**Project – 2: BookstoreDB Schema Mastery**

**A SQL DDL Command Project**

**Project Overview**

* Your task is to design, implement, and modify a database for a fictional bookstore. This comprehensive project will involve creating a detailed schema including tables for books, authors, and sales. You'll manage this database through various stages of its lifecycle, using SQL DDL commands to adapt to new requirements, manage data, and maintain the database's structure efficiently.

**Initial Database Schema Details**

* Tables and Attributes
  + Books Table
    - BookID (INT, Primary Key): A unique identifier for each book.
    - Title (VARCHAR(255)): The title of the book.
    - AuthorID (INT): A foreign key linking to the Authors table.
    - Price (DECIMAL(10,2)): The price of the book.
    - PublicationDate (DATE): The date the book was published.
    - Genre (VARCHAR(100), to be added later): The genre of the book.
  + Authors Table
    - AuthorID (INT, Primary Key): A unique identifier for each author.
    - Name (VARCHAR(255)): The name of the author.
    - Bio (TEXT): A brief biography of the author.
  + Sales Table
    - SaleID (INT, Primary Key): A unique identifier for each sale transaction.
    - BookID (INT): A foreign key linking to the Books table.
    - QuantitySold (INT): The number of copies sold in the transaction.
    - SaleDate (DATE): The date of the sale.
* Relationships
  + Books to Authors: A many-to-one relationship where each book is written by one author, but an author can write many books. This is established through the AuthorID in the Books table as a foreign key linking to the AuthorID in the Authors table.
  + Sales to Books: A many-to-one relationship where each sale transaction involves one specific book, but a book can be involved in many sale transactions. This relationship is managed through the BookID in the Sales table as a foreign key linking to the BookID in the Books table.

**Project Tasks Revisited with Details**

* Database and Table Creation
  + Use CREATE TABLE statements to create the Books, Authors, and Sales tables with the attributes mentioned above.
* Schema Modification
  + Implement changes such as adding the Genre column to the Books table, altering data types, and adding constraints for data integrity.
* Data Management
  + Prepare for end-of-year data reset by drafting a TRUNCATE TABLE command for the Sales table.
* Schema Cleanup
  + If the bookstore decides to integrate author details directly into the Books table, removing the need for a separate Authors table, draft the necessary DROP TABLE command.
* Database Restructuring
  + Reflect changes in the bookstore's inventory system by renaming the Books table to better suit a wider range of materials.

**Additional Requirements**

* Entity-Relationship Diagram (ERD): Sketch an ERD to visually represent the tables, their attributes, and the relationships between them. This will help in understanding the structure and relations before implementing them.
* Data Integrity: Consider and implement key constraints, foreign keys, and any other constraints necessary to maintain data integrity across the bookstore database.
* Reflective Analysis: In your submission, include an analysis of how each SQL DDL command used in this project contributes to effective database management and adaptability over time.

**Submission Instructions**

***Your project submission should include SQL statements for each task, an ERD, explanations of your design choices, and a reflective analysis. Ensure clarity and organization in your documentation, labeling each section of your work clearly.***