DBMSL PROJECT

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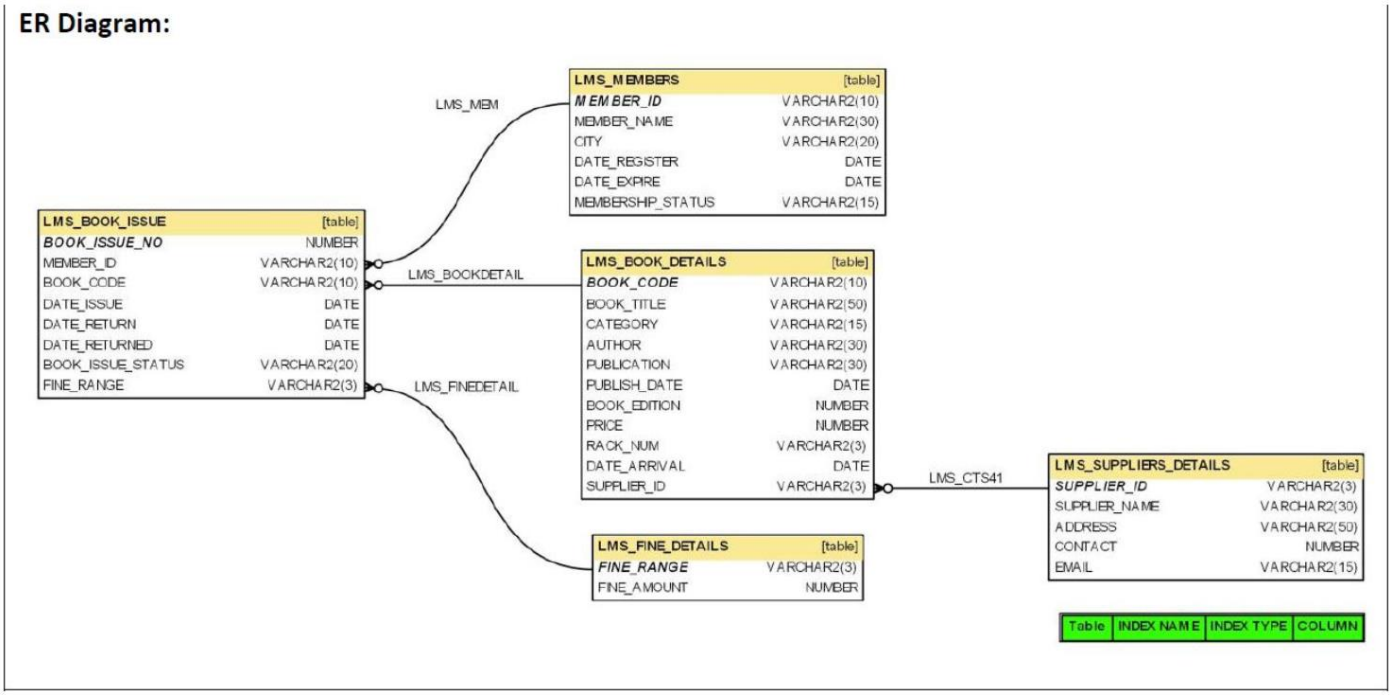
Problem Scenario:

This Scenario is to develop a Library Management System (LMS) to store information of the members, books, status of books issue, book availability and suppliers details.

List of Tables:

Table #1: LMS_MEMBERS
Table #2: LMS_SUPPLIERS_DETAILS
Table #3: LMS_FINE_DETAILS
Table #4: LMS_BOOK_DETAILS
Table #5: LMS_BOOK_ISSUE

ER Diagram:



MySQL 8.0 Command Line Client

```
Enter password: **********
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 10
Server version: 8.0.21 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| hr                 |
| information_schema |
| lms_db             |
| mysql              |
| office             |
| performance_schema |
| sakila             |
| sys                |
| tea1db             |
| world              |
+--------------------+
10 rows in set (0.07 sec)

mysql> drop lms_db;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'lms_db' at line 1
mysql> drop database lms_db;
Query OK, 7 rows affected (0.13 sec)
```

```
mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| hr                 |
| information_schema |
| mysql              |
| office             |
| performance_schema |
| sakila             |
| sys                |
| tea1db             |
| world              |
+--------------------+
9 rows in set (0.00 sec)

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

```
mysql> Create table LMS_MEMBERS
    -> 
    -> (
    -> 
    -> MEMBER_ID Varchar(10),
    -> 
    -> MEMBER_NAME Varchar(30) NOT NULL,
    -> 
    -> CITY Varchar(20),
    -> 
    -> DATE_REGISTER Date NOT NULL,
    -> 
    -> DATE_EXPIRE Date ,
    -> 
    -> MEMBERSHIP_STATUS Varchar(15)NOT NULL,
    -> 
    -> Constraint LMS_cts1 PRIMARY KEY(MEMBER_ID)
    -> 
    -> );
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> Create table LMS_SUPPLIERS_DETAILS
    ->
    -> (
    ->
    -> SUPPLIER_ID Varchar(3),
    ->
    -> SUPPLIER_NAME Varchar(30) NOT NULL,
    ->
    -> ADDRESS Varchar(50),
    ->
    -> CONTACT bigint(10) NOT NULL,
    ->
    -> EMAIL Varchar(15) NOT NULL,
    ->
    -> Constraint LMS_cts2 PRIMARY KEY(SUPPLIER_ID)
    ->
    -> );
Query OK, 0 rows affected, 1 warning (0.03 sec)
```

```
mysql>
mysql> Create table LMS_FINE_DETAILS
    ->
    -> (
    ->
    -> FINE_RANGE Varchar(3),
    ->
    -> FINE_AMOUNT decimal(10,2) NOT NULL,
    ->
    -> Constraint LMS_cts3 PRIMARY KEY(FINE_RANGE)
    ->
    -> );
Query OK, 0 rows affected (0.05 sec)
```

