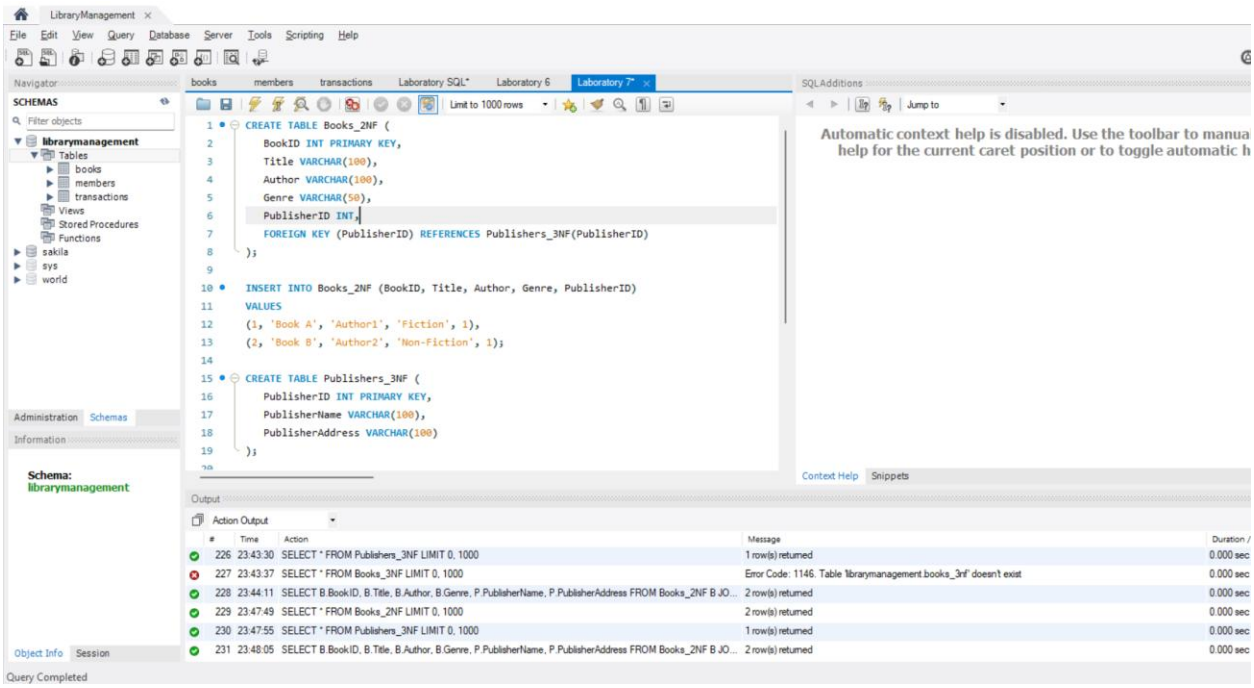
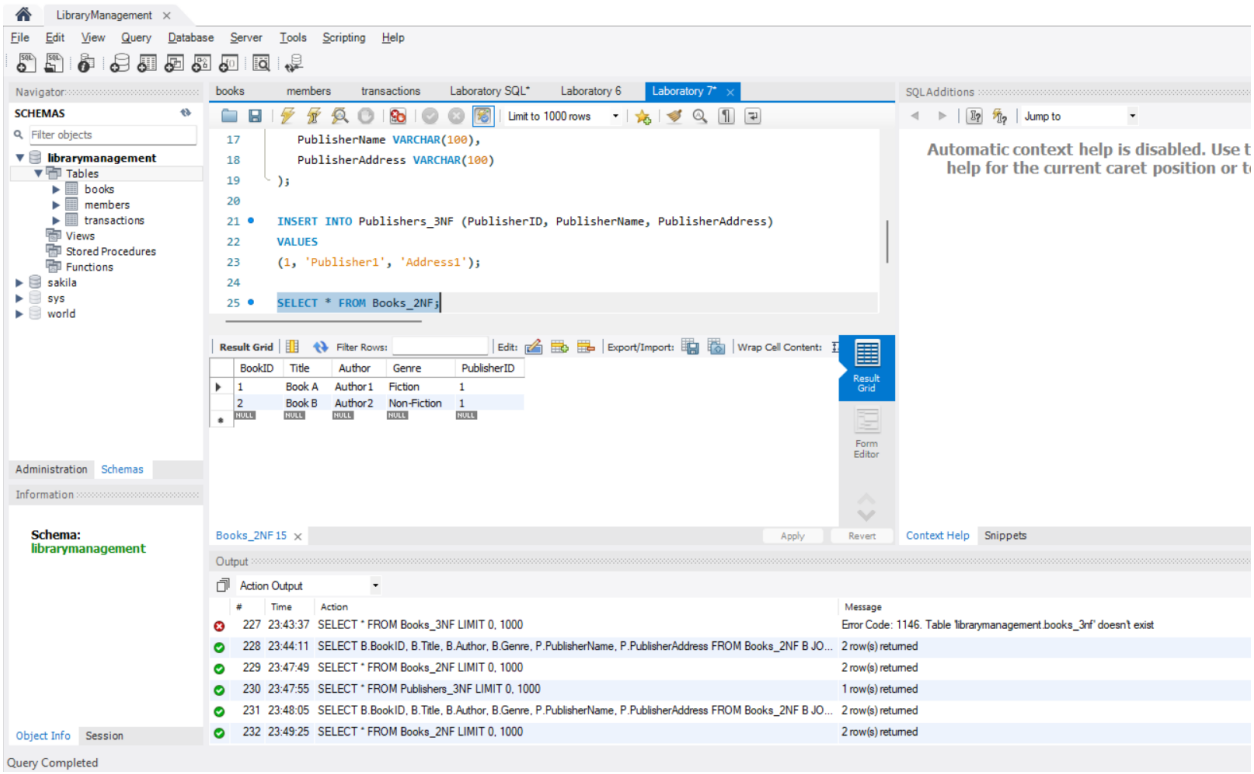
