021-08-13','X_02'), ('BC007','Operating Systems_3','ENGG_03','Tchau_3','WPS_1','2021-06-14','1st',654,'CS_16','2021-09-26','X_03'), ('BC012','DBMS_4','ENGG_04','TChen_4','CPS_2','2021-09-21','2nd',709,'CS_08','2022-01-06','X_04'), ('BC018','C/C++_5','ENGG_05','AIMam_5','WS_1','2021-11-26','1st',690,'CS_02','2022-02-11','X_05');
Query OK, 5 rows affected (0.02 sec)
Records: 5 Duplicates: 0 Warnings: 0
```

```
mysql>
```

```
mysql> SELECT * FROM LMS_BOOK_DETAILS;
```

Book_Code	Book_Title	Category	Author	Publication	Publish_Date	Book_Edition	Price	Rack_Num	Date_Arrival	Supplier_ID
BC001	Algorithms_1	ENGG_01	Vander Hussain_1	Springer_1	2021-03-16	1st	238.00	CS_11	2021-06-09	X_01
BC003	DataStructures_2	ENGG_02	SKumar_2	CPS_1	2021-05-22	1st	565.00	CS_14	2021-08-13	X_02
BC007	Operating Systems_3	ENGG_03	Tchau_3	WPS_1	2021-06-14	1st	654.00	CS_16	2021-09-26	X_03
BC012	DBMS_4	ENGG_04	TChen_4	CPS_2	2021-09-21	2nd	789.00	CS_08	2022-01-06	X_04
BC018	C/C++_5	ENGG_05	AIImam_5	WS_1	2021-11-26	1st	690.00	CS_02	2022-02-11	X_05

```
5 rows in set (0.01 sec)
```

- Create LMS_BOOK_ISSUE table

```
mysql> CREATE TABLE LMS_BOOK_ISSUE (Book_Issue_No INT PRIMARY KEY,Member_ID
VARCHAR(10),Book_Code VARCHAR(10),Date_Issue DATE,Date_Return DATE,Date_Retu
rned DATE,Book_Issue_Status VARCHAR(15), Fine_Range VARCHAR(10),FOREIGN KEY
(Member_ID) REFERENCES LMS_MEMBERS(Member_ID), FOREIGN KEY (Book_Code) REFER
ENCES LMS_BOOK_DETAILS(Book_Code),FOREIGN KEY (Fine_Range) REFERENCES LMS_FI
NE_DETAILS(Fine_Range));
Query OK, 0 rows affected (0.08 sec)
```

```
mysql> INSERT INTO LMS_BOOK_ISSUE VALUES
-> (1001,'CS001','BC001','2022-02-02','2022-02-27','2022-02-27','Y01','R_
_30'),
-> (1002,'CS002','BC003','2022-02-10','2022-02-25','2022-02-25','Y02','R
_10'),
-> (103,'CS003','BC007','2022-03-11','2022-04-03','2022-04-03','Y03','R_
30'),
-> (104,'CS004','BC012','2022-04-02','2022-04-17','2022-04-17','Y04','R_
30'),
-> (105,'CS005','BC018','2022-04-12','2022-05-12','2022-05-12','Y05','R_
30');
Query OK, 5 rows affected (0.01 sec)
Records: 5 Duplicates: 0 Warnings: 0
```

```
mysql> SELECT * FROM LMS_BOOK_ISSUE;
```

Book_Issue_No	Member_ID	Book_Code	Date_Issue	Date_Return	Date_Returned	Book_Issue_Status	Fine_Range
103	CS003	BC007	2022-03-11	2022-04-03	2022-04-03	Y03	R_30
104	CS004	BC012	2022-04-02	2022-04-17	2022-04-17	Y04	R_30
105	CS005	BC018	2022-04-12	2022-05-12	2022-05-12	Y05	R_30
1001	CS001	BC001	2022-02-02	2022-02-27	2022-02-27	Y01	R_30
1002	CS002	BC003	2022-02-10	2022-02-25	2022-02-25	Y02	R_10

```
5 rows in set (0.00 sec)
```

ASSIGNMENT QUERIES

1. Display the total number of members grouped by their Membership_Status.

```
mysql> SELECT Membership_Status, COUNT(*) AS Total_Members FROM LMS_MEMBERS GROUP BY Membership_Status;
```

Membership_Status	Total_Members
EXP01	1
NEXP01	1
NEXP02	1
EXP02	1
EXP03	1

5 rows in set (0.00 sec)

2. Find the average price of books grouped by Category.

```
mysql> SELECT Category, AVG(Price) AS Average_Price FROM LMS_BOOK_DETAILS GROUP BY Category;
```

Category	Average_Price
ENGG_01	238.000000
ENGG_02	565.000000
ENGG_03	654.000000
ENGG_04	709.000000
ENGG_05	690.000000

5 rows in set (0.00 sec)

3. Display the supplier name and number of books supplied (use COUNT and GROUP BY).

