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C.Y.S.: BSCpE – 3A **Score:**

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

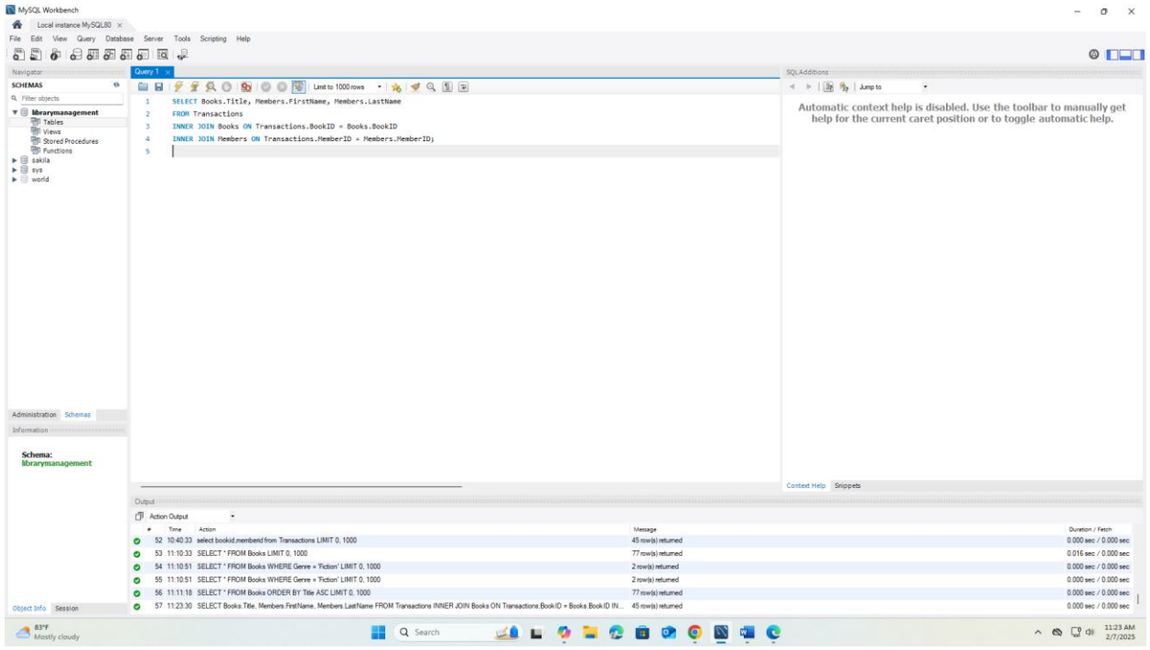
LEFT JOIN Transactions ON Books.BookID = Transactions.BookID

