Assignment 05:

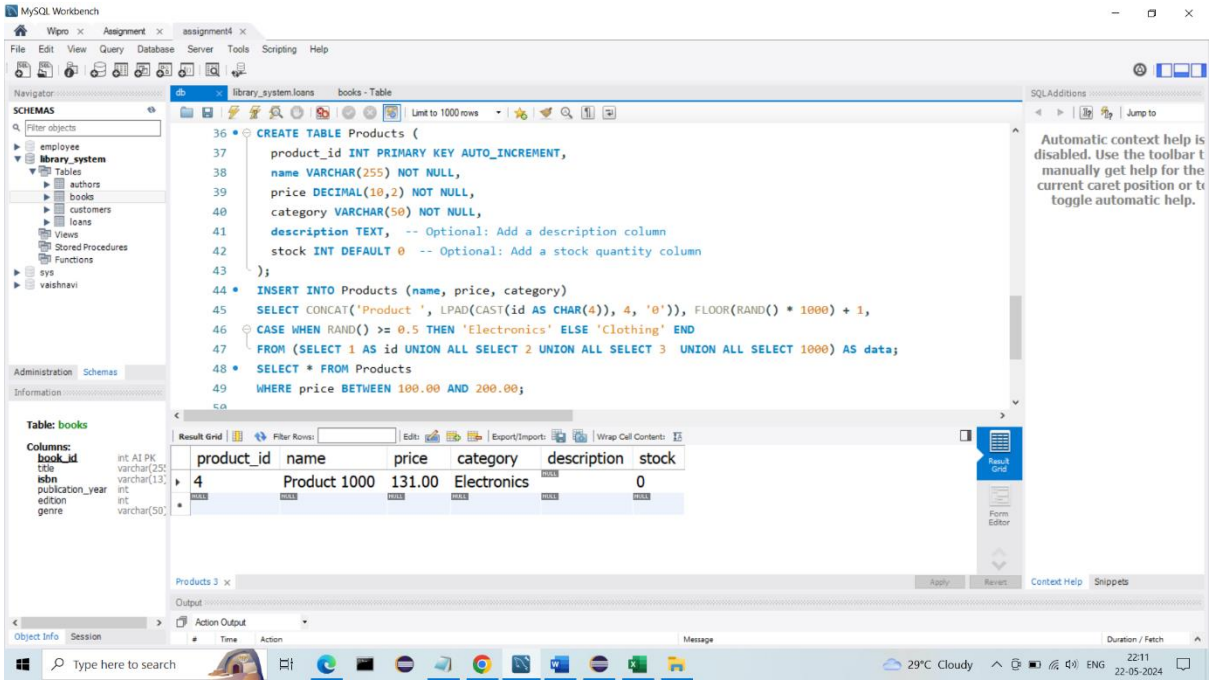
Demonstrate the creation of an index on a table and discuss how it improves query performance. Use a DROP INDEX statement to remove the index and analyze the impact on query execution.

In relational databases, indexes act like an organized filing system for tables. They significantly improve the performance of queries that involve filtering or sorting data based on specific columns. Here's an example:

