

Laboratory Activity 4:

Laboratory Title: SQL - JOIN Operation

Chapter No. and Topic: Chapter 2 - Structured Query Language (SQL)

Discussions:

This activity introduces students to SQL JOIN operations for combining data from multiple tables.

Activity Description:

Learn how to use INNER JOIN, LEFT JOIN, and RIGHT JOIN to combine tables.

Objectives:

- Write SQL JOIN queries to retrieve data from multiple tables.
- Use INNER JOIN, LEFT JOIN, and RIGHT JOIN.

Materials:

- MySQL Workbench or SQL client

Procedure:

1. Retrieve a list of all transactions, including book title and member name:

sql

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```
SELECT Books.Title, Members.FirstName, Members.LastName
FROM Transactions
INNER JOIN Books ON Transactions.BookID = Books.BookID
INNER JOIN Members ON Transactions.MemberID = Members.MemberID;
```

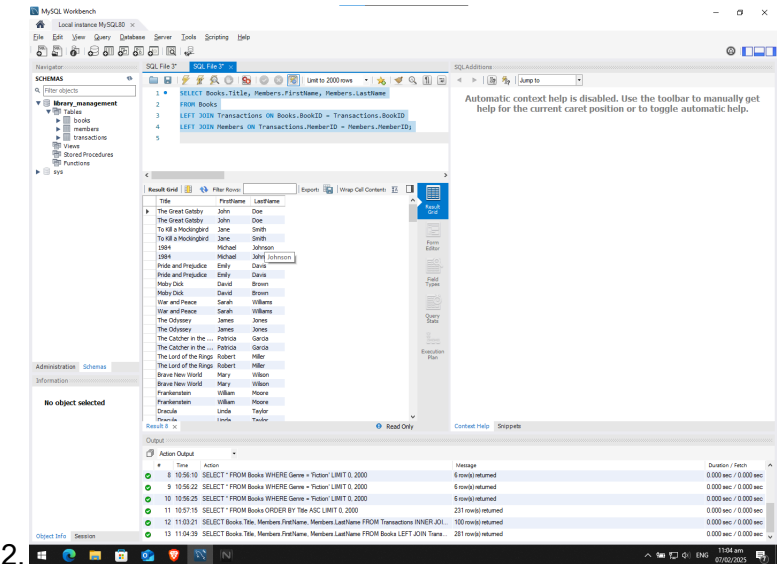
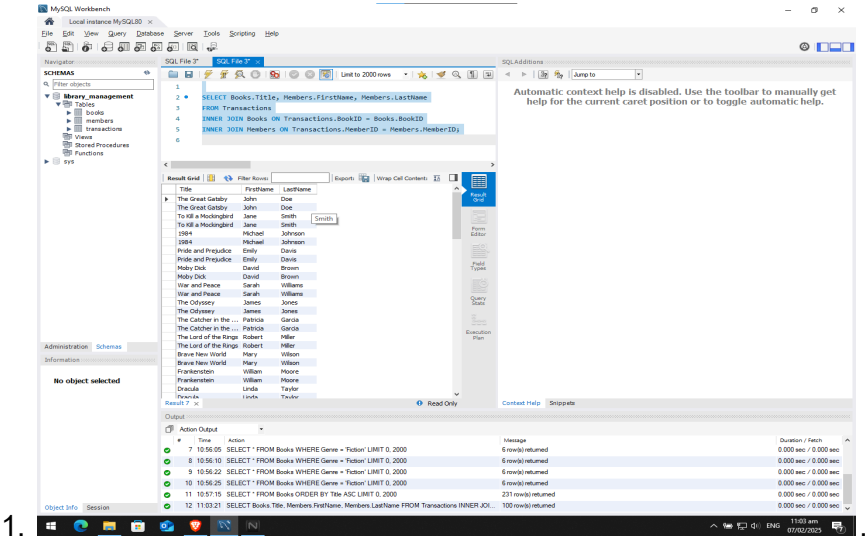
1. Retrieve a list of all books with transaction details, even those without transactions (LEFT JOIN):

sql

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```
SELECT Books.Title, Members.FirstName, Members.LastName
FROM Books
LEFT JOIN Transactions ON Books.BookID = Transactions.BookID
LEFT JOIN Members ON Transactions.MemberID = Members.MemberID;
```

Result:



Additional Questions/Discussions:

- How does the LEFT JOIN differ from the INNER JOIN?
 - The **INNER JOIN** returns only matching records from both tables, excluding unmatched records. In contrast, the **LEFT JOIN** returns all records from the left table and matching records from the right table; if no match is found, NULL values are displayed for the right table's columns. This ensures that all data from the left table is included in the result.

Conclusions:

- In this activity, students learned how to use SQL JOIN operations to combine data from multiple tables. They successfully applied INNER JOIN to retrieve only matching records and LEFT JOIN to include unmatched records from the left table. Understanding JOIN operations is essential for managing relational databases efficiently, allowing for more comprehensive and meaningful data retrieval.