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```
CREATE TABLE Books (  
    BookID INT PRIMARY KEY,  
    Title VARCHAR(250),  
    AuthorID INT,  
    ISBN VARCHAR(20),  
    PublicationYear INT,  
    FOREIGN KEY (AuthorID) REFERENCES Authors(AuthorID)  
);  
  
CREATE TABLE Authors (  
    AuthorID INT PRIMARY KEY,  
    FirstName VARCHAR(100),  
    LastName VARCHAR(100)  
);
```

```
postgres=# CREATE TABLE Authors (  
postgres(#      AuthorID INT PRIMARY KEY,  
postgres(#      FirstName VARCHAR(100),  
postgres(#      LastName VARCHAR(100)  
postgres(# );  
CREATE TABLE  
postgres=# CREATE TABLE Books (  
postgres(#      BookID INT PRIMARY KEY,  
postgres(#      Title VARCHAR(250),  
postgres(#      AuthorID INT,  
postgres(#      ISBN VARCHAR(20),  
postgres(#      PublicationYear INT,  
postgres(#      FOREIGN KEY (AuthorID) REFERENCES Authors(AuthorID)  
postgres(# );  
CREATE TABLE
```

```
INSERT INTO Authors (AuthorID, FirstName, LastName) VALUES (1, 'J.K.', 'Rowling')  
INSERT INTO Authors (AuthorID, FirstName, LastName) VALUES (2, 'George', 'Orwell')  
INSERT INTO Authors (AuthorID, FirstName, LastName) VALUES (3, 'Stephen', 'King')
```

```
INSERT INTO Books (BookID, Title, AuthorID, ISBN, PublicationYear) VALUES (1, 'Harry Potter', 1, '978-0590353427', 1998);  
INSERT INTO Books (BookID, Title, AuthorID, ISBN, PublicationYear) VALUES (2, '1984', 2, '978-0451524935', 1949);  
INSERT INTO Books (BookID, Title, AuthorID, ISBN, PublicationYear) VALUES (3, 'It', 3, '978-0670813025', 1986);
```

```
postgres=# SELECT * FROM Authors;
authorid | firstname | lastname
-----+-----+-----
(0 rows)
```

```
postgres=# -- Inserting into Authors
postgres=# INSERT INTO Authors (AuthorID, FirstName, LastName) VALUES (1, 'George', 'Orwell');
INSERT 0 1
postgres=# INSERT INTO Authors (AuthorID, FirstName, LastName) VALUES (2, 'Virginia', 'Woolf');
INSERT 0 1
postgres=# INSERT INTO Authors (AuthorID, FirstName, LastName) VALUES (3, 'James', 'Joyce');
INSERT 0 1
```

```
postgres=# SELECT * FROM Authors;
postgres=# select * From Authors;
ERROR:  syntax error at or near "select"
LINE 2: select * From Authors;
        ^
```

```
postgres=# SELECT * FROM Authors;
authorid | firstname | lastname
-----+-----+-----
1 | George | Orwell
```

```
2 | Virginia | Woolf
3 | James | Joyce
(3 rows)
```

```
postgres=# -- Inserting into Books
postgres=# INSERT INTO Books (BookID, Title, AuthorID, ISBN, PublicationYear) VALUES (1, '1984', 1, '978-0451524935', 1949);
INSERT 0 1
postgres=# INSERT INTO Books (BookID, Title, AuthorID, ISBN, PublicationYear) VALUES (2, 'Mrs Dalloway', 2, '978-0156628709', 1925);
INSERT 0 1
postgres=# INSERT INTO Books (BookID, Title, AuthorID, ISBN, PublicationYear) VALUES (3, 'Ulysses', 3, '978-0679722762', 1922);
INSERT 0 1
```

```
postgres=# SELECT * FROM Books;
postgres=# SELECT * FROM Books;
ERROR:  syntax error at or near "SELECT"
LINE 2: SELECT * FROM Books;
        ^
```

```
postgres=# SELECT * FROM Books;
bookid | title | authorid | isbn | publicationyear
-----+-----+-----+-----+-----
1 | 1984 | 1 | 978-0451524935 | 1949
2 | Mrs Dalloway | 2 | 978-0156628709 | 1925
```

```
3 | Ulysses | 3 | 978-0679722762 | 1922
```

UPDATE Books

SET PublicationYear = 1948

WHERE Title = '1984';

```

DELETE FROM Books
WHERE AuthorID = (SELECT AuthorID FROM Authors WHERE FirstName = 'Virginia' AND LastName = 'Woolf');

DELETE FROM Authors
WHERE FirstName = 'Virginia' AND LastName = 'Woolf';