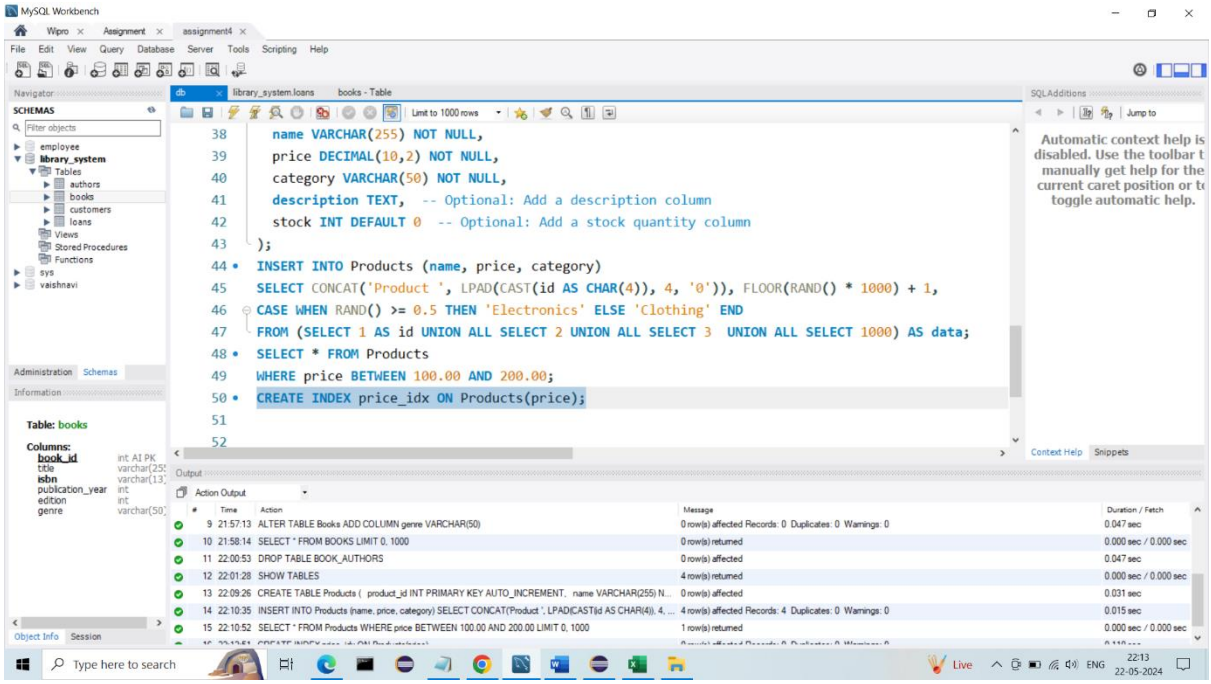
Scenario:

Consider a large table named Products with many columns, including product_id (primary key), name, price, and category. Imagine a query that retrieves all products within a specific price range (price BETWEEN 100 AND 200).

1.Create a table: -



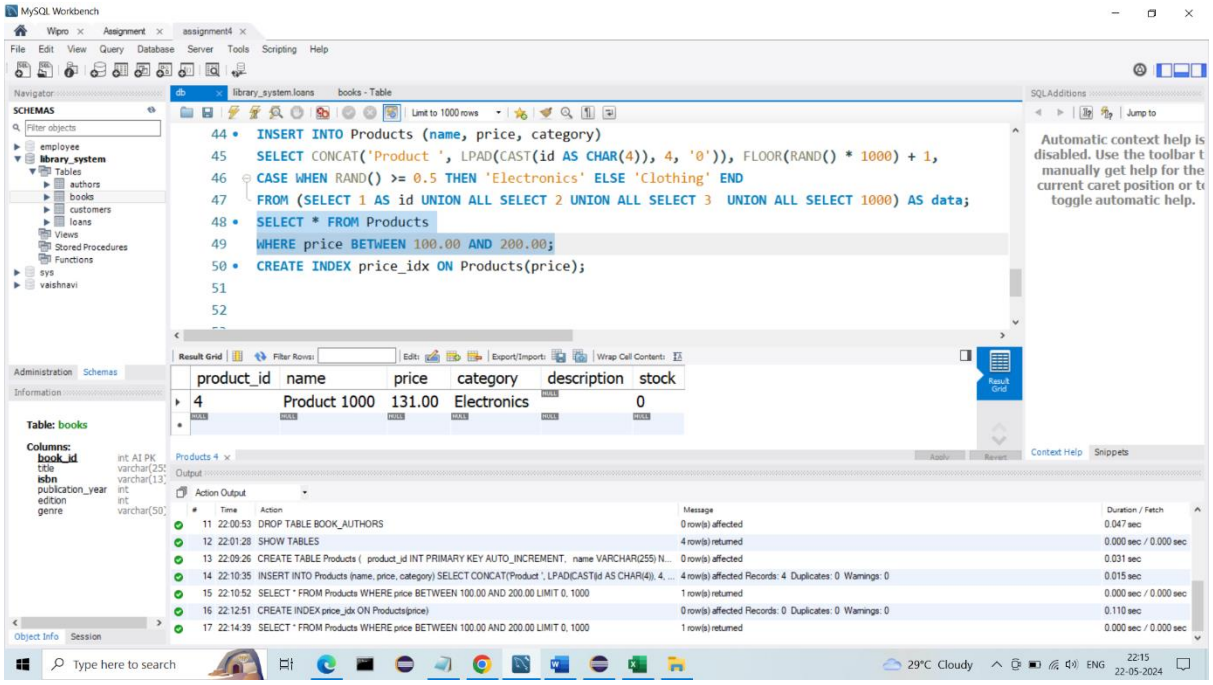
2. Creating an Index:



