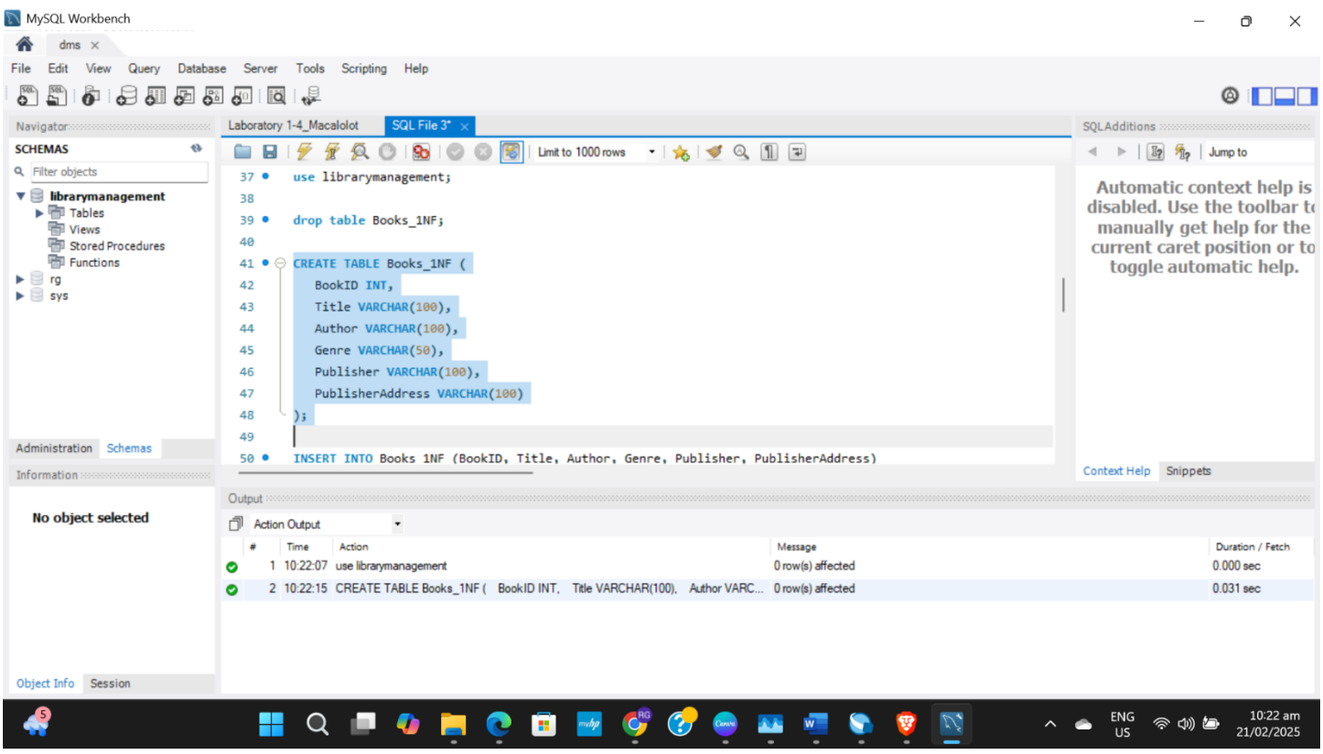
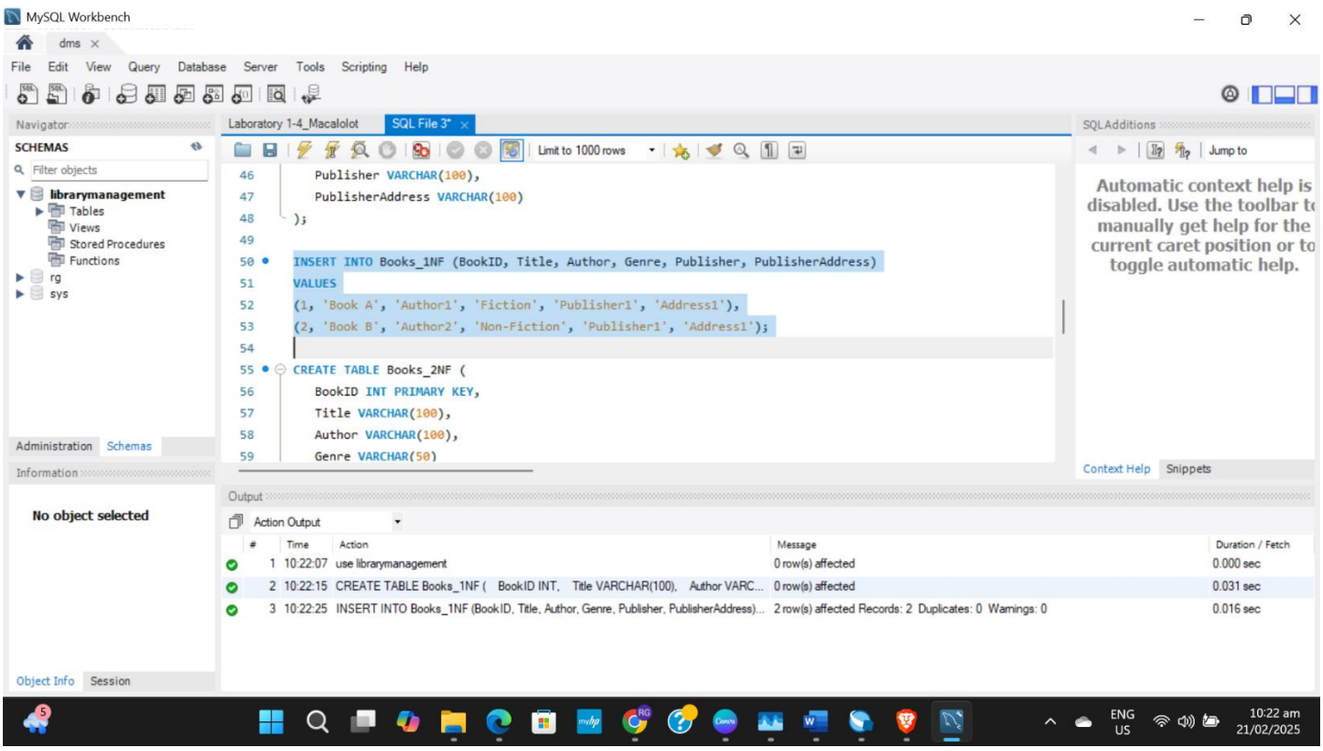
Laboratory Activity 6: Normalization - Second Normal Form (2NF)

