

Isaac Gentz  
CS430

```
CREATE TYPE NAME AS (FirstName VARCHAR, MiddleName VARCHAR, LastName VARCHAR);
```

```
CREATE TABLE IF NOT EXISTS Author(  
    authorid INT UNIQUE NOT NULL,  
    Address VARCHAR,  
    Contact VARCHAR,  
    Name NAME NOT NULL,  
    PRIMARY KEY(authorid));
```

```
CREATE TABLE IF NOT EXISTS Book (  
    ISBN VARCHAR UNIQUE NOT NULL,  
    Title VARCHAR NOT NULL,  
    Price MONEY CHECK(Price::numeric > 0),  
    Pages INT CHECK(Pages > 0),  
    PRIMARY KEY (ISBN));
```

```
CREATE TABLE IF NOT EXISTS Writes (  
    AuthorID INT REFERENCES Author (Authorid) ON UPDATE CASCADE ON DELETE CASCADE,  
    ISBN VARCHAR REFERENCES Book (ISBN) ON UPDATE CASCADE ON DELETE CASCADE,  
    PRIMARY KEY(authorid, isbn));
```

```
CREATE TABLE IF NOT EXISTS TextBook(ISBN VARCHAR REFERENCES Book (ISBN) ON DELETE CASCADE,  
    Subject VARCHAR, PRIMARY KEY(ISBN));
```

```
CREATE TABLE IF NOT EXISTS Novel(ISBN VARCHAR REFERENCES Book (ISBN) ON DELETE CASCADE,  
    noveltype VARCHAR, PRIMARY KEY(ISBN));
```

```
CREATE TABLE IF NOT EXISTS Publisher(  
    pid INT UNIQUE NOT NULL,  
    name VARCHAR NOT NULL,  
    established_date DATE,  
    PRIMARY KEY (pid));
```

```
CREATE TABLE Published_By(isbn VARCHAR REFERENCES Book(isbn) ON UPDATE CASCADE ON DELETE CASCADE,  
    pid INT REFERENCES Publisher(pid) ON UPDATE CASCADE ON DELETE CASCADE,  
    pubid SERIAL PRIMARY KEY );
```

```
-- Populate with test data
```

```
--Authors
```

```
INSERT INTO Author(authorid, name, contact, address) VALUES(123, ('George', 'H', 'Washington'),  
'Write me', '1600 Pennsylvania Ave');  
INSERT INTO Author(authorid, name, contact, address) VALUES(234, ('Abe', 'J', 'Lincoln'), 'Write',  
'Log cabin');  
INSERT INTO Author(authorid, name, contact, address) VALUES(345, ('Teddy', 'B', 'Roosevelt'), 'Go  
hunting with me', 'On a Safari');  
INSERT INTO Author(authorid, name, contact, address) VALUES(456, ('Andrew', 'M', 'Jackson'), 'In  
person', 'Defenind New Orleans');  
INSERT INTO Author(authorid, name, contact, address) VALUES(567, ('Donald', 'N', 'Trump'), 'Call  
me', 'Trump Tower New York');
```

#### -- Books

```
INSERT INTO Book(isbn, title, price, pages) VALUES(123, 'Huck Finn', 10.99, 380);  
INSERT INTO Book(isbn, title, price, pages) VALUES(234, 'Docker for Noobs', 3677.99, 245);  
INSERT INTO Book(isbn, title, price, pages) VALUES(345, 'How to Cook Steak', 3.99, 45);  
INSERT INTO Book(isbn, title, price, pages) VALUES(456, 'Truck Driving 101', 1239.99, 348);  
INSERT INTO Book(isbn, title, price, pages) VALUES(567, 'Band of Brothers', 19.99, 407);
```

#### -- Associate Textbooks

```
INSERT INTO Textbook(isbn, subject) VALUES(234, 'Computer Science');  
INSERT INTO Textbook(isbn, subject) VALUES(345, 'Cooking');  
INSERT INTO Textbook(isbn, subject) VALUES(456, 'Transportation');
```

#### -- Associate Novels

```
INSERT INTO Novel(isbn, noveltype) VALUES(567, 'Historical WWII');  
INSERT INTO Novel(isbn, noveltype) VALUES(123, 'American Literature');
```

#### -- Associate Authors with Books (Writes)

```
INSERT INTO Writes(authorid, isbn) VALUES(123, 123);  
INSERT INTO Writes(authorid, isbn) VALUES(123, 234); --Test one author multiple books  
INSERT INTO Writes(authorid, isbn) VALUES(234, 345);  
INSERT INTO Writes(authorid, isbn) VALUES(345, 345); -- Test multiple authors one book  
INSERT INTO Writes(authorid, isbn) VALUES(456, 456);  
INSERT INTO Writes(authorid, isbn) VALUES(567, 567);
```

#### -- Publishers

```
INSERT INTO Publisher(pid, Name, established_date) VALUES(123, 'Isaac Publishing Inc.', '11-24-  
1995');  
INSERT INTO Publisher(pid, Name, established_date) VALUES(234, 'Patton Press Ltd.', '09-23-  
1903');  
INSERT INTO Publisher(pid, Name, established_date) VALUES(345, 'NovelCo', '04-13-1956');
```

#### -- Published By (This models the 1-many since there are multiple books for single publishers)

```
INSERT INTO Published_By(isbn, pid) VALUES(123, 345);  
INSERT INTO Published_By(isbn, pid) VALUES(567, 345);  
INSERT INTO Published_By(isbn, pid) VALUES(234, 123);  
INSERT INTO Published_By(isbn, pid) VALUES(456, 123);  
INSERT INTO Published_By(isbn, pid) VALUES(345, 234);
```

-- Select all authors who live in NY

```
SELECT * FROM Author WHERE Address LIKE '%New York%' OR Address LIKE '%NY%';
```

-- Count number of books written by each author

-- Note 6 books since some were co-authored

```
SELECT AuthorID, COUNT(*) AS "Books Written" FROM Writes WHERE CAST(AuthorID as TEXT) LIKE '%' GROUP BY AuthorID;
```

-- Find all publisher name and (ISBN, title) of books published by them

-- List all authors who have written textbook with subject starting with C

```
WITH results AS (WITH author_c AS (WITH book_c AS (SELECT isbn FROM Textbook t WHERE t.Subject LIKE 'C%') SELECT * FROM book_c INNER JOIN Writes ON book_c.isbn = Writes.isbn) SELECT * FROM author_c INNER JOIN Author ON Author.authorid = author_c.authorid) SELECT Address AS "Author address where textbook subject starts with C" FROM results;
```

```
CREATE VIEW AuthorInfo (FirstName) AS SELECT a.name FROM Author A;
```