```
mysql>
mysql>
mysql> Create table LMS_BOOK_DETAILS
    ->
    -> (
    ->
    -> BOOK_CODE Varchar(10),
    ->
    -> BOOK_TITLE Varchar(50) NOT NULL,
    ->
    -> CATEGORY Varchar(15) NOT NULL,
    ->
    -> AUTHOR Varchar(30) NOT NULL,
    ->
    -> PUBLICATION Varchar(30),
    ->
    -> PUBLISH_DATE Date,
    ->
    -> BOOK_EDITION int(2),
    ->
    -> PRICE decimal(8,2) NOT NULL,
    ->
    -> RACK_NUM Varchar(3),
    ->
    -> DATE_ARRIVAL Date NOT NULL,
    ->
    -> SUPPLIER_ID Varchar(3) NOT NULL,
    ->
    -> Constraint LMS_cts4 PRIMARY KEY(BOOK_CODE),
    ->
    -> Constraint LMS_cts41 FOREIGN KEY(SUPPLIER_ID) References LMS_SUPPLIERS_DETAILS(SUPPLIER_ID)
    ->
    -> );
Query OK, 0 rows affected, 1 warning (0.04 sec)
```

```
mysql> Create table LMS_BOOK_ISSUE
    ->
    -> (
    ->
    -> BOOK_ISSUE_NO int,
    ->
    -> MEMBER_ID Varchar(10) NOT NULL,
    ->
    -> BOOK_CODE Varchar(10) NOT NULL,
    ->
    -> DATE_ISSUE Date NOT NULL,
    ->
    -> DATE_RETURN Date NOT NULL,
    ->
    -> DATE_RETURNED Date NULL,
    ->
    -> FINE_RANGE Varchar(3),
    ->
    -> Constraint LMS_cts5 PRIMARY KEY(BOOK_ISSUE_NO),
    ->
    -> Constraint LMS_Mem FOREIGN KEY(MEMBER_ID) References LMS_MEMBERS(MEMBER_ID),
    ->
    -> Constraint LMS_BookDetail FOREIGN KEY(BOOK_CODE) References LMS_BOOK_DETAILS(BOOK_CODE),
    ->
    -> Constraint LMS_FineDetail FOREIGN KEY(FINE_RANGE) References LMS_FINE_DETAILS(FINE_RANGE)
    ->
    -> );
Query OK, 0 rows affected (0.06 sec)
```

```
mysql>
mysql> Insert into LMS_MEMBERS
    ->
    -> Values('LM001', 'AMIT', 'CHENNAI', '2012-02-12', '2013-02-11','Temporary');
Query OK, 1 row affected (0.01 sec)

mysql>
mysql> Insert into LMS_MEMBERS
    ->
    -> Values('LM002', 'ABDHUL', 'DELHI', '2012-04-10', '2013-04-09','Temporary');
Query OK, 1 row affected (0.01 sec)

mysql>
mysql> Insert into LMS_MEMBERS
    ->
    -> Values('LM003', 'GAYAN', 'CHENNAI', '2012-05-13','2013-05-12', 'Permanent');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_MEMBERS
    ->
    -> Values('LM004', 'RADHA', 'CHENNAI', '2012-04-22', '2013-04-21', 'Temporary');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_MEMBERS
    ->
    -> Values('LM005', 'GURU', 'BANGALORE', '2012-03-30', '2013-05-16','Temporary');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_MEMBERS
    ->
    -> Values('LM006', 'MOHAN', 'CHENNAI', '2012-04-12', '2013-05-16','Temporary');
Query OK, 1 row affected (0.01 sec)
```

```
mysql>
mysql> select * from lms_members;
+-----------+-------------+-----------+---------------+-------------+-------------------+
| MEMBER_ID | MEMBER_NAME | CITY      | DATE_REGISTER | DATE_EXPIRE | MEMBERSHIP_STATUS |
+-----------+-------------+-----------+---------------+-------------+-------------------+
| LM001     | AMIT        | CHENNAI   | 2012-02-12    | 2013-02-11  | Temporary         |
| LM002     | ABDHUL      | DELHI     | 2012-04-10    | 2013-04-09  | Temporary         |
| LM003     | GAYAN       | CHENNAI   | 2012-05-13    | 2013-05-12  | Permanent         |
| LM004     | RADHA       | CHENNAI   | 2012-04-22    | 2013-04-21  | Temporary         |
| LM005     | GURU        | BANGALORE | 2012-03-30    | 2013-05-16  | Temporary         |
| LM006     | MOHAN       | CHENNAI   | 2012-04-12    | 2013-05-16  | Temporary         |
+-----------+-------------+-----------+---------------+-------------+-------------------+
6 rows in set (0.00 sec)

mysql>
mysql>
mysql> Insert into LMS_SUPPLIERS_DETAILS
    ->
    -> Values ('S01','SINGAPORE SHOPPEE', 'CHENNAI', 9894123555,'sing@gmail.com');
Query OK, 1 row affected (0.01 sec)

mysql>
mysql> Insert into LMS_SUPPLIERS_DETAILS
    ->
    -> Values ('S02','JK Stores', 'MUMBAI', 9940123450 ,'jks@yahoo.com');
Query OK, 1 row affected (0.01 sec)

mysql>
mysql> Insert into LMS_SUPPLIERS_DETAILS
    ->
    -> Values ('S03','ROSE BOOK STORE', 'TRIVANDRUM', 9444411222,'rose@gmail.com');
Query OK, 1 row affected (0.01 sec)
```

