CREATE TABLE Readers (

ReaderID INT IDENTITY(1,1) PRIMARY KEY,

FullName VARCHAR(100) NOT NULL,

DateOfBirth DATE NOT NULL,

RegistrationDate DATE NOT NULL

);

GO

CREATE TABLE LibraryCards (

CardID INT IDENTITY(1,1) PRIMARY KEY,

ReaderID INT NOT NULL,

IssueDate DATE NOT NULL,

FOREIGN KEY (ReaderID) REFERENCES Readers(ReaderID) ON DELETE CASCADE

);

GO

CREATE TABLE Books (

BookID INT IDENTITY(1,1) PRIMARY KEY,

Title VARCHAR(200) NOT NULL,

PublicationYear INT CHECK (PublicationYear >= 0),

AvailableCopies INT NOT NULL CHECK (AvailableCopies >= 0)

);

GO

CREATE TABLE Authors (

AuthorID INT IDENTITY(1,1) PRIMARY KEY,

FullName VARCHAR(100) NOT NULL

);

GO

CREATE TABLE BookAuthors (

BookID INT NOT NULL,

AuthorID INT NOT NULL,

PRIMARY KEY (BookID, AuthorID),

FOREIGN KEY (BookID) REFERENCES Books(BookID) ON DELETE CASCADE,

FOREIGN KEY (AuthorID) REFERENCES Authors(AuthorID) ON DELETE CASCADE

);

GO

CREATE TABLE Genres (

GenreID INT IDENTITY(1,1) PRIMARY KEY,

GenreName VARCHAR(50) NOT NULL UNIQUE

);

GO

CREATE TABLE BookGenres (

BookID INT NOT NULL,

GenreID INT NOT NULL,

PRIMARY KEY (BookID, GenreID),

FOREIGN KEY (BookID) REFERENCES Books(BookID) ON DELETE CASCADE,

FOREIGN KEY (GenreID) REFERENCES Genres(GenreID) ON DELETE CASCADE

);

GO

CREATE TABLE Borrowings (

BorrowingID INT IDENTITY(1,1) PRIMARY KEY,

CardID INT NOT NULL,

BookID INT NOT NULL,

BorrowDate DATE NOT NULL,

ReturnDate DATE,

FOREIGN KEY (CardID) REFERENCES LibraryCards(CardID) ON DELETE CASCADE,

FOREIGN KEY (BookID) REFERENCES Books(BookID) ON DELETE CASCADE

);

GO

CREATE TABLE Reminders (

ReminderID INT IDENTITY(1,1) PRIMARY KEY,

BorrowingID INT NOT NULL,

ReminderDate DATE NOT NULL,

FOREIGN KEY (BorrowingID) REFERENCES Borrowings(BorrowingID) ON DELETE CASCADE

);

GO

ALTER TABLE Genres

ALTER COLUMN GenreName VARCHAR(50) NOT NULL;

GO

ALTER TABLE Genres

ADD CONSTRAINT UQ\_GenreName UNIQUE (GenreName);

GO

ALTER TABLE Books

ALTER COLUMN AvailableCopies INT NOT NULL;

GO

ALTER TABLE Books

ADD CONSTRAINT DF\_AvailableCopies DEFAULT 0 FOR AvailableCopies;

GO

ALTER TABLE Books

ADD CONSTRAINT CHK\_AvailableCopies CHECK (AvailableCopies >= 0);

GO