**Fall 2023 Database Systems (CSCI-3615 - 10344)**

**Assignment 2**

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**1:** **Create schemas.**

**a.Schema for a bookstore will look like this:**

**Books:**

Book\_id **(PK)**

Author\_id **(FK)**

Title

Num\_books

Price

**Author:**

Author\_id **(PK)**

Author\_name\_surname

Author\_dob

**Orders:**

Order\_id **(PK)**

Customer\_id **(FK)**

Order\_date

Order\_price

**Customers:**

Customer\_id **(PK)**

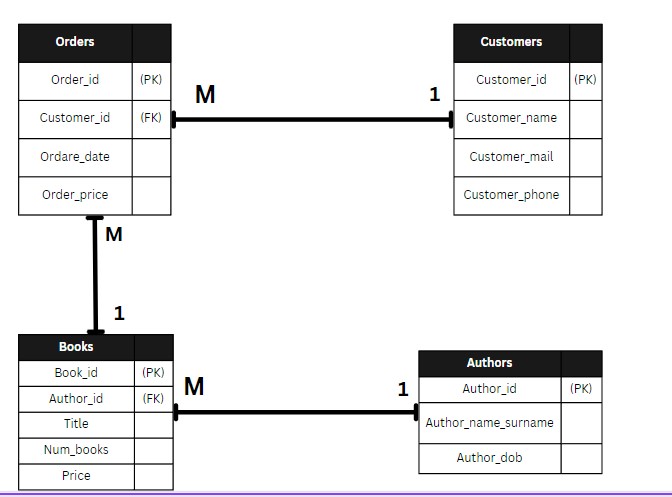
Customer\_name

Customer\_mail

Customer\_phone

**b.** This schema maintains the relationships between books, authors, customers, and orders. The primary keys (PK) are defined for each table to uniquely identify the records within them. The foreign keys (FK) establish relationships between different tables where necessary.

**c.** Establishing foreign key relationships between the tables helps maintain referential integrity. Here are the foreign key relationships in the schema: Books Table: author\_id (Foreign Key referencing Author table's author\_id) Orders Table: customer\_id (Foreign Key referencing Customers table's customer\_id)

**d.**

**e.**

-- Create Authors table with serial ID

CREATE TABLE Authors (

Author\_id SERIAL PRIMARY KEY,

Author\_name\_surname VARCHAR(100),

Author\_dob DATE

);

-- Create Books table with serial ID

CREATE TABLE Books (

Book\_id SERIAL PRIMARY KEY,

Author\_id INT,

Title VARCHAR(100),

Num\_books INT,

Price DECIMAL(10, 2),

FOREIGN KEY (Author\_id) REFERENCES Authors(Author\_id)

);

-- Create Orders table with serial ID

CREATE TABLE Orders (

Order\_id SERIAL PRIMARY KEY,

Customer\_id INT,

Order\_date DATE,

Order\_price DECIMAL(10, 2),

FOREIGN KEY (Customer\_id) REFERENCES Customers(Customer\_id)

);

-- Create Customers table with serial ID

CREATE TABLE Customers (

Customer\_id SERIAL PRIMARY KEY,

Customer\_name VARCHAR(100),

Customer\_mail VARCHAR(100),

Customer\_phone VARCHAR(20)

);

**2:** **Connect to your database using a Java application.**

1. **I have used jdbc to connect my Java and DataBase and for that I created a specific db\_connection.java file code of which is provided below:**

package org.example;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.SQLException;

public class db\_connection {

private static final String URL = "jdbc:postgresql://localhost:5432/postgres";

private static final String USER = "postgres";

private static final String PASS = "1234";

public static Connection getConnection() throws SQLException {

return DriverManager.getConnection(URL, USER, PASS);

}

}

**3:** **Implement CRUD operations**

This is part of my assignment where I struggled the most I couldn’t make it properly 100% but still tried and created a little program that can store the data that you implement in program to the DataBase that you are connected.