Assignment 2

Assignment 2: Design a database schema for a library system, including tables, fields, and constraints like NOT NULL, UNIQUE, and CHECK. Include primary and foreign keys to establish relationships between tables.

Designing a database schema for a library system. Here's an example schema with tables, fields, and constraints:

Tables:

1.Books:

Fields:

- Book_ID (Primary Key)
- Title
- Author
- Genre
- Publication_Year
- ISBN
- **Constraints:**
- Book_ID (NOT NULL, UNIQUE)
- Title (NOT NULL)
- ISBN (UNIQUE)

2.Authors:

Fields:

- Author_ID (Primary Key)
- Author_Name
- Birth_Year

- **Constraints:**
- Author_ID (NOT NULL, UNIQUE)
- Author_Name (NOT NULL)

3. Members:

- **Fields:**
- Member_ID (Primary Key)
- Name
- Email
- Phone
- Address
- **Constraints:**
- Member_ID (NOT NULL, UNIQUE)
- Name (NOT NULL)

4.Borrowings:

- **Fields:**
- Borrowing_ID (Primary Key)
- Book_ID (Foreign Key referencing Books)
- Member_ID (Foreign Key referencing Members)
- Borrow_Date
- Return_Date
- **Constraints:**
- Borrowing_ID (NOT NULL, UNIQUE)
- Book_ID (NOT NULL)
- Member_ID (NOT NULL)
- Return_Date (CHECK: Return_Date >= Borrow_Date)

Relationships:

- Each book can have one or more authors, establishing a one-to-many relationship between Books and Authors.
- Each borrowing is associated with one book and one member, establishing a many-to-one relationship between Borrowings and both Books and Members.

This schema provides a foundation for managing books, authors, members, and borrowings in a library system, including constraints to ensure data integrity.