

Chapter 1: Relational Database Concepts

Laboratory Activity 1:

**Laboratory Title:** Installing MySQL and Setting Up the Database  
**Chapter No. and Topic:** Chapter 1 - Relational Database Concepts  
**Discussions:**

This activity will guide students through installing MySQL on their system and setting up a basic library management system database.

**Activity Description:**  
Install MySQL, create a new database, and establish connections using MySQL Workbench or command line.

**Objectives:**

- Install MySQL on a local machine.
- Set up a MySQL database for the Library Management System.

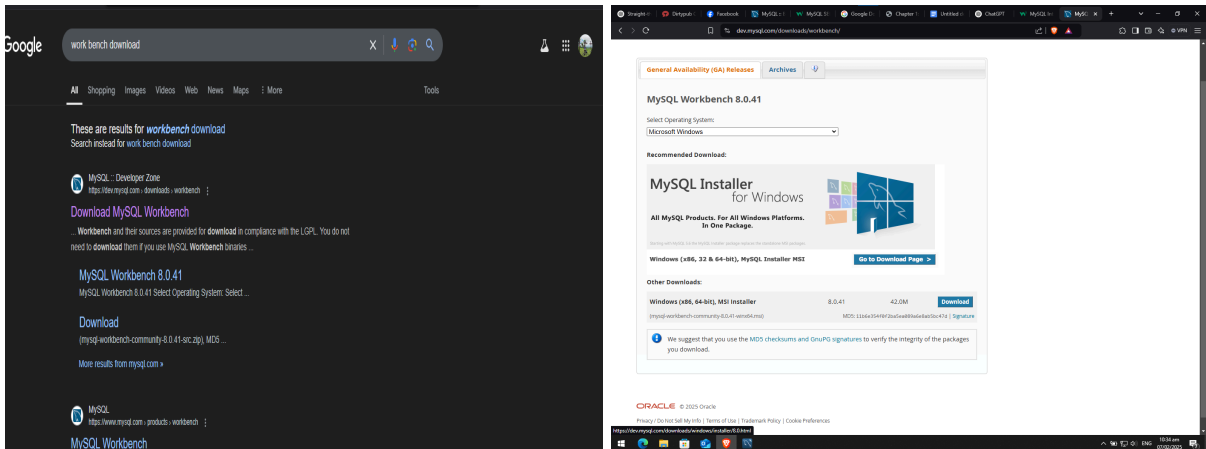
**Materials:**

- MySQL Installer
- MySQL Workbench (or any preferred MySQL client)
- Laptop or computer with administrative rights

**Procedure:**

1. Download MySQL Installer from the official website.
2. Run the installer and follow the installation steps.
3. Once MySQL is installed, open MySQL Workbench.
4. Connect to MySQL using the root user.
5. Create a new database named LibraryManagement.
6. Verify that the database was created successfully.

**Result:**



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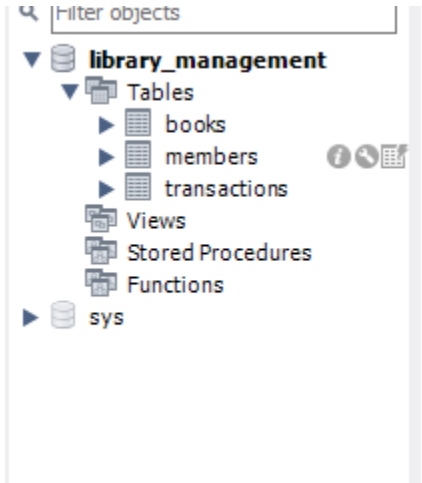
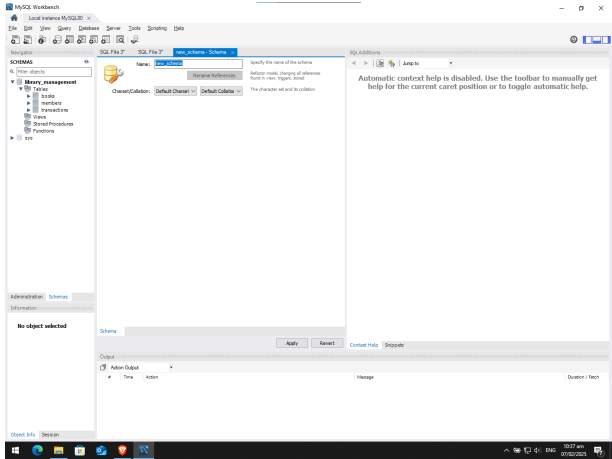
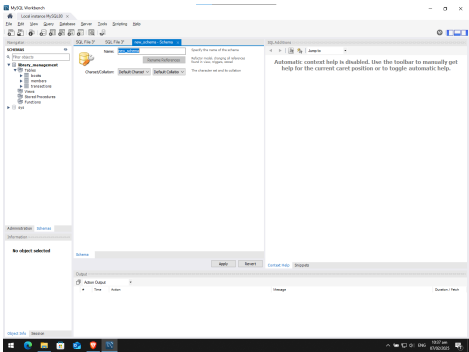
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A running MySQL instance with a database called `LibraryManagement`.

Additional Questions/Discussion:

- Why is MySQL popular for DBMS?
  - MySQL is widely used due to its open-source nature, high performance, scalability, and strong security features. It supports ACID compliance for data integrity, fast query processing, and seamless integration with various programming languages and platforms.
- What are the advantages of using MySQL for a library management system?
  - MySQL ensures efficient storage and retrieval of books, users, and transactions, enabling smooth library operations. Its indexing, replication, and backup features enhance performance and data reliability. Additionally, MySQL's security and user access control prevent unauthorized modifications, ensuring data integrity.

CONCLUSION:

In this activity, students successfully installed MySQL and set up a basic database for a Library Management System. They learned how to establish a connection using MySQL Workbench and create a new database, verifying its successful creation. This hands-on experience provided a foundational understanding of relational database concepts and the practical use of MySQL. By completing this activity, students are now equipped with the skills to manage databases efficiently, which is essential for developing real-world applications.