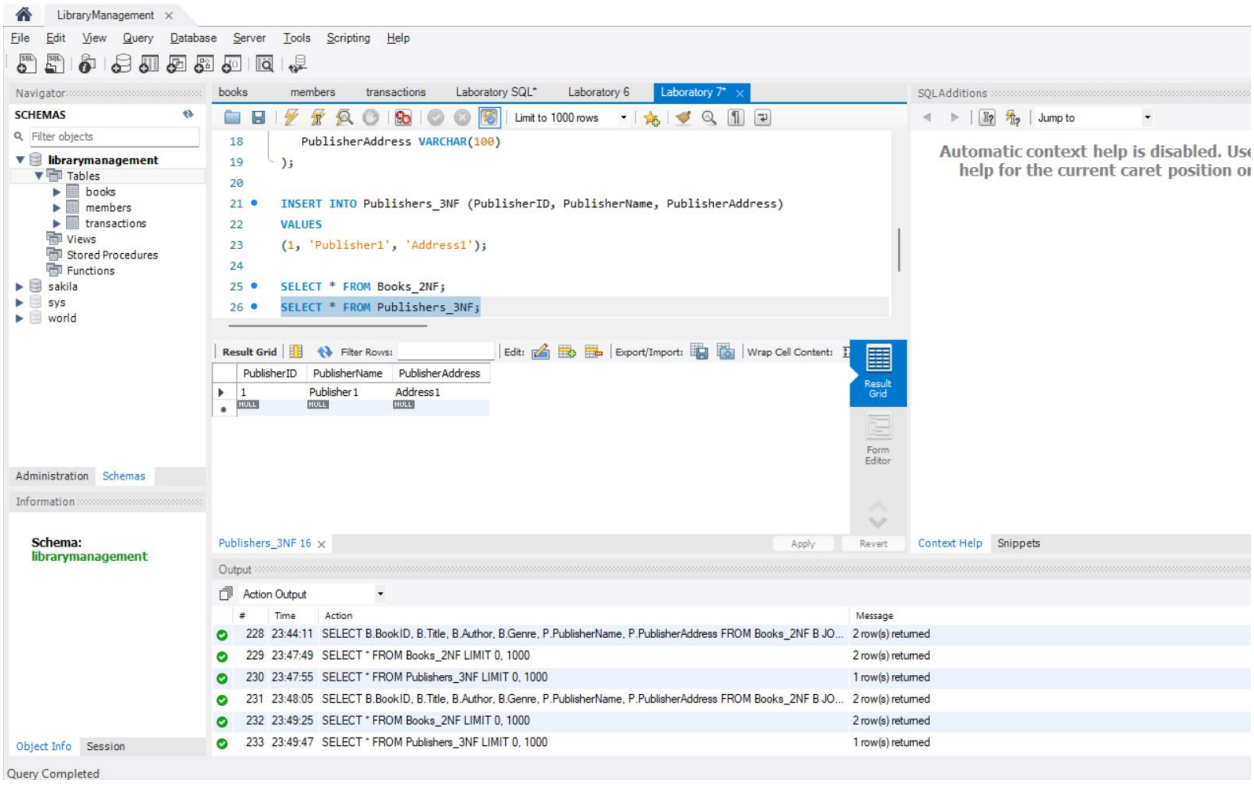