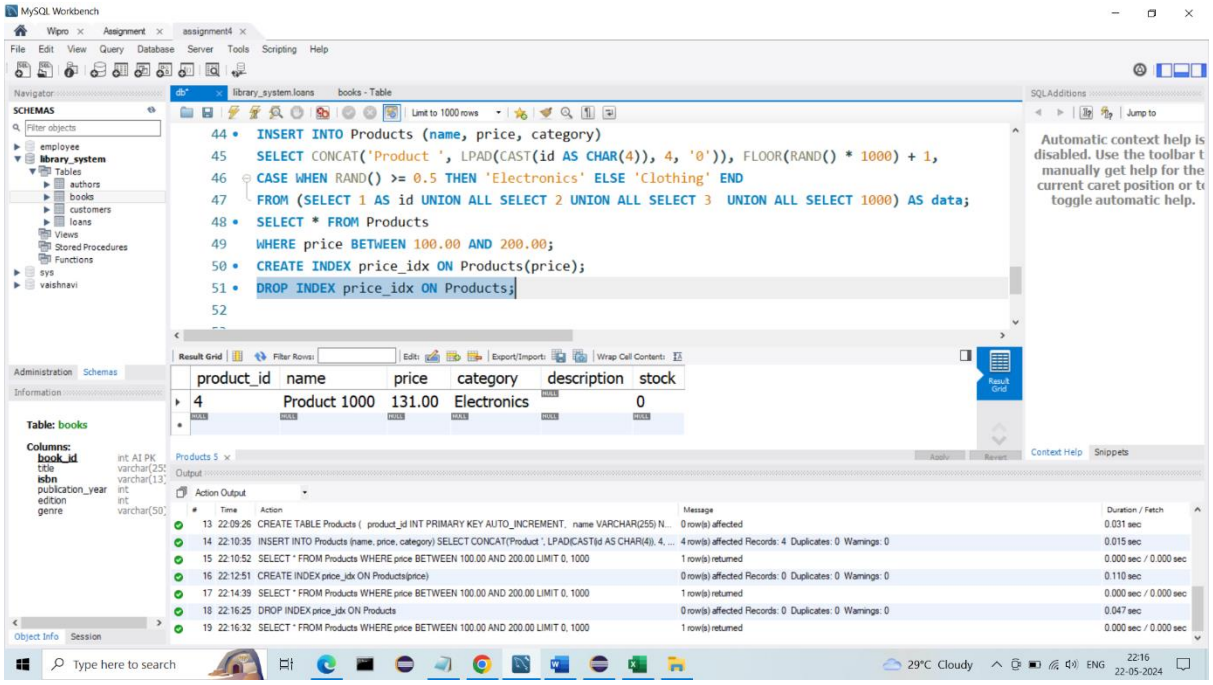
Impact on Query Performance:

Now, running the same query that filters by price range will utilize the index. The database engine can

efficiently navigate the index to locate products within the specified range, significantly reducing the time it takes to execute the query.



3. Dropping the Index: -



Re-running the Query:

Without the index, the database engine reverts to scanning the entire Products table, potentially leading to slower query execution, especially for large datasets.