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BSCpE-2A

Laboratory Activity 2:

Laboratory Title: Creating Tables and Establishing Primary Keys

Chapter No. and Topic: Chapter 1 - Relational Database Concepts

Discussions:

This activity focuses on creating the main tables for the Library Management System, with primary keys for each table.

Activity Description: Create tables such as Books, Members, and Transactions for the library system.

Objectives:

Create tables for library management.

• Define primary keys for each table.

Materials:

• MySQL Workbench or SQL client

Procedure:

1.Open MySQL Workbench and connect to the LibraryManagement database.

2.Create the following tables:

sql

Copy code

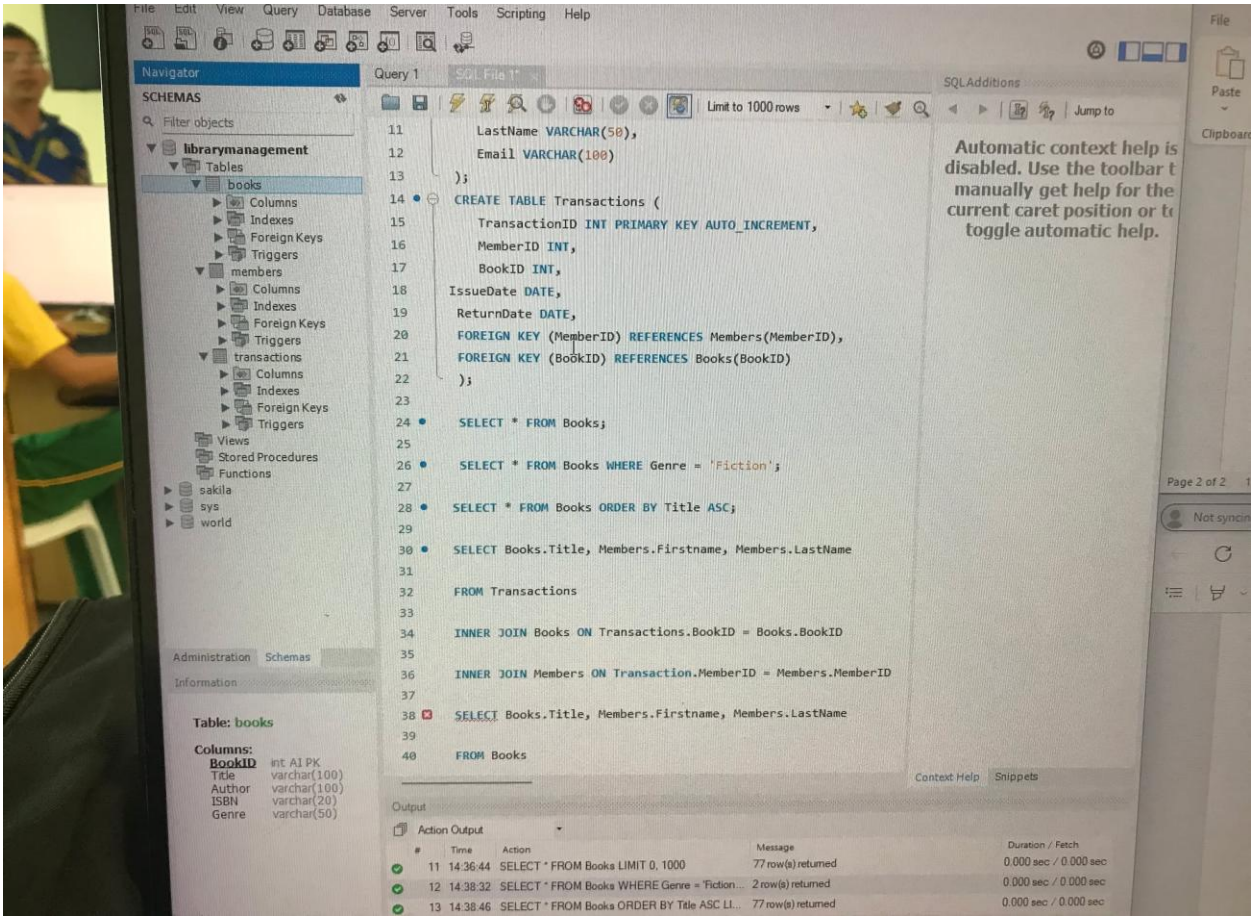
CREATE TABLE Books (BookID INT PRIMARY KEY AUTO_INCREMENT, Title VARCHAR(100), Author VARCHAR(100), ISBN VARCHAR(20), Genre VARCHAR(50));

CREATE TABLE Members (MemberID INT PRIMARY KEY AUTO_INCREMENT, FirstName VARCHAR(50), LastName VARCHAR(50), Email VARCHAR(100));

CREATE TABLE Transactions (TransactionID INT PRIMARY KEY AUTO_INCREMENT, MemberID INT, BookID INT, IssueDate DATE, ReturnDate DATE, FOREIGN KEY

(MemberID) REFERENCES Members(MemberID), FOREIGN KEY (BookID) REFERENCES Books(BookID));

3. Verify the tables are created by running SHOW TABLES;. Result: Three tables (Books, Members, and Transactions) are created.



Additional Questions/Discussions:

• What is the importance of primary keys in a relational database?

Answer: Primary keys uniquely identify each record in a table, ensuring data integrity and efficient data retrieval.

• How do foreign keys maintain referential integrity? Conclusions:

Answer: Foreign keys enforce relationships between tables by ensuring that values in one table match values in another, preventing orphaned records and maintaining data consistency

Conclusion:

The MySQL and DBeaver setup for an LMS highlights the importance of database design, with tables like Books, Members, and Transactions ensuring structured and efficient data management.