Library Management and Fine System in Draw.io

Library Management and Fine System

Author

PK	**AuthorID**
	FullName
	Nationality
	BirthYear

Book

PK	**BookID**
	Title
FK	AuthorID
	Genre
	PublicationYear
	Status

Member

PK	**MemberID**
	FullName
	Contact
	Address
	Email

Staff

PK	**StaffID**
	FullName
	Role
	Phone
	Shift

Borrow

PK	**BorrowID**
	BookID
FK	MemberID
FK	StaffID
FK	
	BorrowDate
	DueDate
	BirthYear
	ReturnDate

Fine

PK	**FineID**
FK	BorrowID
	Amount
	PaymentDate
	Status
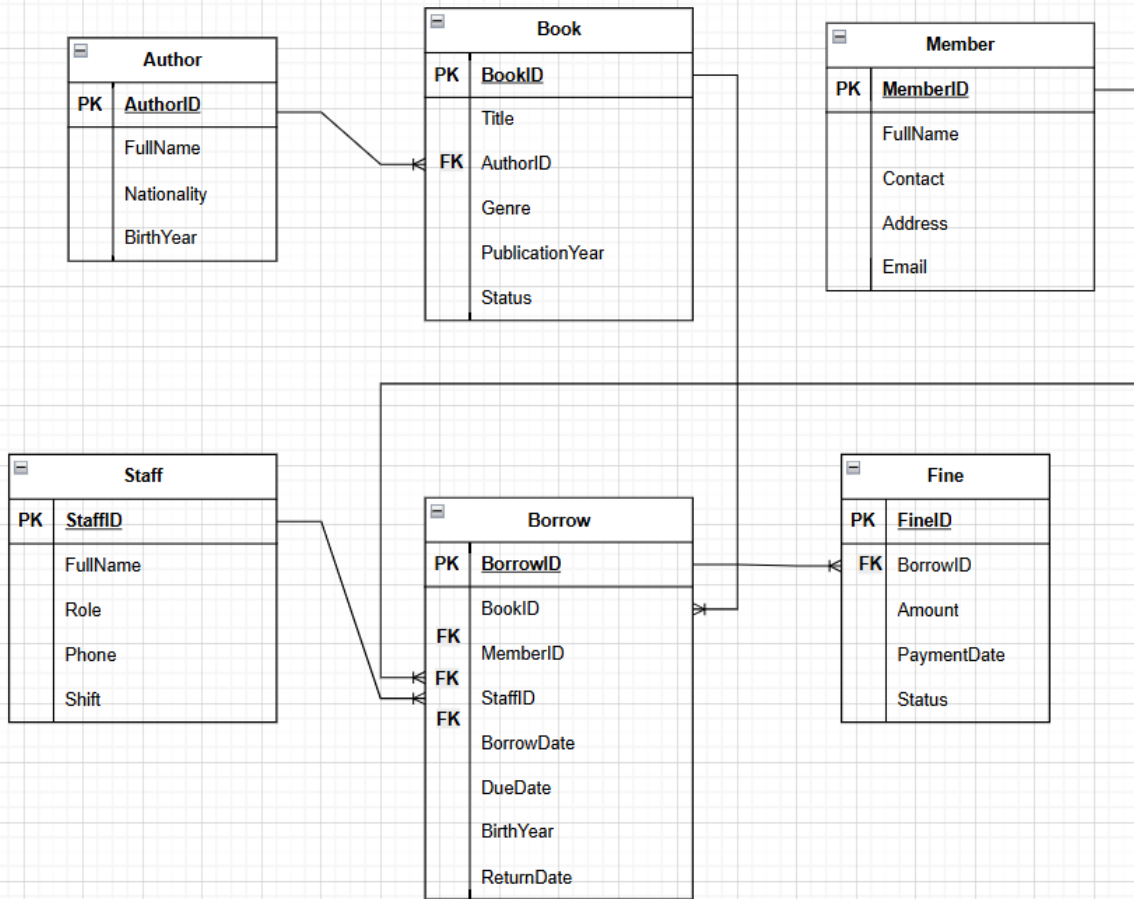
CREATING TABLES INTO POSTGRES

```sql
CREATE TABLE author (

    AuthorID SERIAL PRIMARY KEY,

    FullName VARCHAR(100),

    Nationality VARCHAR(50),

    BirthYear INT

);


CREATE TABLE book (

    BookID SERIAL PRIMARY KEY,

    Title VARCHAR(100),

    AuthorID INT,

    Genre VARCHAR(50),

    PublicationYear INT,

    Status VARCHAR(20),

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

);

INSERT INTO Author (FullName, Nationality, BirthYear) VALUES

('Chinua Achebe', 'Nigerian', 1930),

('Wole Soyinka', 'Nigerian', 1934),

('Chimamanda Ngozi Adichie', 'Nigerian', 1977),

('Albert Camus', 'French', 1913),

('George Orwell', 'British', 1903),

('Gabriel García Márquez', 'Colombian', 1927),

('Jane Austen', 'British', 1775),
```

