

JOHN CARLO S. GUMAOD

Laboratory Activity 4:

MySQL Workbench

LibraryManagement x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

librarymanagement

Tables

books

Columns

BookID

Title

Author

ISBN

Genre

Indexes

Foreign Keys

Triggers

members

Columns

Indexes

Foreign Keys

Triggers

transactions

Columns

Indexes

Foreign Keys

Administration Schemas

Information

Table: books

Columns:

BookID int AI PK

Title varchar(100)

Author varchar(100)

ISBN varchar(20)

Genre varchar(50)

Object Info Session

Query 1 books members transactions books books

Limit to 1000 rows

```
1 SELECT Books.Title, Members.FirstName, Members.LastName
2 FROM Transactions
3 INNER JOIN Books ON Transactions.BookID = Books.BookID
4 INNER JOIN Members ON Transactions.MemberID = Members.MemberID;
5
6 • SELECT Books.Title, Members.FirstName, Members.LastName
7 FROM Books
```

Result Grid

| Title | FirstName | LastName |
|------------------------|-----------|----------|
| The Great Gatsby | John | Doe |
| To Kill a Mockingbird | Jane | Smith |
| 1984 | Michael | Johnson |
| Pride and Prejudice | Emily | Davis |
| Moby Dick | David | Brown |
| War and Peace | Sarah | Williams |
| The Odyssey | James | Jones |
| The Catcher in the Rye | Patricia | Garcia |
| The Lord of the Rings | Robert | Miller |
| Brave New World | Mary | Wilson |
| The Great Gatsby | John | Doe |

Result 7 x Read Only Context Help Snippet

Output

Action Output

| # | Time | Action | Message |
|----|----------|--|---------------------|
| 83 | 21:20:00 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Transactions INNER JOIN Books ON T... | 20 row(s) returned |
| 84 | 21:20:00 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Books LEFT JOIN Transactions ON Bo... | 100 row(s) returned |
| 85 | 21:21:35 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Transactions INNER JOIN Books ON T... | 20 row(s) returned |
| 86 | 21:21:41 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Books LEFT JOIN Transactions ON Bo... | 100 row(s) returned |
| 87 | 21:21:47 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Transactions INNER JOIN Books ON T... | 20 row(s) returned |
| 88 | 21:22:07 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Transactions INNER JOIN Books ON T... | 20 row(s) returned |

Query Completed

LibraryManagement x

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Table: books

Columns:

BookID int AI PK

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Object Info Session

Query Completed

Query 1 books members transactions books books x

Limit to 1000 rows

SQLAdditions

Automatic content help for the c

```
3 INNER JOIN Books ON Transactions.BookID = Books.BookID
4 INNER JOIN Members ON Transactions.MemberID = Members.MemberID;
5
6 SELECT Books.Title, Members.FirstName, Members.LastName
7 FROM Books
8 LEFT JOIN Transactions ON Books.BookID = Transactions.BookID
9 LEFT JOIN Members ON Transactions.MemberID = Members.MemberID;
```

Result Grid

Filter Rows:

Export: Wrap Cell Content: 1x

| Title | FirstName | LastName |
|-----------------------|-----------|----------|
| The Great Gatsby | John | Doe |
| The Great Gatsby | John | Doe |
| To Kill a Mockingbird | Jane | Smith |
| To Kill a Mockingbird | Jane | Smith |
| 1984 | Michael | Johnson |
| 1984 | Michael | Johnson |
| Pride and Prejudice | Emily | Davis |
| Pride and Prejudice | Emily | Davis |
| Moby Dick | David | Brown |
| Moby Dick | David | Brown |
| War and Peace | Sarah | Williams |

Result 8 x

Read Only

Context Help Snippets

Output

Action Output

| # | Time | Action | Message |
|----|----------|--|---------------------|
| 84 | 21:20:00 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Books LEFT JOIN Transactions ON Bo... | 100 row(s) returned |
| 85 | 21:21:35 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Transactions INNER JOIN Books ON T... | 20 row(s) returned |
| 86 | 21:21:41 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Books LEFT JOIN Transactions ON Bo... | 100 row(s) returned |
| 87 | 21:21:47 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Transactions INNER JOIN Books ON T... | 20 row(s) returned |
| 88 | 21:22:07 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Transactions INNER JOIN Books ON T... | 20 row(s) returned |
| 89 | 21:22:52 | SELECT Books.Title, Members.FirstName, Members.LastName FROM Books LEFT JOIN Transactions ON Bo... | 100 row(s) returned |

Additional Questions/Discussions:

- How does the LEFT JOIN differ from the INNER JOIN?
 - An INNER JOIN returns only the records that have matching values in both tables, excluding unmatched records. A LEFT JOIN returns all records from the left table, along with matching records from the right table; if there's no match, it includes NULL values for the right table's columns.

Conclusions:

- SQL JOIN operations are used to combine data from multiple tables based on related columns. INNER JOIN returns only matching records, while LEFT JOIN includes all records from the left table and matching records from the right, filling in NULL for non-matching rows. JOINS are essential for retrieving and organizing data from related tables in relational databases.