



LAB ASSIGNMENT

CSET 201

TANYA GUPTA S24CSEU0073

- 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_N
ame VARCHAR(50), City VARCHAR(50), Date_Register DATE, Date_Expire DATE, Member
ship_Status VARCHAR(10));
Query OK, 0 rows affected (0.03 sec)

mysql> INSERT INTO LMS_MEMBERS VALUES ('CS001', 'Ajay', 'Delhi', '2021-01-02', '2
021-12-31', '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 K
EY, 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', '7
0005437', 'Jaico@gmail.com'), ('X_02', 'Westland_2', 'ABC_2', '90000231', 'Westlan
d@gmail.com'), ('X_03', 'Penguin Random House_3', 'ASD_3', '90000976', 'Randomhou
se@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> |
```

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	709.00	CS_08	2022-01-06	X_04
BC018	C/C++_5	ENGG_05	AImam_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_Retuned DATE, Book_Issue_Status VARCHAR(15), Fine_Range VARCHAR(10), FOREIGN KEY (Member_ID) REFERENCES LMS_MEMBERS(Member_ID), FOREIGN KEY (Book_Code) REFERENCES LMS_BOOK_DETAILS(Book_Code), FOREIGN KEY (Fine_Range) REFERENCES LMS_FINE_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_Retuned | 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 |
| AImam_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_FINE_DETAILS f ON b.Fine_Range = f.Fine_Range 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 - TCChen_4 - CPS_2                     |
| C/C++_5 - AImam_5 - WS_1                      |
+-----+
5 rows in set (0.00 sec)

mysql> |

```