**Sql Database and Schema Setup**

1. Domain: Library
2. Creating Database and Tables

* Create database

Command: **CREATE DATABASE Library;**

**USE Library**;

* Categories table

Command:**CREATE TABLE Categories (**

**category\_id INT PRIMARY KEY,**

**category\_name VARCHAR(100) NOT NULL**

**);**

* Authors table

**CREATE TABLE Authors (**

**author\_id INT PRIMARY KEY,**

**name VARCHAR(100) NOT NULL**

**);**

* Books table

Commands:**CREATE TABLE Books (**

**book\_id INT PRIMARY KEY,**

**title VARCHAR(200) NOT NULL,**

**category\_id INT,**

**published\_year INT,**

**FOREIGN KEY (category\_id) REFERENCES Categories(category\_id)**

**);**

* BookAuthor mapping table (many-to-many)

Command:**CREATE TABLE BookAuthor (**

**book\_id INT,**

**author\_id INT,**

**PRIMARY KEY (book\_id, author\_id),**

**FOREIGN KEY (book\_id) REFERENCES Books(book\_id),**

**FOREIGN KEY (author\_id) REFERENCES Authors(author\_id)**

**);**

* Members table

Command:**CREATE TABLE Members (**

**member\_id INT PRIMARY KEY,**

**name VARCHAR(100) NOT NULL,**

**email VARCHAR(100) UNIQUE NOT NULL,**

**join\_date DATE NOT NULL**

**);**

* Loans table

Command:**CREATE TABLE Loans (**

**loan\_id INT PRIMARY KEY,**

**book\_id INT,**

**member\_id INT,**

**loan\_date DATE,**

**return\_date DATE,**

**FOREIGN KEY (book\_id) REFERENCES Books(book\_id),**

**FOREIGN KEY (member\_id) REFERENCES Members(member\_id)**

**);**

**Step2: ER Diagram**

**Categories ───< Books >─── BookAuthor >─── Authors**

**│**

**Loans**

**│**

**Members**