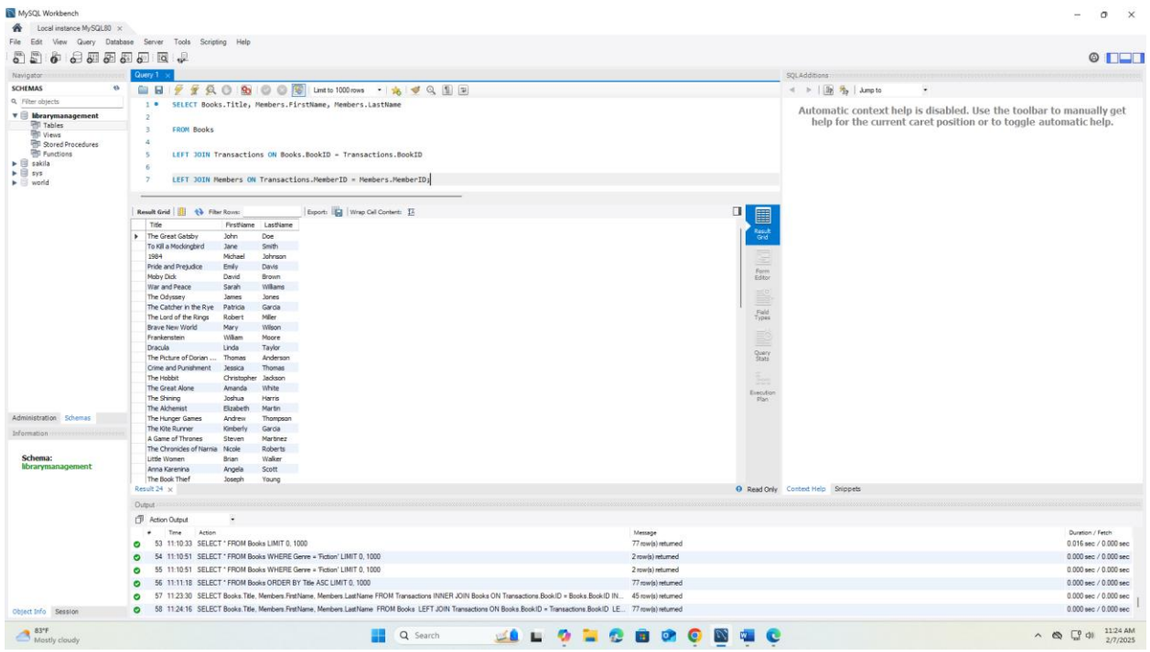
LEFT JOIN Members ON Transactions.MemberID = Members.MemberID;

Result:

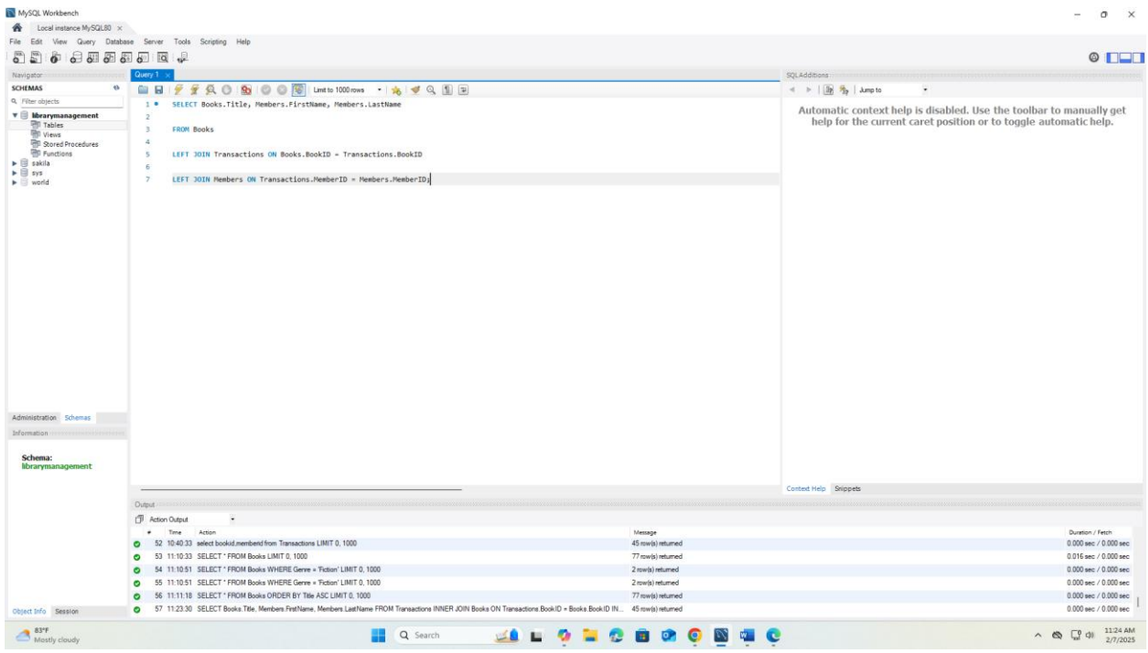
JOIN operations linking tables to retrieve combined data.

