

PostgreSQL: Library Management System

-- Connect to the database

```
CREATE DATABASE LibraryDB;  
\c LibraryDB;
```

-- Books Table

```
CREATE TABLE Books (  
    book_id SERIAL PRIMARY KEY,  
    title VARCHAR(150) NOT NULL,  
    author VARCHAR(100) NOT NULL,  
    year_published INT,  
    available_copies INT DEFAULT 1  
);
```

-- Members Table

```
CREATE TABLE Members (  
    member_id SERIAL PRIMARY KEY,  
    name VARCHAR(100) NOT NULL,  
    email VARCHAR(100) UNIQUE,  
    phone VARCHAR(20)  
);
```

-- BorrowRecords Table

```
CREATE TABLE BorrowRecords (  
    borrow_id SERIAL PRIMARY KEY,  
    book_id INT REFERENCES Books(book_id) ON DELETE CASCADE,  
    member_id INT REFERENCES Members(member_id) ON DELETE CASCADE,  
    borrow_date DATE NOT NULL,  
    return_date DATE  
);
```

-- Insert Books

```
INSERT INTO Books (title, author, year_published, available_copies) VALUES  
('Introduction to Databases', 'John Smith', 2015, 3),  
('Learning MySQL', 'Anna Brown', 2018, 2),  
('Advanced PHP Programming', 'David White', 2020, 4);
```

-- Insert Members

```
INSERT INTO Members (name, email, phone) VALUES  
('Alice Johnson', 'alice@example.com', '233501234567'),  
('Bob Anderson', 'bob@example.com', '233509876543'),  
('Cynthia Lee', 'cynthia@example.com', '233502345678');
```

-- Insert Borrow Records

```
INSERT INTO BorrowRecords (book_id, member_id, borrow_date, return_date)
VALUES
(1, 1, '2025-08-01', '2025-08-15'),
(2, 2, '2025-08-05', NULL), -- Not yet returned
(3, 3, '2025-08-10', '2025-08-20');
```