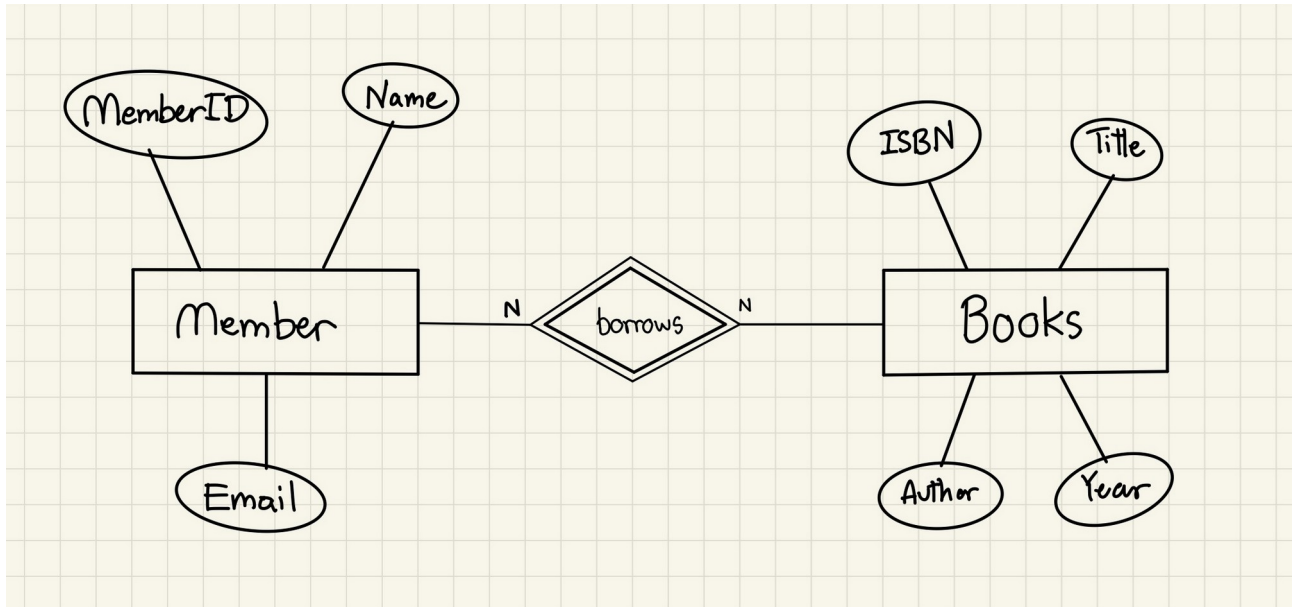


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