('Mark Twain', 'American', 1835),

('Leo Tolstoy', 'Russian', 1828);

INSERT INTO Book (Title, AuthorID, Genre, PublicationYear, Status) VALUES

('Things Fall Apart', , 'Fiction', 1958, 'Available'),

('Petals of Blood', 8, 'Fiction', 1967, 'Available'),

('Ake: The Years of Childhood', 9, 'Autobiography', 1981, 'Available'),

('Half of a Yellow Sun', 10, 'Historical Fiction', 2006, 'Available'),

('The Stranger', 11, 'Philosophical Fiction', 1942, 'Available'),

('1984', 12, 'Dystopian', 1949, 'Available'),

('One Hundred Years of Solitude', 13, 'Magical Realism', 1967, 'Available'),

('Pride and Prejudice', 14, 'Romance', 1813, 'Available'),

('Adventures of Huckleberry Finn',15, 'Adventure', 1884, 'Available'),

('War and Peace', 16, 'Historical Fiction', 1869, 'Available');

Create table Fine

CREATE TABLE Fine (

    FineID SERIAL PRIMARY KEY,

    BorrowID INT NOT NULL,

    Amount NUMERIC(10,2) NOT NULL CHECK (Amount >= 0),

    PaymentDate DATE,

    Status VARCHAR(20) DEFAULT 'Unpaid',

    -- Foreign key with CASCADE delete

    CONSTRAINT fk_borrow FOREIGN KEY (BorrowID)

        REFERENCES Borrow (BorrowID)

        ON DELETE CASCADE

```sql
);
-- Insert a borrow and fine
INSERT INTO Borrow (BookID, MemberID, StaffID, BorrowDate, DueDate)
VALUES (1, 1, 1, CURRENT_DATE, CURRENT_DATE + INTERVAL '14 days');


INSERT INTO Fine (BorrowID, Amount)
VALUES (1, 500);


-- Delete borrow
DELETE FROM Borrow WHERE BorrowID = 1;
DELETE FROM Author WHERE AuthorID = 7;


select * from author
select * from book
select * from member




truncate table  author
truncate table book
-- CREATE SCHEMA sales;


CREATE TABLE sales.customers (
    customer_id SERIAL PRIMARY KEY,
    name TEXT NOT NULL,
    email TEXT UNIQUE,
```

```sql
    joined_date DATE DEFAULT CURRENT_DATE

);


CREATE TABLE sales.orders (

    order_id SERIAL PRIMARY KEY,

    customer_id INT REFERENCES sales.customers(customer_id),

    order_date DATE DEFAULT CURRENT_DATE,

    amount NUMERIC(10,2)

);

CREATE SCHEMA CUSTOMERS;


CREATE TABLE Customers.clients (

    client_id SERIAL PRIMARY KEY,

    first_name VARCHAR(50) NOT NULL,

    last_name VARCHAR(50),

    email VARCHAR(100) UNIQUE,

    phone VARCHAR(20),

    registered_date DATE DEFAULT CURRENT_DATE

);
```

Insert Sample Records

```sql
INSERT INTO Staff (StaffID, FullName, Role, Phone, Shift)

VALUES

(1, 'Alice Mukamana', 'Librarian', '+250788111001', 'Morning'),

(2, 'John Ndayisenga', 'Assistant Librarian', '+250788111002', 'Afternoon'),

(3, 'Grace Uwase', 'Library Clerk', '+250788111003', 'Morning'),

(4, 'Eric Habimana', 'Library Technician', '+250788111004', 'Evening'),
```

(5, 'Claudine Ingabire', 'Librarian', '+250788111005', 'Afternoon'),

(6, 'Patrick Mugisha', 'Library Clerk', '+250788111006', 'Morning'),

(7, 'Diane Uwimana', 'Assistant Librarian', '+250788111007', 'Evening'),

(8, 'Samuel Nkurunziza', 'Library Technician', '+250788111008', 'Morning'),

(9, 'Olivia Ishimwe', 'Library Clerk', '+250788111009', 'Afternoon'),

(10, 'Robert Twizeyimana', 'Librarian', '+250788111010', 'Evening');