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BSCpE-3B2

Laboratory Activity 7:

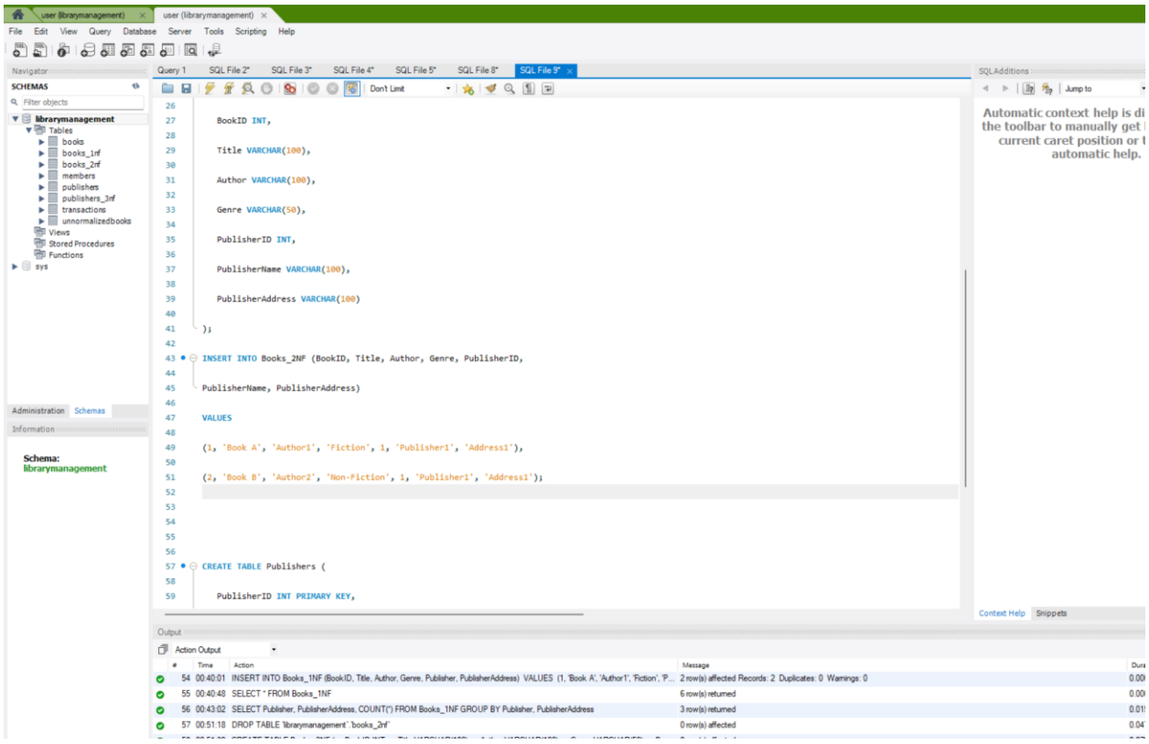
Laboratory Title: Normalization - Third Normal Form (3NF)
Chapter No. and Topic: Chapter 3 - Database Design and Modeling
Discussions:
This activity will guide students through converting a table to the Third Normal Form (3NF) by removing transitive dependencies.

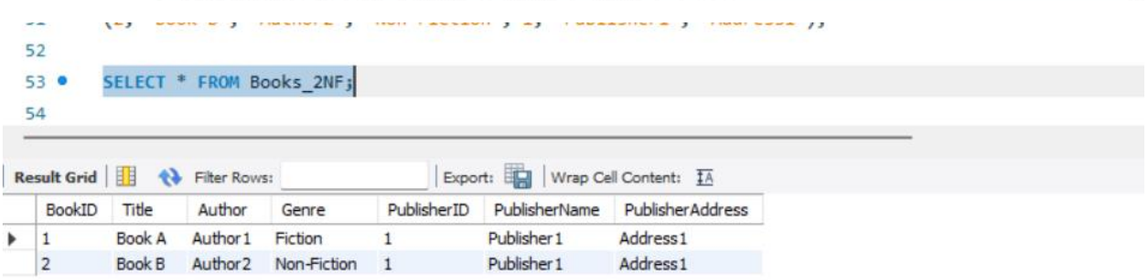
Activity Description:
Normalize a table in 2NF to 3NF by eliminating transitive dependencies.