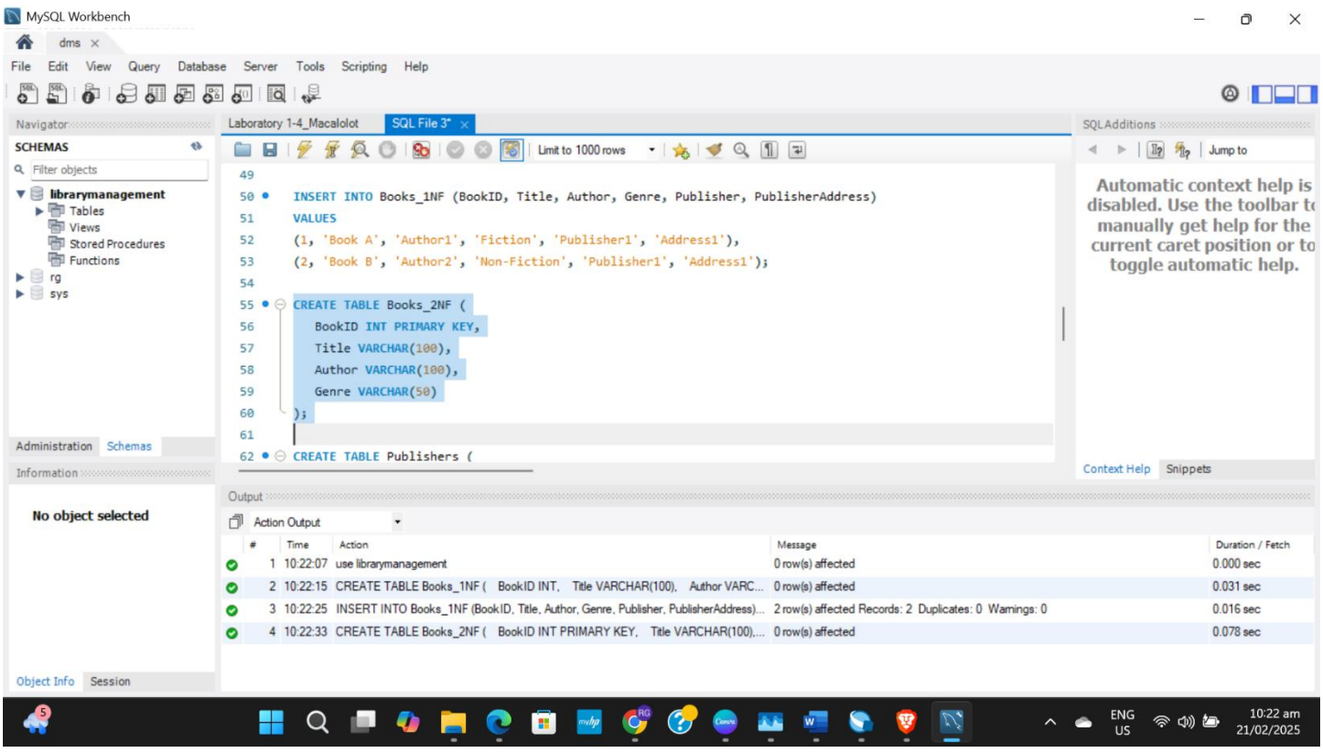
```
CREATE TABLE Books_1NF (
  BookID INT,
  Title VARCHAR(100),
  Author VARCHAR(100),
  Genre VARCHAR(50),
  Publisher VARCHAR(100),
  PublisherAddress VARCHAR(100)
);
```