```
mysql> Insert into LMS_SUPPLIERS_DETAILS
    ->
    -> Values ('S04','KAVARI STORE', 'DELHI', 8630001452,'kavi@redif.com');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_SUPPLIERS_DETAILS
    ->
    -> Values ('S05','EINSTEN BOOK GALLARY', 'US', 9542000001,'eingal@aol.com');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_SUPPLIERS_DETAILS
    ->
    -> Values ('S06','AKBAR STORE', 'MUMBAI',7855623100 ,'akbakst@aol.com');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> select * from LMS_SUPPLIERS_DETAILS;
+-------------+----------------------+------------+------------+-----------------+
| SUPPLIER_ID | SUPPLIER_NAME        | ADDRESS    | CONTACT    | EMAIL           |
+-------------+----------------------+------------+------------+-----------------+
| S01         | SINGAPORE SHOPPEE    | CHENNAI    | 9894123555 | sing@gmail.com  |
| S02         | JK Stores            | MUMBAI     | 9940123450 | jks@yahoo.com   |
| S03         | ROSE BOOK STORE      | TRIVANDRUM | 9444411222 | rose@gmail.com  |
| S04         | KAVARI STORE         | DELHI      | 8630001452 | kavi@redif.com  |
| S05         | EINSTEN BOOK GALLARY | US         | 9542000001 | eingal@aol.com  |
| S06         | AKBAR STORE          | MUMBAI     | 7855623100 | akbakst@aol.com |
+-------------+----------------------+------------+------------+-----------------+
6 rows in set (0.00 sec)
```

```
mysql> Insert into LMS_FINE_DETAILS Values('R0', 0);
Query OK, 1 row affected (0.01 sec)

mysql>
mysql> Insert into LMS_FINE_DETAILS Values('R1', 20);
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> insert into LMS_FINE_DETAILS Values('R2', 50);
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_FINE_DETAILS Values('R3', 75);
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_FINE_DETAILS Values('R4', 100);
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_FINE_DETAILS Values('R5', 150);
Query OK, 1 row affected (0.01 sec)

mysql>
mysql> Insert into LMS_FINE_DETAILS Values('R6', 200);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> select * from LMS_FINE_DETAILS;
+------------+-------------+
| FINE_RANGE | FINE_AMOUNT |
+------------+-------------+
| R0         |        0.00 |
| R1         |       20.00 |
| R2         |       50.00 |
| R3         |       75.00 |
| R4         |      100.00 |
| R5         |      150.00 |
| R6         |      200.00 |
+------------+-------------+
7 rows in set (0.00 sec)

mysql>
mysql>
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000010', 'Java ForvDummies', 'JAVA', 'Paul J. Deitel', 'Prentice Hall', '1999-12-10', 6, 575.00, 'A1', '2011-05-10', 'S01');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000002', 'Java: The Complete Reference ', 'JAVA', 'Herbert Schildt', 'Tata Mcgraw Hill ', '2011-10-10', 5, 750.00, 'A1', '2011-05-10', 'S03');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000003', 'Java How To Do Program', 'JAVA', 'Paul J. Deitel', 'Prentice Hall', '1999-05-10', 6, 600.00, 'A1', '2012-05-10', 'S01');
Query OK, 1 row affected (0.00 sec)
```

```
mysql>
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000004', 'Java: The Complete Reference ', 'JAVA', 'Herbert Schildt', 'Tata Mcgraw Hill ', '2011-10-10', 5, 750.00, 'A1', '2012-05-11', 'S01');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000005', 'Java How To Do Program', 'JAVA', 'Paul J. Deitel', 'Prentice Hall', '1999-12-10', 6, 600.00, 'A1', '2012-05-11', 'S01');
Query OK, 1 row affected (0.01 sec)

mysql>
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000006', 'Java: The Complete Reference ', 'JAVA', 'Herbert Schildt', 'Tata Mcgraw Hill ', '2011-10-10', 5, 750.00, 'A1', '2012-05-12', 'S03');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000007', 'Let Us C', 'C', 'Yashavant Kanetkar ', 'BPB Publications', '2010-12-11', 9, 500.00 , 'A3', '2010-11-03', 'S03');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000008', 'Let Us C', 'C', 'Yashavant Kanetkar ','BPB Publications', '2010-05-12', 9, 500.00 , 'A3', '2011-08-09', 'S04');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000009', 'Let Us C#', 'C', 'Yashavant Kanetkar ','BPB Publications', '2010-05-12', 9, 550.00 , 'A3', '2011-08-09', 'S04');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000009', 'Let Us C#', 'C', 'Yashavant Kanetkar ','BPB Publications', '2010-05-12', 9, 550.00 , 'A3', '2011-08-09', 'S04');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_BOOK_DETAILS
    ->
    -> Values('BL000011', 'Let Us C++', 'C', 'Yashavant Kanetkar ','BPB Publications', '2010-05-12', 9, 650.00 , 'A3', '2011-08-09', 'S04');
Query OK, 1 row affected (0.00 sec)

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 |
+-----------+-----------------------------+----------+-------------------+-----------------+--------------+--------------+--------+----------+--------------+-------------+
| BL000002  | Java: The Complete Reference | JAVA     | Herbert Schildt   | Tata Mcgraw Hill | 2011-10-10   |            5 | 750.00 | A1       | 2011-05-10   | S03         |
| BL000003  | Java How To Do Program      | JAVA     | Paul J. Deitel    | Prentice Hall   | 1999-05-10   |            6 | 600.00 | A1       | 2012-05-10   | S01         |
| BL000004  | Java: The Complete Reference | JAVA     | Herbert Schildt   | Tata Mcgraw Hill | 2011-10-10   |            5 | 750.00 | A1       | 2012-05-11   | S01         |
| BL000005  | Java How To Do Program      | JAVA     | Paul J. Deitel    | Prentice Hall   | 1999-12-10   |            6 | 600.00 | A1       | 2012-05-11   | S01         |
| BL000006  | Java: The Complete Reference | JAVA     | Herbert Schildt   | Tata Mcgraw Hill | 2011-10-10   |            5 | 750.00 | A1       | 2012-05-12   | S03         |
| BL000007  | Let Us C                    | C        | Yashavant Kanetkar | BPB Publications | 2010-12-11   |            9 | 500.00 | A3       | 2010-11-03   | S03         |
| BL000008  | Let Us C                    | C        | Yashavant Kanetkar | BPB Publications | 2010-05-12   |            9 | 500.00 | A3       | 2011-08-09   | S04         |
| BL000009  | Let Us C#                   | C        | Yashavant Kanetkar | BPB Publications | 2010-05-12   |            9 | 550.00 | A3       | 2011-08-09   | S04         |
| BL000010  | Java ForvDummies            | JAVA     | Paul J. Deitel    | Prentice Hall   | 1999-12-10   |            6 | 575.00 | A1       | 2011-05-10   | S01         |
| BL000011  | Let Us C++                  | C        | Yashavant Kanetkar | BPB Publications | 2010-05-12   |            9 | 650.00 | A3       | 2011-08-09   | S04         |
+-----------+-----------------------------+----------+-------------------+-----------------+--------------+--------------+--------+----------+--------------+-------------+
10 rows in set (0.00 sec)
```