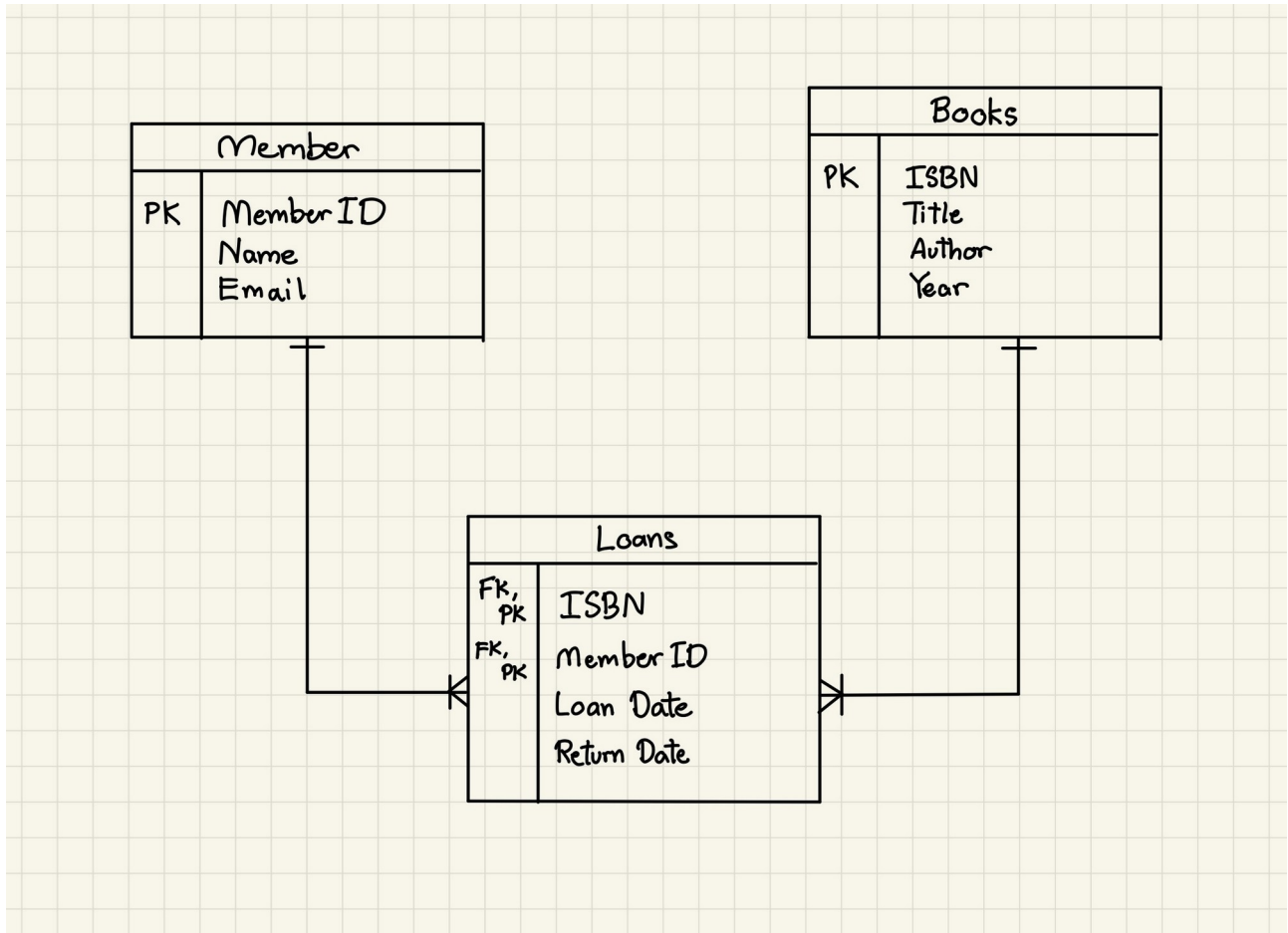
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ER Diagram



