[Library Management System]

>> PRACTICAL QUESTION (Library System)

Task:
Create 2 tables (LibraryBooks, IssuedBooks).
Insert values.
Add new column using DDL.
Run SQL queries and show output.

>> SOLUTION

1. CREATE DATABASE AND TABLES

```
mysql> CREATE DATABASE LibraryDB;
mysql> USE LibraryDB;

mysql> CREATE TABLE LibraryBooks(
    AccessionNumber CHAR(5) PRIMARY KEY,
    Title VARCHAR(50),
    Author VARCHAR(30),
    Department VARCHAR(20),
    PurchaseDate DATE,
    Price DECIMAL(8,2)
);

mysql> CREATE TABLE IssuedBooks(
    AccessionNumber CHAR(5),
    BorrowerRollNo CHAR(8),
    FOREIGN KEY (AccessionNumber)
        REFERENCES LibraryBooks(AccessionNumber)
);
```

2. INSERT RECORDS

```
mysql> INSERT INTO LibraryBooks VALUES
('A1001','DBMS','Navathe','Computer','2022-01-10',500),
('A1002','AI Concepts','Peter','Computer','2021-12-05',650),
('A1003','Chemistry Vol 1','RK Singh','Science','2022-03-14',450);

mysql> INSERT INTO IssuedBooks VALUES
('A1001','CS20201'),
('A1002','CS20205');
```

3. ADD NEW COLUMN

```
mysql> ALTER TABLE IssuedBooks
ADD IssueDate DATE;
```

4. COUNT COMPUTER DEPT BOOKS

```
mysql> SELECT COUNT(*)
       FROM LibraryBooks
       WHERE Department='Computer';
+----------+
| COUNT(*) |
+----------+
|    2     |
+----------+
```

5. ISSUED COMPUTER BOOKS BY NAVATHE

```
mysql> SELECT L.Title, L.Author
       FROM LibraryBooks L
       JOIN IssuedBooks I
       ON L.AccessionNumber = I.AccessionNumber
       WHERE L.Department='Computer'
       AND L.Author='Navathe';
+--------+---------+
| Title  | Author  |
+--------+---------+
| DBMS   | Navathe |
+--------+---------+
```

6. ISSUED BOOKS PER DEPARTMENT

```
mysql> SELECT Department, COUNT(*) AS TotalIssued
       FROM LibraryBooks L
       JOIN IssuedBooks I
       ON L.AccessionNumber = I.AccessionNumber
       GROUP BY Department;
+------------+-------------+
| Department | TotalIssued |
+------------+-------------+
| Computer   |      2      |
+------------+-------------+
```