```
mysql>
mysql> Insert into LMS_BOOK_ISSUE
    ->
    -> Values (001, 'LM001', 'BL000010', '2012-05-01', '2012-05-16', '2012-05-16', 'R0');
Query OK, 1 row affected (0.01 sec)

mysql>
mysql> Insert into LMS_BOOK_ISSUE
    ->
    -> Values (002, 'LM002', 'BL000002', '2012-05-01', '2012-05-06','2012-05-16', 'R2');
Query OK, 1 row affected (0.01 sec)

mysql>
mysql> Insert into LMS_BOOK_ISSUE
    ->
    -> Values (003, 'LM003', 'BL000007', '2012-04-01', '2012-04-16', '2012-04-20','R1');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_BOOK_ISSUE
    ->
    -> Values (004, 'LM004', 'BL000005', '2012-04-01', '2012-04-16','2012-04-20', 'R1');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_BOOK_ISSUE
    ->
    -> Values (005, 'LM005', 'BL000008', '2012-03-30', '2012-04-15','2012-04-20' , 'R1');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> Insert into LMS_BOOK_ISSUE
    ->
    -> Values (006, 'LM005', 'BL000008', '2012-04-20', '2012-05-05','2012-05-05' , 'R0');
Query OK, 1 row affected (0.00 sec)
```

```
mysql>
mysql> Insert into LMS_BOOK_ISSUE
    ->
    -> Values (007, 'LM003', 'BL000007', '2012-04-22', '2012-05-07','2012-05-25' , 'R4');
Query OK, 1 row affected (0.00 sec)

mysql>
mysql> select * from LMS_BOOK_ISSUE ;
+---------------+-----------+-----------+------------+-------------+---------------+------------+
| BOOK_ISSUE_NO | MEMBER_ID | BOOK_CODE | DATE_ISSUE | DATE_RETURN | DATE_RETURNED | FINE_RANGE |
+---------------+-----------+-----------+------------+-------------+---------------+------------+
|             1 | LM001     | BL000010  | 2012-05-01 | 2012-05-16  | 2012-05-16    | R0         |
|             2 | LM002     | BL000002  | 2012-05-01 | 2012-05-06  | 2012-05-16    | R2         |
|             3 | LM003     | BL000007  | 2012-04-01 | 2012-04-16  | 2012-04-20    | R1         |
|             4 | LM004     | BL000005  | 2012-04-01 | 2012-04-16  | 2012-04-20    | R1         |
|             5 | LM005     | BL000008  | 2012-03-30 | 2012-04-15  | 2012-04-20    | R1         |
|             6 | LM005     | BL000008  | 2012-04-20 | 2012-05-05  | 2012-05-05    | R0         |
|             7 | LM003     | BL000007  | 2012-04-22 | 2012-05-07  | 2012-05-25    | R4         |
+---------------+-----------+-----------+------------+-------------+---------------+------------+
7 rows in set (0.00 sec)
```

Problem 1:

Write a query to display the member id, member name of the members, book code and book title of the books taken by them.

```
mysql> select MEMBER_ID,(select MEMBER_NAME
    -> from LMS_MEMBERS where MEMBER_ID=t1.MEMBER_ID )
    -> as MEMBER_NAME,BOOK_CODE,(select BOOK_TITLE
    -> from LMS_BOOK_DETAILS
    -> where BOOK_CODE=t1.BOOK_CODE)as BOOK_TITLE from LMS_BOOK_ISSUE t1
    -> ;
+-----------+-------------+-----------+--------------------------------+
| MEMBER_ID | MEMBER_NAME | BOOK_CODE | BOOK_TITLE                     |
+-----------+-------------+-----------+--------------------------------+
| LM001     | AMIT        | BL000010  | Java ForvDummies               |
| LM002     | ABDHUL      | BL000002  | Java: The Complete Reference   |
| LM003     | GAYAN       | BL000007  | Let Us C                       |
| LM004     | RADHA       | BL000005  | Java How To Do Program         |
| LM005     | GURU        | BL000008  | Let Us C                       |
| LM005     | GURU        | BL000008  | Let Us C                       |
| LM003     | GAYAN       | BL000007  | Let Us C                       |
+-----------+-------------+-----------+--------------------------------+
7 rows in set (0.00 sec)
```

Problem 2:

Write a query to display the total number of books available in the library with alias name "NO_OF_BOOKS_AVAILABLE" (Which is not issued). Hint: The issued books details are available in the LMS_BOOK_ISSUE table.

```
ERROR 1054 (42S22): Unknown column 'book_title' in 'field list'
mysql> select count(book_code)no_books_available
    ->
    -> from lms_book_details
    ->
    -> where book_code not in (select book_code from lms_book_issue);
+--------------------+
| no_books_available |
+--------------------+
|                  5 |
+--------------------+
1 row in set (0.00 sec)
```

Problem 3:

Write a query to display the member id, member name, fine range and fine amount of the members whose fine amount is less than 100.

```
mysql> select m.member_id,m.member_name,f.fine_range,sum(f.fine_amount)
    ->
    -> from lms_members m
    ->
    -> join
    ->
    -> lms_fine_details f
    ->
    -> join
    ->
    -> lms_book_issue bi
    ->
    -> on m.member_id=bi.member_id and
    ->
    -> f.fine_range=bi.fine_range
    ->
    -> group by m.member_id
    ->
    -> having sum(f.fine_amount)>100;
+-----------+-------------+------------+--------------------+
| member_id | member_name | fine_range | sum(f.fine_amount) |
+-----------+-------------+------------+--------------------+
| LM003     | GAYAN       | R1         |             120.00 |
+-----------+-------------+------------+--------------------+
1 row in set (0.01 sec)
```

Problem 4:

Write a query to display the book code, book title and availability status of the ‘JAVA’ books whose edition is "6”. Show the availability status with alias name “AVAILABILITYSTATUS”. Hint: Book availability status can be fetched from “BOOK_ISSUE_STATUS” column of LMS_BOOK_ISSUE table.