Relational Schema



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SQL Queries

SQL Query	Output
<pre>CREATE DATABASE library; CREATE TABLE book (isbn BIGINT PRIMARY KEY, title VARCHAR(50) NOT NULL, author VARCHAR(50) NOT NULL, year INT NOT NULL); CREATE TABLE member (member_id INT PRIMARY KEY, name VARCHAR(50), email VARCHAR(50) NOT NULL); CREATE TABLE loan (isbn BIGINT REFERENCES book(isbn), member_id INT REFERENCES member(member_id), loan_date DATE NOT NULL, return_date DATE NOT NULL, PRIMARY KEY(isbn, member_id));</pre>	<pre>postgres=# CREATE DATABASE library; CREATE DATABASE postgres=# \c library; You are now connected to database "library" as user "postgres". library=# CREATE TABLE book (isbn BIGINT PRIMARY KEY, title VARCHAR(50) NOT NULL, author VARCHAR(50) NOT NULL, year INT NOT NULL); library=# CREATE TABLE member (member_id INT PRIMARY KEY, name VARCHAR(50), email VARCHAR(50) NOT NULL); library=# CREATE TABLE loan (isbn BIGINT REFERENCES book(isbn), member_id INT REFERENCES member(member_id), loan_date DATE NOT NULL, return_date DATE NOT NULL, PRIMARY KEY(isbn, member_id)); CREATE TABLE CREATE TABLE CREATE TABLE</pre>
<pre>INSERT INTO book VALUES (9781927077030, 'The Three Principles of the People - San Min Chu I', 'Sun Yat- Sen', 2011), (9780717802418, 'The Communist Manifesto', 'Karl Marx, Friedrich Engels', 1848), (9780131103627, 'C Programming Language, 2nd Edition', 'Brian W. Kernighan, Dennis M. Ritchie', 1988); INSERT INTO member VALUES (10000001, 'Winnie The Pooh', 'winnieethepooh@gmail.com'), (10000002, 'Gary the Dinosaur', 'garythedino@gmail.com'); SELECT * FROM book; SELECT * FROM member;</pre>	<pre>library=# INSERT INTO book VALUES (9781927077030, 'The Three Principles of the People - San Min Chu I', 'Sun Yat-Sen', 2011), (9780717802418, 'The Communist Manifesto', 'Karl Marx, Friedrich Engels', 1848), (9780131103627, 'C Programming Language, 2nd Edition', 'Brian W. Kernighan, Dennis M. Ritchie', 1988); INSERT 0 3 library=# INSERT INTO member VALUES (10000001, 'Winnie The Pooh', 'winnieethepooh@gmail.com'), (10000002, 'Gary the Dinosaur', 'garythedino@gmail.com'); INSERT 0 2 library=# SELECT * FROM book; isbn title author year -----+-----+-----+----- 9781927077030 The Three Principles of the People - San Min Chu I Sun Yat-Sen 2011 9780717802418 The Communist Manifesto Karl Marx, Friedrich Engels 1848 9780131103627 C Programming Language, 2nd Edition Brian W. Kernighan, Dennis M. Ritchie 1988 (3 rows) library=# SELECT * FROM member; member_id name email -----+-----+----- 10000001 Winnie The Pooh winnieethepooh@gmail.com 10000002 Gary the Dinosaur garythedino@gmail.com (2 rows)</pre>
<pre>INSERT INTO loan VALUES (9780131103627, 10000001, '2025- 09-11', '2025-09-14'), (9781927077030, 10000002, '2025- 08-10', '2025-10-12'); SELECT * FROM loan;</pre>	<pre>library=# INSERT INTO loan VALUES (9780131103627, 10000001, '2025-09-11', '2025-09-14'), (9781927077030, 10000002, '2025-08-10', '2025-10-12'); INSERT 0 2 library=# SELECT * FROM loan; isbn member_id loan_date return_date -----+-----+-----+----- 9780131103627 10000001 2025-09-11 2025-09-14 9781927077030 10000002 2025-08-10 2025-10-12 (2 rows)</pre>

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<pre>SELECT B.title, M.name FROM loan L INNER JOIN book B ON L.isbn = B.isbn INNER JOIN member M ON L.member_id = M.member_id;</pre>	<pre>library=# SELECT B.title, M.name FROM loan L INNER JOIN book B ON L.isbn = B.isbn INNER JOIN member M ON L.member_id = M.member_id; title name -----+----- C Programming Language, 2nd Edition Winnie The Pooh The Three Principles of the People - San Min Chu I Gary the Dinosaur (2 rows)</pre>
<pre>UPDATE loan SET return_date = '2025-11-10' WHERE isbn = 9781927077030 AND member_id = 10000002; SELECT * FROM loan;</pre>	<pre>library=# UPDATE loan SET return_date = '2025-11-10' WHERE isbn = 9781927077030 AND member_id = 10000002; SELECT * FROM loan; UPDATE 1 isbn member_id loan_date return_date -----+----- 9780131103627 10000001 2025-09-11 2025-09-14 9781927077030 10000002 2025-08-10 2025-11-10 (2 rows)</pre>
<pre>DELETE FROM loan WHERE isbn = 9780131103627 AND member_id = 10000001; SELECT * FROM loan;</pre>	<pre>library=# DELETE FROM loan WHERE isbn = 9780131103627 AND member_id = 10000001; SELECT * FROM loan; DELETE 1 isbn member_id loan_date return_date -----+----- 9781927077030 10000002 2025-08-10 2025-11-10 (1 row)</pre>