```
mysql> SELECT s.Supplier_Name, COUNT(b.Book_Code) AS Books_Supplied FROM LMS_SUPPLIERS_DETAILS s JOIN LMS_BOOK_DETAILS b ON s.Supplier_ID = b.Supplier_ID GROUP BY s.Supplier_Name;
```

Supplier_Name	Books_Supplied
Jaico_1	1
Westland_2	1
Penguin Random House_3	1
Hachette India_4	1

4 rows in set (0.00 sec)

4. Display the names of authors whose books cost more than Rs. 500, ordered from highest to lowest price

```
mysql> SELECT Author, Price FROM LMS_BOOK_DETAILS WHERE Price > 500 ORDER BY Price DESC;
```

Author	Price
TChen_4	709.00
AIamam_5	690.00
Tchau_3	654.00
SKumar_2	565.00

4 rows in set (0.00 sec)

5. Show all book titles where the Book_Title ends with the letter 'a'.

```
mysql> SELECT Book_Title FROM LMS_BOOK_DETAILS WHERE Book_Title LIKE '%a';
```

Empty set (0.00 sec)

6. Display the member name and expiry date of those whose membership expires in the year 2022.

```
mysql> SELECT Member_Name, Date_Expire FROM LMS_MEMBERS WHERE YEAR(Date_Expire) = 2022;
```

Member_Name	Date_Expire
Mukul	2022-12-31
Rekha	2022-12-31

2 rows in set (0.00 sec)

7. Find the maximum and minimum book price from LMS_BOOK_DETAILS.

```
mysql> SELECT MAX(Price) AS Max_Price, MIN(Price) AS Min_Price FROM LMS_BOOK_DETAILS;
+-----+-----+
| Max_Price | Min_Price |
+-----+-----+
| 709.00 | 238.00 |
+-----+-----+
1 row in set (0.00 sec)
```

8. Display the Member_Name along with their Fine_Range where fine amount is greater than 50.

```
mysql> SELECT m.Member_Name, b.Fine_Range FROM LMS_MEMBERS m JOIN LMS_BOOK_ISSUE b ON m.Member_ID = b.Member_ID JOIN LMS_BOOK_ISSUE b ON m.Member_ID = b.Member_ID WHERE f.Fine_Amount > 50;
ERROR 1066 (42000): Not unique table/alias: 'b'
mysql> SELECT m.Member_Name, b.Fine_Range
-> FROM LMS_MEMBERS m
-> JOIN LMS_BOOK_ISSUE b ON m.Member_ID = b.Member_ID
-> JOIN LMS_FINE_DETAILS f ON b.Fine_Range = f.Fine_Range
-> WHERE f.Fine_Amount > 50;
+-----+-----+
| Member_Name | Fine_Range |
+-----+-----+
| Rekha       | R_30       |
| Rashmi      | R_30       |
| Rahul       | R_30       |
| Ajay        | R_30       |
+-----+-----+
4 rows in set (0.00 sec)
```

9. Show the first 3 books from LMS_BOOK_DETAILS sorted by Publish_Date.

```
mysql> SELECT * FROM LMS_BOOK_DETAILS ORDER BY Publish_Date LIMIT 3;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| Book_Code | Book_Title | Category | Author | Publication | Publish_Date | Book_Edition | Price | Rack_Num | Date_Arrival | Supplier_ID |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| BC001 | Algorithms_1 | ENGG_01 | Vander Hussain_1 | Springer_1 | 2021-03-16 | 1st | 238.00 | CS_11 | 2021-06-09 | X_01 |
| BC003 | DataStructures_2 | ENGG_02 | SKumar_2 | CPS_1 | 2021-05-22 | 1st | 565.00 | CS_14 | 2021-08-13 | X_02 |
| BC007 | Operating Systems_3 | ENGG_03 | Tchau_3 | WPS_1 | 2021-06-14 | 1st | 654.00 | CS_16 | 2021-09-26 | X_03 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

10. Create a new column Book_Info by concatenating (Book_Title, Author, and Publication) into a single field.

```
mysql> SELECT CONCAT(Book_Title, ' - ', Author, ' - ', Publication) AS Book_Info FROM LMS_BOOK_DETAILS;
+-----+
| Book_Info |
+-----+
| Algorithms_1 - Vander Hussain_1 - Springer_1 |
| DataStructures_2 - SKumar_2 - CPS_1 |
| Operating Systems_3 - Tchau_3 - WPS_1 |
| DBMS_4 - TChen_4 - CPS_2 |
| C/C++_5 - Alimam_5 - WS_1 |
+-----+
5 rows in set (0.00 sec)

mysql> |
```