```
mysql> select book_code,book_title,
    ->
    -> publication,price,book_edition,publish_date
    ->
    -> from lms_book_details
    ->
    -> order by book_edition,publication,publish_date ;
+-----------+------------------------------+-------------------+--------+--------------+--------------+
| book_code | book_title                   | publication       | price  | book_edition | publish_date |
+-----------+------------------------------+-------------------+--------+--------------+--------------+
| BL000002  | Java: The Complete Reference | Tata Mcgraw Hill  | 750.00 |            5 | 2011-10-10   |
| BL000004  | Java: The Complete Reference | Tata Mcgraw Hill  | 750.00 |            5 | 2011-10-10   |
| BL000006  | Java: The Complete Reference | Tata Mcgraw Hill  | 750.00 |            5 | 2011-10-10   |
| BL000003  | Java How To Do Program       | Prentice Hall     | 600.00 |            6 | 1999-05-10   |
| BL000005  | Java How To Do Program       | Prentice Hall     | 600.00 |            6 | 1999-12-10   |
| BL000010  | Java ForvDummies             | Prentice Hall     | 575.00 |            6 | 1999-12-10   |
| BL000008  | Let Us C                     | BPB Publications  | 500.00 |            9 | 2010-05-12   |
| BL000009  | Let Us C#                    | BPB Publications  | 550.00 |            9 | 2010-05-12   |
| BL000011  | Let Us C++                   | BPB Publications  | 650.00 |            9 | 2010-05-12   |
| BL000007  | Let Us C                     | BPB Publications  | 500.00 |            9 | 2010-12-11   |
+-----------+------------------------------+-------------------+--------+--------------+--------------+
10 rows in set (0.00 sec)
```

Problem 5:

Write a query to display the book code, book title and rack number of the books which are placed in rack 'A1' and sort by book title in ascending order.

```
mysql> select book_code,book_title,rack_num
    ->
    -> from lms_book_details
    ->
    -> where rack_num='A1'
    ->
    -> ORDER BY BOOK_title;
+-----------+------------------------------+----------+
| book_code | book_title                   | rack_num |
+-----------+------------------------------+----------+
| BL000010  | Java ForvDummies             | A1       |
| BL000003  | Java How To Do Program       | A1       |
| BL000005  | Java How To Do Program       | A1       |
| BL000002  | Java: The Complete Reference | A1       |
| BL000004  | Java: The Complete Reference | A1       |
| BL000006  | Java: The Complete Reference | A1       |
+-----------+------------------------------+----------+
6 rows in set (0.00 sec)
```

Problem 6:

Write a query to display the member id, member name, due date and date returned of the members who has returned the books after the due date. Hint: Date_return is due date and Date_returned is actual book return date.

```
mysql>
mysql> select m.member_id,m.member_name,bi.date_return,bi.date_returned
    ->
    -> from lms_members m
    ->
    -> join
    ->
    -> lms_book_issue bi
    ->
    -> on m.member_id=bi.member_id
    ->
    -> where date_return != date_returned;
+-----------+-------------+-------------+---------------+
| member_id | member_name | date_return | date_returned |
+-----------+-------------+-------------+---------------+
| LM002     | ABDHUL      | 2012-05-06  | 2012-05-16    |
| LM003     | GAYAN       | 2012-04-16  | 2012-04-20    |
| LM004     | RADHA       | 2012-04-16  | 2012-04-20    |
| LM005     | GURU        | 2012-04-15  | 2012-04-20    |
| LM003     | GAYAN       | 2012-05-07  | 2012-05-25    |
+-----------+-------------+-------------+---------------+
5 rows in set (0.00 sec)
```

Problem 7:

Write a query to display the member id, member name and date of registration who have not taken any book.

```
mysql> select m.member_id,m.member_name,m.date_register
    ->
    -> from lms_members m
    ->
    -> where member_id not in(select member_id from lms_book_issue);
+-----------+-------------+---------------+
| member_id | member_name | date_register |
+-----------+-------------+---------------+
| LM006     | MOHAN       | 2012-04-12    |
+-----------+-------------+---------------+
1 row in set (0.00 sec)
```

Problem 8:

Write a Query to display the member id and member name of the members who has not paid any fine in the year 2012.

```
mysql> select member_id,member_name
    ->
    -> from
    ->
    -> lms_members
    ->
    -> where
    ->
    -> member_id not in(select bi.member_id
    ->
    -> from lms_book_issue bi
    ->
    -> join lms_fine_details f
    ->
    -> on f.fine_range=bi.fine_range
    ->
    -> where year(date_returned)=2012
    ->
    -> group by bi.member_id
    ->
    -> having sum(f.fine_amount)>0);
+-----------+-------------+
| member_id | member_name |
+-----------+-------------+
| LM001     | AMIT        |
| LM006     | MOHAN       |
+-----------+-------------+
2 rows in set (0.00 sec)
```

Problem 9:

Write a query to display the date on which the maximum numbers of books were issued and the number of books issued with alias name “NOOFBOOKS”.

```
mysql> select DATE_ISSUE,count(DATE_ISSUE) as NO_OF_BOOKS from LMS_BOOK_ISSUE group by DATE_ISSUE having COUNT(DATE_ISSUE)=(select MAX(counted) from (select COUNT(DATE_ISSUE) as counted from LMS_BOOK_ISSUE group
 by DATE_ISSUE) as t)
    -> ;
+------------+------------+
| DATE_ISSUE | NO_OF_BOOKS |
+------------+------------+
| 2012-05-01 |          2 |
| 2012-04-01 |          2 |
+------------+------------+
2 rows in set (0.00 sec)
```

Problem 10:

Write a query to list the book title and supplier id for the books authored by “Herbert Schildt" and the book edition is 5 and supplied by supplier ‘S01’.