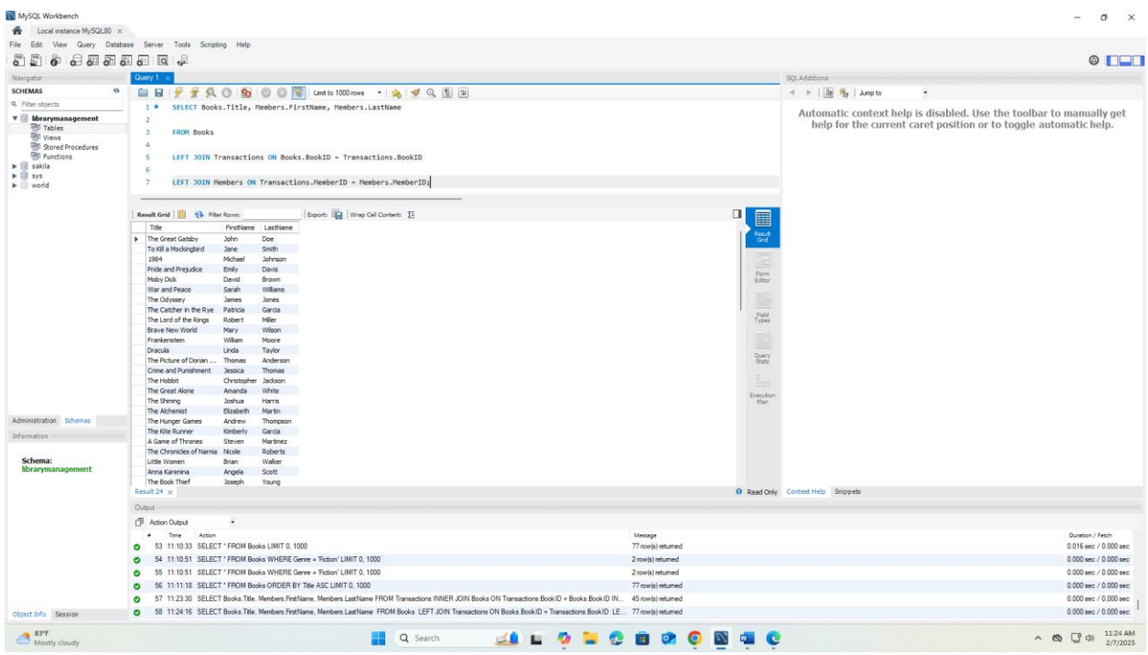
1. Retrieve a list of all transactions, including book title and member name:





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





Additional Questions/Discussions:

- How does the LEFT JOIN differ from the INNER JOIN?

Answer:

INNER JOIN combines rows from both tables only if there is a match in both tables. Returns rows where there is a match between the columns specified in the join condition. Excludes unmatched rows from both tables.

LEFT JOIN (or LEFT OUTER JOIN) combines rows from both tables and returns all rows from the left table (table1) and the matched rows from the right table (table2). Returns unmatched rows from the left table with NULL values for columns from the right

table. Includes unmatched rows from the left table, even if there is no corresponding match in the right table.

Conclusions:

In conclusion regarding the usage of INNER JOIN and LEFT JOIN in MySQL. INNER JOIN. Merges rows from two tables based on a matching column. Only includes rows with matching values in both tables. Excludes rows without matches, providing a focused result set. On the other hand, LEFT JOIN merges rows from two tables based on a matching column. Includes all rows from the left table, along with matched rows from the right table. Inserts NULL values for columns from the right table where there is no match, ensuring all rows from the left table are represented.

In essence, INNER JOIN delivers a precise intersection of data between tables, whereas LEFT JOIN ensures comprehensive inclusion of the left table's data, even if there are no matches in the right table. This flexibility allows for tailored data retrieval, depending on the specific requirements of your query.