

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.

```
CREATE TABLE Authors (  
    AuthorID INT PRIMARY KEY,  
    FirstName VARCHAR(50) NOT NULL,  
    LastName VARCHAR(50) NOT NULL,  
    Email VARCHAR(100) UNIQUE,  
    Phone VARCHAR(20)  
);
```

```
CREATE TABLE Books (  
    BookID INT PRIMARY KEY,  
    Title VARCHAR(100) NOT NULL,  
    Publisher VARCHAR(50),  
    PublicationDate DATE,  
    ISBN VARCHAR(20) UNIQUE,  
    AuthorID INT,  
    FOREIGN KEY (AuthorID) REFERENCES Authors(AuthorID)  
);
```

```
CREATE TABLE Categories (  
    CategoryID INT PRIMARY KEY,  
    CategoryName VARCHAR(50) NOT NULL  
);
```

```
CREATE TABLE BookCategories (  
    BookID INT,  
    CategoryID INT,  
    PRIMARY KEY (BookID, CategoryID),  
    FOREIGN KEY (BookID) REFERENCES Books(BookID),  
    FOREIGN KEY (CategoryID) REFERENCES Categories(CategoryID)  
);
```

```
CREATE TABLE Borrowers (  
    BorrowerID INT PRIMARY KEY,  
    Name VARCHAR(100) NOT NULL,  
    Email VARCHAR(100) UNIQUE,  
    Phone VARCHAR(20)  
);
```

```
CREATE TABLE Borrowing (  
    BorrowingID INT PRIMARY KEY,  
    BookID INT,  
    BorrowerID INT,  
    BorrowDate DATE,  
    ReturnDate DATE,  
    FOREIGN KEY (BookID) REFERENCES Books(BookID),  
    FOREIGN KEY (BorrowerID) REFERENCES Borrowers(BorrowerID)  
);
```

```
CREATE TABLE Fines (  
    FineID INT PRIMARY KEY,  
    BorrowingID INT,  
    FineAmount DECIMAL(5,2),  
    FineDate DATE,  
    FOREIGN KEY (BorrowingID) REFERENCES Borrowing(BorrowingID)  
);
```