```
mysql> select book_title,supplier_id
    ->
    -> from lms_book_details
    ->
    -> where author like 'h%'
    ->
    -> and supplier_id='S01'
    ->
    -> and book_edition=5;
+------------------------------+-------------+
| book_title                   | supplier_id |
+------------------------------+-------------+
| Java: The Complete Reference | S01         |
+------------------------------+-------------+
1 row in set (0.01 sec)
```

Problem 11:

Write a query to display the rack number and the number of books in each rack with alias name “NOOFBOOKS” and sort by rack number in ascending order.

```
mysql>
mysql> select count(rack_num)no_of_books,rack_num
    ->
    -> from lms_book_details
    ->
    -> group by rack_num
    ->
    -> order by count(rack_num);
+-------------+----------+
| no_of_books | rack_num |
+-------------+----------+
|           4 | A3       |
|           6 | A1       |
+-------------+----------+
2 rows in set (0.00 sec)
```

Problem 12:

Write a query to display book issue number, member name, date or registration, date of expiry, book title, category author, price, date of issue, date of return, actual returned date, issue status, fine amount.

```
mysql>
mysql> Select BOOK_ISSUE_NO,MEMBER_NAME,DATE_REGISTER,DATE_EXPIRE,
    -> BOOK_TITLE,CATEGORY, PRICE, DATE_ISSUE,DATE_RETURN,DATE_RETURNED,
    -> (select FINE_AMOUNT from LMS_FINE_DETAILS f
    -> where i.FINE_RANGE= f.FINE_RANGE)as FINE_AMOUNT
    ->  from LMS_BOOK_ISSUE i,LMS_MEMBERS m,LMS_BOOK_DETAILS b
    -> where i.MEMBER_ID=m.MEMBER_ID
    -> and b.BOOK_CODE=i.BOOK_CODE
    ->
    -> ;
+--------------+-------------+---------------+-------------+-----------------------------+----------+--------+------------+-------------+---------------+-------------+
| BOOK_ISSUE_NO | MEMBER_NAME | DATE_REGISTER | DATE_EXPIRE | BOOK_TITLE                  | CATEGORY | PRICE  | DATE_ISSUE | DATE_RETURN | DATE_RETURNED | FINE_AMOUNT |
+--------------+-------------+---------------+-------------+-----------------------------+----------+--------+------------+-------------+---------------+-------------+
|            1 | AMIT        | 2012-02-12    | 2013-02-11  | Java ForvDummies            | JAVA     | 575.00 | 2012-05-01 | 2012-05-16  | 2012-05-16    |        0.00 |
|            2 | ABDHUL      | 2012-04-10    | 2013-04-09  | Java: The Complete Reference | JAVA     | 750.00 | 2012-05-01 | 2012-05-06  | 2012-05-16    |       50.00 |
|            3 | GAYAN       | 2012-05-13    | 2013-05-12  | Let Us C                    | C        | 500.00 | 2012-04-01 | 2012-04-16  | 2012-04-20    |       20.00 |
|            4 | RADHA       | 2012-04-22    | 2013-04-21  | Java How To Do Program      | JAVA     | 600.00 | 2012-04-01 | 2012-04-16  | 2012-04-20    |       20.00 |
|            5 | GURU        | 2012-03-30    | 2013-05-16  | Let Us C                    | C        | 500.00 | 2012-03-30 | 2012-04-15  | 2012-04-20    |       20.00 |
|            6 | GURU        | 2012-03-30    | 2013-05-16  | Let Us C                    | C        | 500.00 | 2012-04-20 | 2012-05-05  | 2012-05-05    |        0.00 |
|            7 | GAYAN       | 2012-05-13    | 2013-05-12  | Let Us C                    | C        | 500.00 | 2012-04-22 | 2012-05-07  | 2012-05-25    |      100.00 |
+--------------+-------------+---------------+-------------+-----------------------------+----------+--------+------------+-------------+---------------+-------------+
7 rows in set (0.00 sec)
```

Problem 13:

Write a query to display the book code, title, publish date of the books which is been published in the month of December.

```
7 rows in set (0.00 sec)

mysql> select book_code,book_title,publish_date
    ->
    -> from lms_book_details
    ->
    -> where month(publish_date)=12;
+------------+-------------------------+--------------+
| book_code | book_title              | publish_date |
+------------+-------------------------+--------------+
| BL000005  | Java How To Do Program | 1999-12-10   |
| BL000007  | Let Us C               | 2010-12-11   |
| BL000010  | Java ForvDummies       | 1999-12-10   |
+------------+-------------------------+--------------+
3 rows in set (0.01 sec)
```

Problem 14:

Write a query to display the book code, book title and availability status of the ‘JAVA’ books whose edition is "5”. Show the availability status with alias name “AVAILABILITYSTATUS”. Hint: Book availability status can be fetched from “BOOK_ISSUE_STATUS” column of LMS_BOOK_ISSUE table.

```
mysql> select book_code,book_title,bd.supplier_id,max(price)
    ->
    -> ,supplier_name
    ->
    -> from lms_book_details bd
    ->
    -> join lms_suppliers_details sd
    ->
    -> on sd.supplier_id=bd.supplier_id
    ->
    -> group by supplier_id;
+-----------+--------------------------------+-------------+------------+--------------------+
| book_code | book_title                     | supplier_id | max(price) | supplier_name      |
+-----------+--------------------------------+-------------+------------+--------------------+
| BL000003  | Java How To Do Program         | S01         |     750.00 | SINGAPORE SHOPPEE  |
| BL000002  | Java: The Complete Reference   | S03         |     750.00 | ROSE BOOK STORE    |
| BL000008  | Let Us C                       | S04         |     650.00 | KAVARI STORE       |
+-----------+--------------------------------+-------------+------------+--------------------+
3 rows in set (0.00 sec)
```

Problem 15:

Write a query to display book code, book name, and publisher, how old the book is. Sorted as older to newer.