SELECT Title, ISBN FROM Books;

```

```

postgres=# UPDATE Books
postgres=# SET PublicationYear = 1948
[postgres=# WHERE Title = '1984'; ]
UPDATE 1
postgres=# DELETE FROM Books
postgres=# WHERE AuthorID = (SELECT AuthorID FROM Authors WHERE FirstName = 'Vir
ginia' AND LastName = 'Woolf');
DELETE 1
postgres=#
postgres=# DELETE FROM Authors
[postgres=# WHERE FirstName = 'Virginia' AND LastName = 'Woolf'; ]
DELETE 1
postgres=# SELECT Title, ISBN FROM Books;
  title  |      isbn
-----+-----
Ulysses | 978-0679722762
1984    | 978-0451524935
(2 rows)

postgres=# SELECT Authors.FirstName || ' ' || Authors.LastName AS FullName, Book
s.Title, Books.PublicationYear
postgres=# FROM Books

```

```

SELECT Authors.FirstName || ' ' || Authors.LastName AS FullName, Books.Title, Books.PublicationYear
FROM Books
JOIN Authors ON Books.AuthorID = Authors.AuthorID;

```

```

SELECT Books.Title, Books.ISBN
FROM Books
JOIN Authors ON Books.AuthorID = Authors.AuthorID
WHERE Authors.FirstName = 'George' AND Authors.LastName = 'Orwell';

```

```

SELECT Authors.AuthorID, Authors.FirstName, Authors.LastName, Books.Title, Books.ISBN, Books.PublicationYear

```

FROM Authors

INNER JOIN Books ON Authors.AuthorID = Books.AuthorID;

```
postgres=# JOIN Authors ON Books.AuthorID = Authors.AuthorID;
```

fullname	title	publicationyear
James Joyce	Ulysses	1922
George Orwell	1984	1948

(2 rows)

```
postgres=# SELECT Books.Title, Books.ISBN
```

```
postgres=# FROM Books
```

```
postgres=# JOIN Authors ON Books.AuthorID = Authors.AuthorID
```

```
postgres=# WHERE Authors.FirstName = 'George' AND Authors.LastName = 'Orwell';
```

title	isbn
1984	978-0451524935

(1 row)

```
postgres=# SELECT Authors.AuthorID, Authors.FirstName, Authors.LastName, Books.Title, Books.ISBN, Books.PublicationYear
```

```
postgres=# FROM Authors
```

```
postgres=# FROM Authors
```

```
postgres=# INNER JOIN Books ON Authors.AuthorID = Books.AuthorID;
```

authorid	firstname	lastname	title	isbn	publicationyear
3	James	Joyce	Ulysses	978-0679722762	1922
1	George	Orwell	1984	978-0451524935	1948

(2 rows)

```
postgres=# SELECT Authors.AuthorID, Authors.FirstName, Authors.LastName, Books.Title, Books.ISBN, Books.PublicationYear
```

```
postgres=# FROM Authors
```

```
postgres=# LEFT JOIN Books ON Authors.AuthorID = Books.AuthorID;
```

authorid	firstname	lastname	title	isbn	publicationyear
3	James	Joyce	Ulysses	978-0679722762	1922
1	George	Orwell	1984	978-0451524935	1948

(2 rows)

```
SELECT Authors.AuthorID, Authors.FirstName, Authors.LastName, Books.Title, Books.ISBN, Books.PublicationYear
```

```
FROM Authors
```

```
LEFT JOIN Books ON Authors.AuthorID = Books.AuthorID;
```

```
SELECT Authors.AuthorID, Authors.FirstName, Authors.LastName, Books.Title, Books.ISBN, Books.PublicationYear
```

```
FROM Authors
```

```
RIGHT JOIN Books ON Authors.AuthorID = Books.AuthorID;
```

```
SELECT Authors.AuthorID, Authors.FirstName, Authors.LastName, Books.Title, Books.ISBN, Books.PublicationYear
FROM Authors
FULL OUTER JOIN Books ON Authors.AuthorID = Books.AuthorID;
```

```
postgres=# SELECT Authors.AuthorID, Authors.FirstName, Authors.LastName, Books.T
itle, Books.ISBN, Books.PublicationYear
postgres=# FROM Authors
postgres=# RIGHT JOIN Books ON Authors.AuthorID = Books.AuthorID;
 authorid | firstname | lastname | title | isbn | publicationyear
-----+-----+-----+-----+-----+-----
          3 | James    | Joyce    | Ulysses | 978-0679722762 | 1922
          1 | George   | Orwell   | 1984    | 978-0451524935 | 1948
(2 rows)
```

```
postgres=# SELECT Authors.AuthorID, Authors.FirstName, Authors.LastName, Books.T
itle, Books.ISBN, Books.PublicationYear
postgres=# FROM Authors
postgres=# FULL OUTER JOIN Books ON Authors.AuthorID = Books.AuthorID;
 authorid | firstname | lastname | title | isbn | publicationyear
-----+-----+-----+-----+-----+-----
          3 | James    | Joyce    | Ulysses | 978-0679722762 | 1922
          1 | George   | Orwell   | 1984    | 978-0451524935 | 1948
(2 rows)
```