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BSCpE – 3A

Chapter 2: Structured Query Language (SQL)

Laboratory Activity 3:

Laboratory Title: Structured Query Language (SQL) - Basic Queries

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

Discussions:

This activity covers the basics of querying data from a table using SQL.

Activity Description:

Learn how to retrieve data using SELECT, filter with WHERE clauses, and sort results using ORDER BY.

Objectives:

- Write basic SQL queries using SELECT.
- Apply filters using WHERE clauses.
- Sort results using ORDER BY.

Materials:

- MySQL Workbench or SQL client

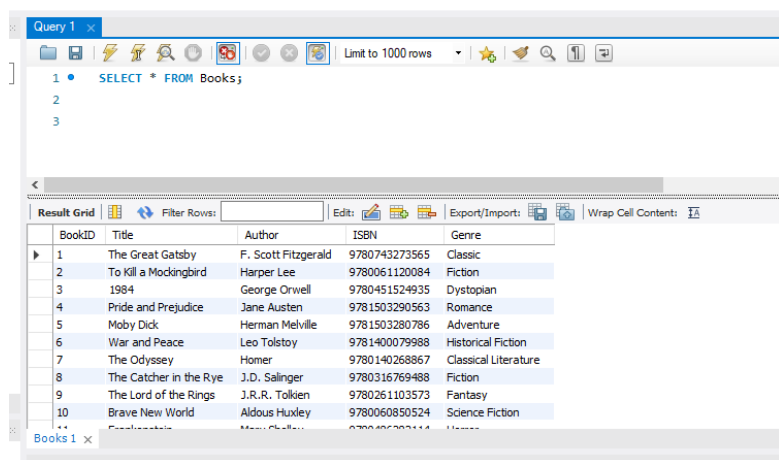
Procedure:

1. Open MySQL Workbench and connect to the LibraryManagement database.
2. Retrieve all columns from the Books table:

```
sql
```

Copy code

```
SELECT * FROM Books;
```

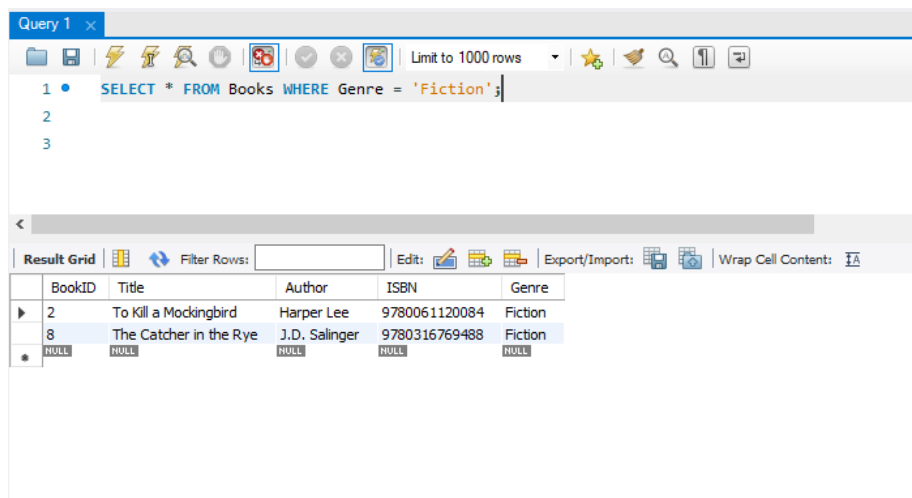


1. Retrieve books with the genre 'Fiction':

sql

Copy code

```
SELECT * FROM Books WHERE Genre = 'Fiction';
```



Query 1

Limit to 1000 rows

```
1 SELECT * FROM Books WHERE Genre = 'Fiction';
```

Result Grid

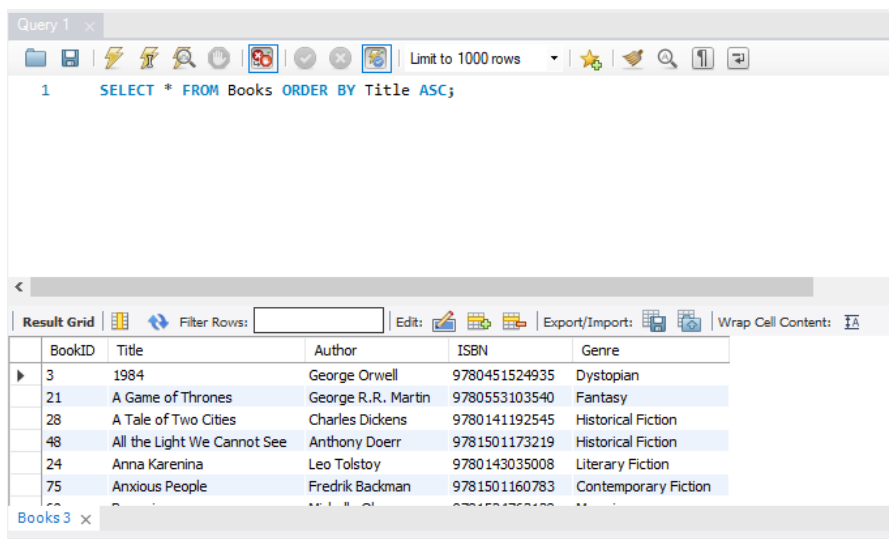
BookID	Title	Author	ISBN	Genre
2	To Kill a Mockingbird	Harper Lee	9780061120084	Fiction
8	The Catcher in the Rye	J.D. Salinger	9780316769488	Fiction
NULL	NULL	NULL	NULL	NULL

1. Sort the books by Title in ascending order:

sql

Copy code

```
SELECT * FROM Books ORDER BY Title ASC;
```



Query 1

Limit to 1000 rows

```
1 SELECT * FROM Books ORDER BY Title ASC;
```

Result Grid

BookID	Title	Author	ISBN	Genre
3	1984	George Orwell	9780451524935	Dystopian
21	A Game of Thrones	George R.R. Martin	9780553103540	Fantasy
28	A Tale of Two Cities	Charles Dickens	9780141192545	Historical Fiction
48	All the Light We Cannot See	Anthony Doerr	9781501173219	Historical Fiction
24	Anna Karenina	Leo Tolstoy	9780143035008	Literary Fiction
75	Anxious People	Fredrik Backman	9781501160783	Contemporary Fiction

Result:

Basic queries to retrieve and filter data from the `Books` table.

Additional Questions/Discussions:

- How do `WHERE` and `ORDER BY` improve the functionality of SQL queries?

The `WHERE` clause improves SQL queries by filtering records based on specified conditions, allowing users to retrieve only the relevant data. The `ORDER BY` clause enhances queries by sorting the result set in ascending or descending order, improving data organization and readability. Together, they enable more precise and structured data retrieval.

Conclusions:

Querying data using SQL is essential for retrieving, filtering, and organizing information from a database. By using clauses like `SELECT`, `WHERE`, and `ORDER BY`, users can effectively retrieve specific data, apply conditions, and sort results, making data manipulation efficient and organized.