```
mysql> select book_code,book_title,
    ->
    -> publication,datediff(current_date,publish_date)no_of_days
    ->
    -> from lms_book_details
    ->
    -> order by datediff(current_date,publish_date) ;
+-----------+--------------------------------+--------------------+------------+
| book_code | book_title                     | publication        | no_of_days |
+-----------+--------------------------------+--------------------+------------+
| BL000002  | Java: The Complete Reference   | Tata Mcgraw Hill   |       3362 |
| BL000004  | Java: The Complete Reference   | Tata Mcgraw Hill   |       3362 |
| BL000006  | Java: The Complete Reference   | Tata Mcgraw Hill   |       3362 |
| BL000007  | Let Us C                       | BPB Publications   |       3665 |
| BL000008  | Let Us C                       | BPB Publications   |       3878 |
| BL000009  | Let Us C#                      | BPB Publications   |       3878 |
| BL000011  | Let Us C++                     | BPB Publications   |       3878 |
| BL000005  | Java How To Do Program         | Prentice Hall      |       7684 |
| BL000010  | Java ForvDummies               | Prentice Hall      |       7684 |
| BL000003  | Java How To Do Program         | Prentice Hall      |       7898 |
+-----------+--------------------------------+--------------------+------------+
10 rows in set (0.01 sec)

mysql>
mysql> select * from LMS_BOOK_ISSUE ;
+---------------+-----------+-----------+------------+-------------+---------------+------------+
| BOOK_ISSUE_NO | MEMBER_ID | BOOK_CODE | DATE_ISSUE | DATE_RETURN | DATE_RETURNED | FINE_RANGE |
+---------------+-----------+-----------+------------+-------------+---------------+------------+
|             1 | LM001     | BL000010  | 2012-05-01 | 2012-05-16  | 2012-05-16    | R0         |
|             2 | LM002     | BL000002  | 2012-05-01 | 2012-05-06  | 2012-05-16    | R2         |
|             3 | LM003     | BL000007  | 2012-04-01 | 2012-04-16  | 2012-04-20    | R1         |
|             4 | LM004     | BL000005  | 2012-04-01 | 2012-04-16  | 2012-04-20    | R1         |
|             5 | LM005     | BL000008  | 2012-03-30 | 2012-04-15  | 2012-04-20    | R1         |
|             6 | LM005     | BL000008  | 2012-04-20 | 2012-05-05  | 2012-05-05    | R0         |
|             7 | LM003     | BL000007  | 2012-04-22 | 2012-05-07  | 2012-05-25    | R4         |
+---------------+-----------+-----------+------------+-------------+---------------+------------+
7 rows in set (0.00 sec)
```

```
mysql>
mysql> select * from lms_members;
+-----------+-------------+----------+---------------+-------------+-------------------+
| MEMBER_ID | MEMBER_NAME | CITY     | DATE_REGISTER | DATE_EXPIRE | MEMBERSHIP_STATUS |
+-----------+-------------+----------+---------------+-------------+-------------------+
| LM001     | AMIT        | CHENNAI  | 2012-02-12    | 2013-02-11  | Temporary         |
| LM002     | ABDHUL      | DELHI    | 2012-04-10    | 2013-04-09  | Temporary         |
| LM003     | GAYAN       | CHENNAI  | 2012-05-13    | 2013-05-12  | Permanent         |
| LM004     | RADHA       | CHENNAI  | 2012-04-22    | 2013-04-21  | Temporary         |
| LM005     | GURU        | BANGALORE| 2012-03-30    | 2013-05-16  | Temporary         |
| LM006     | MOHAN       | CHENNAI  | 2012-04-12    | 2013-05-16  | Temporary         |
+-----------+-------------+----------+---------------+-------------+-------------------+
6 rows in set (0.00 sec)

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 |
+-----------+---------------------------+----------+-----------------+-----------------+--------------+--------------+-------+----------+--------------+-------------+
| BL000002  | Java: The Complete Reference | JAVA  | Herbert Schildt | Tata Mcgraw Hill | 2011-10-10 |            5 | 750.00 | A1       | 2011-05-10   | S03         |
| BL000003  | Java How To Do Program    | JAVA     | Paul J. Deitel  | Prentice Hall   | 1999-05-10   |            6 | 600.00 | A1       | 2012-05-10   | S01         |
| BL000004  | Java: The Complete Reference | JAVA  | Herbert Schildt | Tata Mcgraw Hill | 2011-10-10 |            5 | 750.00 | A1       | 2012-05-11   | S01         |
| BL000005  | Java How To Do Program    | JAVA     | Paul J. Deitel  | Prentice Hall   | 1999-12-10   |            6 | 600.00 | A1       | 2012-05-11   | S01         |
| BL000006  | Java: The Complete Reference | JAVA  | Herbert Schildt | Tata Mcgraw Hill | 2011-10-10 |            5 | 750.00 | A1       | 2012-05-12   | S03         |
| BL000007  | Let Us C                  | C        | Yashavant Kanetkar | BPB Publications | 2010-12-11 |            9 | 500.00 | A3       | 2010-11-03   | S03         |
| BL000008  | Let Us C                  | C        | Yashavant Kanetkar | BPB Publications | 2010-05-12 |            9 | 500.00 | A3       | 2011-08-09   | S04         |
| BL000009  | Let Us C#                 | C        | Yashavant Kanetkar | BPB Publications | 2010-05-12 |            9 | 550.00 | A3       | 2011-08-09   | S04         |
| BL000010  | Java ForvDummies          | JAVA     | Paul J. Deitel  | Prentice Hall   | 1999-12-10   |            6 | 575.00 | A1       | 2011-05-10   | S01         |
| BL000011  | Let Us C++                | C        | Yashavant Kanetkar | BPB Publications | 2010-05-12 |            9 | 650.00 | A3       | 2011-08-09   | S04         |
+-----------+---------------------------+----------+-----------------+-----------------+--------------+--------------+-------+----------+--------------+-------------+
10 rows in set (0.00 sec)

mysql>
mysql> select * from LMS_FINE_DETAILS;
+------------+-------------+
| FINE_RANGE | FINE_AMOUNT |
+------------+-------------+
| R0         |        0.00 |
| R1         |       20.00 |
| R2         |       50.00 |
| R3         |       75.00 |
| R4         |      100.00 |
| R5         |      150.00 |
| R6         |      200.00 |
+------------+-------------+
7 rows in set (0.00 sec)
```