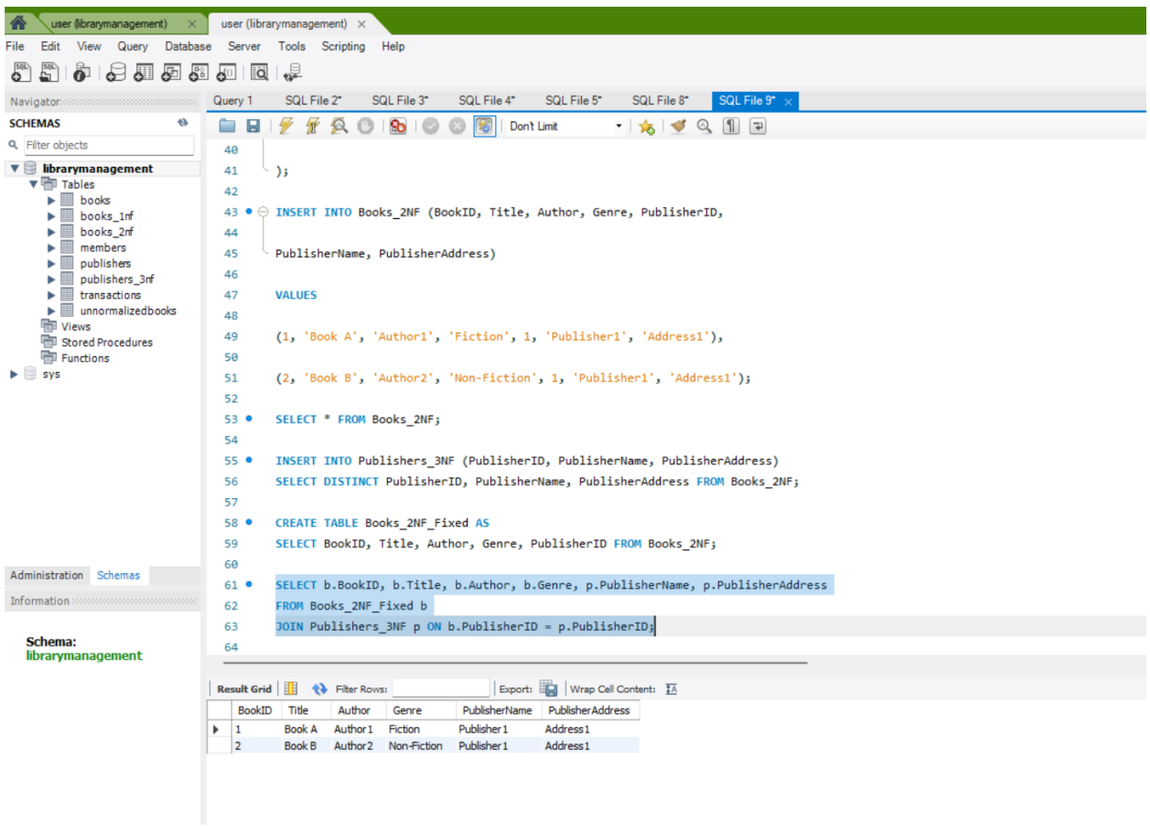
Objectives:

- Achieve 3NF by eliminating transitive dependencies.

Result:
The table is now in 3NF, with no transitive dependencies.







Additional Questions/Discussions:

- What are transitive dependencies, and why should they be eliminated?

  A **transitive dependency** occurs when a non-key column depends on another non-key column rather than directly on the primary key. Eliminating them ensures that all attributes depend **only** on the primary key, improving database consistency.

- How does 3NF improve data integrity?

  3NF prevents **redundant data** and ensures that changes to one column do not lead to anomalies, making updates and deletions more efficient.

Conclusions:

The table is now in 3NF, ensuring minimal redundancy and improved data integrity. Each column directly depends on the primary key, preventing anomalies and maintaining consistency.