**This database design project was created for the final project in my Database Design and Management class, a course taken while pursuing a B.S. Information Technology degree. The project is created in response to the following scenario and prompt:**

**Scenario**

Books’R’Us is a local bookstore that started in 1978 in a small New England town. Books’R’Us has been able to withstand the challenges of larger book store chains, as well as the internet giant Amazon.com, by offering new and used books and other products in a comfortable location that includes a café with free Wi-Fi. Books’R’Us recently purchased another local bookstore called Great Books, USA, from an owner who is retiring. Both businesses use a simple bookkeeping system that includes Microsoft Excel. The owners of Books’R’Us, Tom and Sarah Smith, would like a more efficient way to store inventory data and report on the various business essentials. They are also preparing to offer e-commerce on their website. A consulting firm has recommended capturing information in a database and linking access to the database for each store. Tom and Sarah purchased Microsoft SQL Server to do this. The consulting firm has hired you to complete the database for Books’R’Us. In addition to creating the database, you will provide a report for your supervisor at the consulting firm; this report should describe the rationale for and proposed development of the database. Imagine that you have interviewed the store owners, Tom and Sarah Smith, and these are the questions with which they are most concerned:

1. How many books are sold each month by the publisher? This is important because quantity discounts are available from the publisher.
2. Which authors are the biggest sellers of books in our stores? This is important because the publisher offers discounts for certain authors each month.
3. What books are associated with each publisher?
4. What are the most popular products besides books that are sold in each store? In addition to books, the stores sell magazines, café-specific products like coffee and pastries, and various gift products.
5. From what region(s) (by ZIP code) do customers visit our stores? This is important because it will assist with future marketing efforts.
6. 6. What customer data must be stored for the e-commerce portion of the website?

**Prompt**

Your database and report should answer the following prompt:

Create a database that meets the needs of the store owners. In addition to the database, you will submit a report that includes several models and diagrams that you completed earlier in the course to inform your database creation; you will resubmit these models and diagrams after incorporating your instructor’s feedback. Specifically, the following critical elements must be addressed:

# Database: You will use your entity-relationship diagram, relational model, functional dependencies diagram, and functional relational schema to inform the creation of your database. These will be submitted as part of your report.

## Tables: Create at least four tables that will display the data that is important to the store owners. Identify the primary and foreign keys that are necessary to relate the tables. Include screenshots that show the tables you created.

## Import Data: Use SQL statements to import the data that you previously created in this class to the tables you created. You should have at least five records for each table. Include screenshots that show the populated tables annotated with the SQL statements that you used.

## Queries: After you have populated the tables, write queries to extract the data to answer the owner’s questions. Include screenshots that show each query and the corresponding query results.

# Report: Although some parts of the report will be completed before or during the creation of the database, the report as a whole will be written after you have created the database.

## Overview: Provide a concise overview of the problem you are solving and the database that you created to address the problem.

## Justification: Analyze the business information storage problem you are solving. Why is the database the appropriate solution to the problem?

## Benefits: What benefits in data management does the database you created have over a file system like the one the stores were previously using? What features and functions does a database have that a file system does not?

## Features: Describe each of the major features of the database you created. Why are these features required?

## Design: How did you design the database to manage the stores’ data? Discuss the tables you created and their relationships, including in your discussion the table name, attributes (field names and data types), and keys (primary and foreign). Consider including a diagram to support your response to this question.

## Entity-Relationship Diagram (ERD): Develop an entity-relationship diagram that has an appropriate set of attributes for each entity.

## Relational Model: Develop a relational model that is logical and complies with the requirements in your ERD.

## Functional Dependencies Diagram: Based on your ERD, develop a functional dependencies diagram that accurately normalizes the data into third normal form (3NF).

## Functional-Relational Schema: Based on your ERD and dependencies diagram, develop a relational schema that accurately normalizes the data into 3NF.