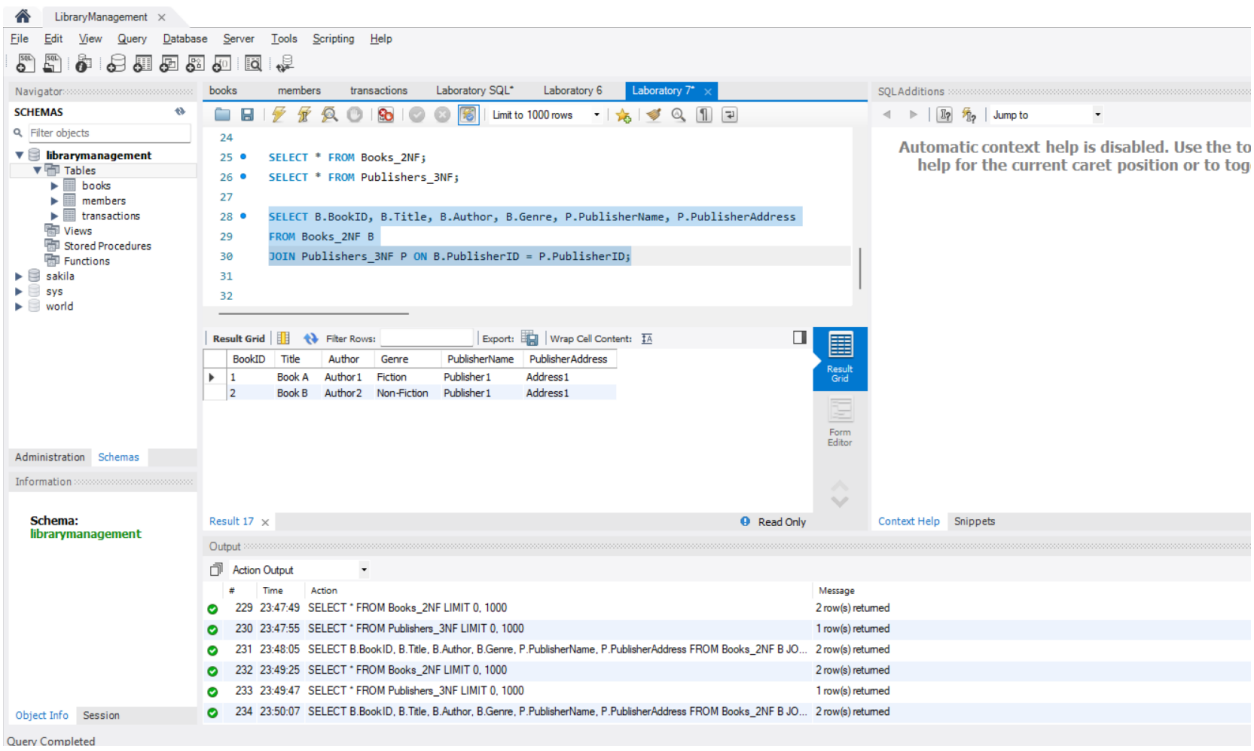
JOHN CARLO S. GUMAOD