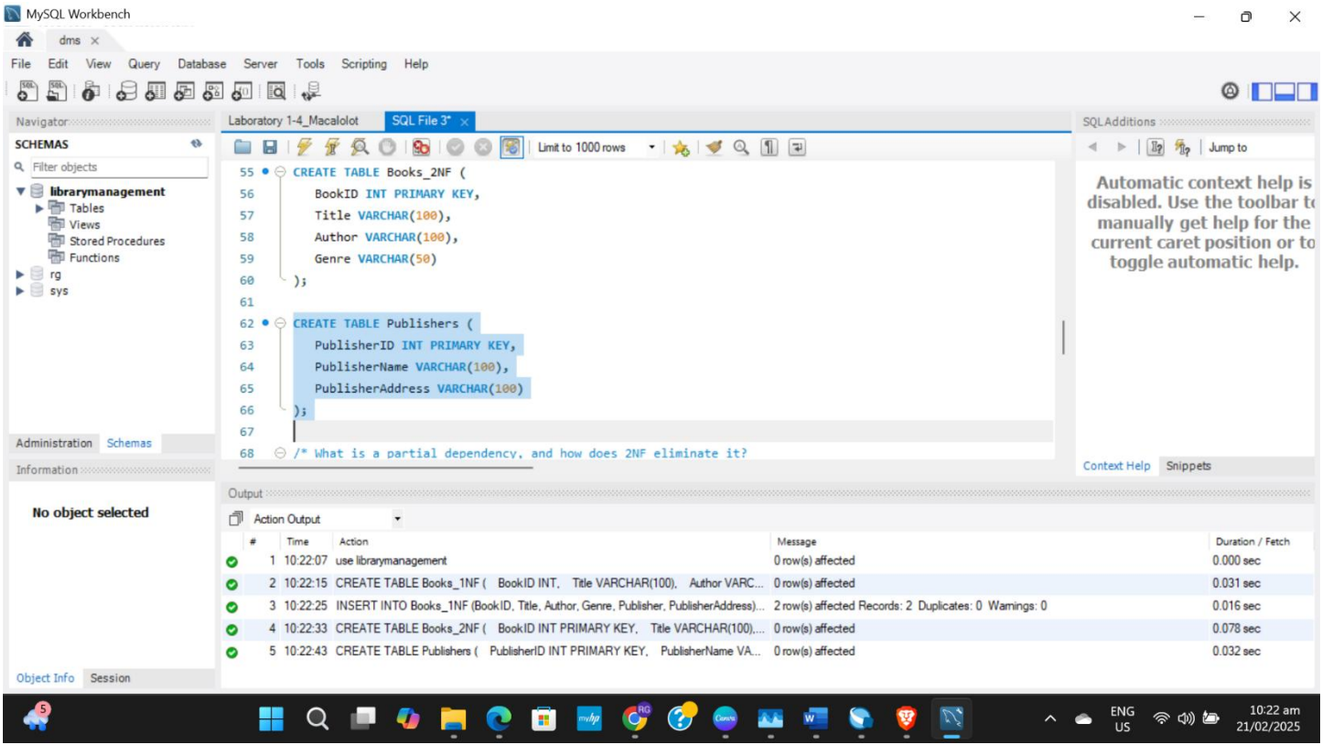

```
INSERT INTO Books_1NF (BookID, Title, Author, Genre, Publisher, PublisherAddress)
VALUES
(1, 'Book A', 'Author1', 'Fiction', 'Publisher1', 'Address1'),
(2, 'Book B', 'Author2', 'Non-Fiction', 'Publisher1', 'Address1');
```




```
CREATE TABLE Books_2NF (
  BookID INT PRIMARY KEY,
  Title VARCHAR(100),
  Author VARCHAR(100),
  Genre VARCHAR(50)
);
```




```
CREATE TABLE Publishers (
  PublisherID INT PRIMARY KEY,
  PublisherName VARCHAR(100),
  PublisherAddress VARCHAR(100)
);
```



What is a partial dependency, and how does 2NF eliminate it?

A partial dependency occurs when a non-key attribute depends on only a part of the primary key, and 2NF (Second Normal Form) eliminates it by removing partial dependencies, ensuring that each non-key attribute depends on the entire primary key.

How do foreign keys help maintain data integrity?

Foreign keys help maintain data integrity by establishing relationships between tables, ensuring that data is consistent and accurate, and preventing orphaned or inconsistent data by referencing the primary key of the related table.

Conclusions: By normalizing a table to 2NF, we have successfully eliminated partial dependencies and improved data integrity by ensuring that each non-key attribute depends on the entire primary key, making it easier to manage and maintain accurate data.