```
mysql>
mysql> select * from LMS_SUPPLIERS_DETAILS;
+-------------+----------------------+-------------+-------------+------------------+
| SUPPLIER_ID | SUPPLIER_NAME        | ADDRESS     | CONTACT     | EMAIL            |
+-------------+----------------------+-------------+-------------+------------------+
| S01         | SINGAPORE SHOPPEE    | CHENNAI     | 9894123555 | sing@gmail.com   |
| S02         | JK Stores            | MUMBAI      | 9940123450 | jks@yahoo.com    |
| S03         | ROSE BOOK STORE      | TRIVANDRUM  | 9444411222 | rose@gmail.com   |
| S04         | KAVARI STORE         | DELHI       | 8630001452 | kavi@redif.com   |
| S05         | EINSTEN BOOK GALLARY | US          | 9542000001 | eingal@aol.com   |
| S06         | AKBAR STORE          | MUMBAI      | 7855623100 | akbakst@aol.com  |
+-------------+----------------------+-------------+-------------+------------------+
6 rows in set (0.00 sec)
```

Problem 16:

Write a query to display the book code, book title and supplier name of the supplier who has supplied maximum number of books. For example, if “ABC Store” supplied 3 books, “LM Store” has supplied 2 books and “XYZ Store” has supplied 1 book. So “ABC Store” has supplied maximum number of books, hence display the details as mentioned below.
Example:
BOOK_CODE BOOK_TITLE SUPPLIER_NAME
BL000008 Easy Reference for Java ABC STORE
BL000001 Easy Reference for C ABC STORE
BL000003 Easy Reference for VB ABC STORE

```
mysql> select BOOK_CODE,BOOK_TITLE,SUPPLIER_NAME from LMS_BOOK_DETAILS B
    -> inner join LMS_SUPPLIERS_DETAILS S on B.SUPPLIER_ID = S.SUPPLIER_ID
    -> where S.SUPPLIER_ID in (select SUPPLIER_ID
    -> from LMS_BOOK_DETAILS group by SUPPLIER_ID
    -> having COUNT(SUPPLIER_ID)=(select MAX(cnt)
    -> from (select COUNT(*) as cnt from LMS_BOOK_DETAILS
    -> group by SUPPLIER_ID)as T))
    -> ;
+-----------+-------------------------------+-------------------+
| BOOK_CODE | BOOK_TITLE                    | SUPPLIER_NAME     |
+-----------+-------------------------------+-------------------+
| BL000003  | Java How To Do Program        | SINGAPORE SHOPPEE |
| BL000004  | Java: The Complete Reference  | SINGAPORE SHOPPEE |
| BL000005  | Java How To Do Program        | SINGAPORE SHOPPEE |
| BL000010  | Java ForvDummies              | SINGAPORE SHOPPEE |
+-----------+-------------------------------+-------------------+
4 rows in set (0.00 sec)
```

Problem 17:

Write a query to display the member id, member name and number of remaining books he/she can take with “REMAININGBOOKS” as alias name. Hint: Assuming a member can take maximum 3 books. For example, Ramesh has already taken 2 books; he can take only one book now. Hence display the remaining books as 1 in below format.
Example:
MEMBER_ID MEMBER_NAME REMAININGBOOKS
LM001 RAMESH 1
LM002 MOHAN 3

```
mysql> select m.MEMBER_ID,MEMBER_NAME,T.cb as REMAINING_BOOKS
    -> from LMS_MEMBERS m inner join
    -> (select a.member_id,COUNT(i.MEMBER_ID) as cb
    -> from LMS_MEMBERS a left outer join LMS_BOOK_ISSUE i
    -> on a.MEMBER_ID= i.MEMBER_ID
    -> group by a.MEMBER_ID)T on T.MEMBER_ID=m.MEMBER_ID
    -> ;
+-----------+-------------+-----------------+
| MEMBER_ID | MEMBER_NAME | REMAINING_BOOKS |
+-----------+-------------+-----------------+
| LM001     | AMIT        |               1 |
| LM002     | ABDHUL      |               1 |
| LM003     | GAYAN       |               2 |
| LM004     | RADHA       |               1 |
| LM005     | GURU        |               2 |
| LM006     | MOHAN       |               0 |
+-----------+-------------+-----------------+
6 rows in set (0.00 sec)
```

Problem 18:

Write a query to display the supplier id and supplier name of the supplier who has supplied minimum number of books. For example, if “ABC Store” supplied 3 books, “LM Store” has supplied 2 books and “XYZ Store” has supplied 1 book. So “XYZ Store” has supplied minimum number of books, hence display the details as mentioned below.
Example:
SUPPLIER_ID SUPPLIER_NAME
S04 XYZ STORE

```
mysql> select S.SUPPLIER_ID,SUPPLIER_NAME from LMS_BOOK_DETAILS B
    -> inner join LMS_SUPPLIERS_DETAILS S on B.SUPPLIER_ID = S.SUPPLIER_ID
    -> where S.SUPPLIER_ID in (select SUPPLIER_ID
    -> from LMS_BOOK_DETAILS group by SUPPLIER_ID
    -> having COUNT(SUPPLIER_ID)=(select MIN(cnt)
    -> from (select COUNT(*) as cnt
    -> from LMS_BOOK_DETAILS group by SUPPLIER_ID)as T))
    ->
    -> ;
+-------------+-----------------+
| SUPPLIER_ID | SUPPLIER_NAME   |
+-------------+-----------------+
| S03         | ROSE BOOK STORE |
| S03         | ROSE BOOK STORE |
| S03         | ROSE BOOK STORE |
| S04         | KAVARI STORE    |
| S04         | KAVARI STORE    |
| S04         | KAVARI STORE    |
+-------------+-----------------+
6 rows in set (0.00 sec)
```