Laboratory Activity 7:






LibraryManagement
File Edit View Query Database Server Tools Scripting Help
Navigator
SCHEMAS
Filter objects
librarymanagement
Tables
books
members
transactions
Views
Stored Procedures
Functions
sakila
sys
world
Administration Schemas
Information
Schema:
librarymanagement
Object Info Session
books members transactions Laboratory SQL* Laboratory 6 Laboratory 7*
Limit to 1000 rows
18 PublisherAddress VARCHAR(100)
19);
20
21 INSERT INTO Publishers_3NF (PublisherID, PublisherName, PublisherAddress)
22 VALUES
23 (1, 'Publisher1', 'Address1');
24
25 SELECT * FROM Books_2NF;
26 SELECT * FROM Publishers_3NF;
Result Grid Filter Rows: Edit: Export/Import: Wrap Cell Content:
PublisherID PublisherName PublisherAddress
1 Publisher 1 Address 1
NULL NULL NULL
Result Grid
Form Editor
Publishers_3NF 16
Apply Revert
SQLAdditions
Jump to
Automatic context help is disabled. Use
help for the current caret position or
Context Help Snippets
Output
Action Output
Time Action Message
228 23:44:11 SELECT B.BookID, B.Title, B.Author, B.Genre, P.PublisherName, P.PublisherAddress FROM Books_2NF B JO... 2 row(s) returned
229 23:47:49 SELECT * FROM Books_2NF LIMIT 0, 1000 2 row(s) returned
230 23:47:55 SELECT * FROM Publishers_3NF LIMIT 0, 1000 1 row(s) returned
231 23:48:05 SELECT B.BookID, B.Title, B.Author, B.Genre, P.PublisherName, P.PublisherAddress FROM Books_2NF B JO... 2 row(s) returned
232 23:49:25 SELECT * FROM Books_2NF LIMIT 0, 1000 2 row(s) returned
233 23:49:47 SELECT * FROM Publishers_3NF LIMIT 0, 1000 1 row(s) returned
Query Completed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Schema:
librarymanagement
Object Info Session
books members transactions Laboratory SQL* Laboratory 6 Laboratory 7*
Limit to 1000 rows
24
25 SELECT * FROM Books_2NF;
26 SELECT * FROM Publishers_3NF;
27
28 SELECT B.BookID, B.Title, B.Author, B.Genre, P.PublisherName, P.PublisherAddress
29 FROM Books_2NF B
30 JOIN Publishers_3NF P ON B.PublisherID = P.PublisherID;
31
32
Result Grid Filter Rows: Export: Wrap Cell Content:
BookID Title Author Genre PublisherName PublisherAddress
1 Book A Author 1 Fiction Publisher 1 Address 1
2 Book B Author 2 Non-Fiction Publisher 1 Address 1
Result Grid
Form Editor
Result 17
Read Only
SQLAdditions
Jump to
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229 23:47:49 SELECT * FROM Books_2NF LIMIT 0, 1000 2 row(s) returned
230 23:47:55 SELECT * FROM Publishers_3NF LIMIT 0, 1000 1 row(s) returned
231 23:48:05 SELECT B.BookID, B.Title, B.Author, B.Genre, P.PublisherName, P.PublisherAddress FROM Books_2NF B JO... 2 row(s) returned
232 23:49:25 SELECT * FROM Books_2NF LIMIT 0, 1000 2 row(s) returned
233 23:49:47 SELECT * FROM Publishers_3NF LIMIT 0, 1000 1 row(s) returned
234 23:50:07 SELECT B.BookID, B.Title, B.Author, B.Genre, P.PublisherName, P.PublisherAddress FROM Books_2NF B JO... 2 row(s) returned
Query Completed

Additional Questions/Discussions:

- What are transitive dependencies, and why should they be eliminated?
    - Instead of relying directly on the primary key, transitive dependencies happen when a non-key attribute depends on another non-key attribute. Third Normal Form (3NF) should do away with them in order to increase data integrity, decrease redundancy, and guarantee that each attribute alone depends on the primary key, which will make maintenance and updates more effective.

- How does 3NF improve data integrity?
    - Third Normal Form (3NF) ensures that all non-key attributes rely solely on the primary key, hence improving data integrity by removing transitive dependencies. By keeping related data in different tables, this saves redundancy, minimizes data anomalies, and preserves consistency, which improves the accuracy and efficiency of updates and deletions.

Conclusions:

- Since all non-key attributes rely solely on the primary key, Third Normal Form (3NF) guarantees that there are no transitive dependencies. 3NF enhances data integrity, decreases redundancy, and speeds up updates by dividing similar data into separate tables and connecting them via foreign keys. This produces a database design that is scalable, maintainable, and well-structured.