DB2 Sample Database

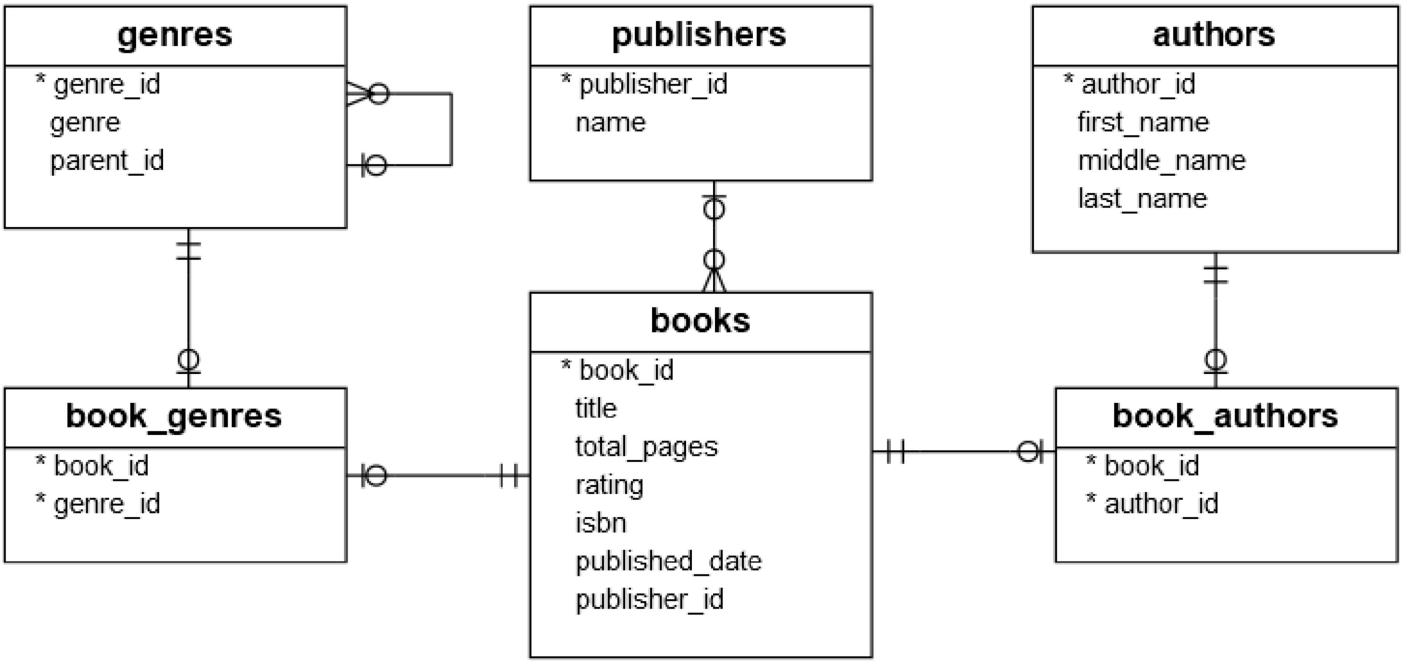
Summary: in this tutorial, we will introduce you to the Books DB2 sample database for practicing with DB2 tutorials.

Introduction to Books DB2 sample database

The `Books` database is a simple sample database designed for learning and practicing DB2. It consists of six tables:

- `books` table stores book data including title, total pages, rating, ISBN, and published date.
- `publishers` table stores publisher names.
- `authors` table stores books' authors.
- `book_authors` table stores the relationship between books and authors. A book can be written by one or more authors, and one author may have one or many books.
- `genres` table stores book's genres. Genres data is hierarchical which is specified by values in the parent_id column
- `book_genres` table stores the relationship between books and genres. A book may belong to one or more genres and a genre may have one or many books.

The following database diagram illustrates the tables and their relationships:



Database Tables

Table publishers

The `publishers` table has two columns that store publisher identification and name.

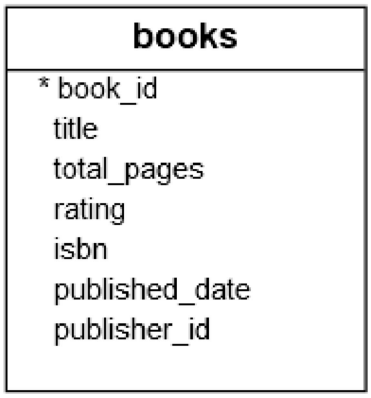
```
CREATE TABLE publishers(
  publisher_id INT GENERATED BY DEFAULT AS IDENTITY NOT NULL,
  name         VARCHAR(255) NOT NULL,
  PRIMARY KEY(publisher_id)
);
```

Table books

The `books` table has 7 columns that store book identification, title, total pages, ISBN, published date, and the identification of the publisher. Each book belongs to a publisher and a publisher may have

one or many books. If the value in the publisher column is NULL, it means the publisher is unknown at the time of recording the book.

```
CREATE TABLE books(
  book_id        INT GENERATED BY DEFAULT AS IDENTITY NOT NULL,
  title          VARCHAR(255) NOT NULL,
  total_pages    INT NULL,
  rating         DECIMAL(4, 2) NULL,
  isbn           VARCHAR(13) NULL,
  published_date DATE NULL,
  publisher_id   INT NULL,
  PRIMARY KEY(book_id),
  CONSTRAINT fk_publisher
    FOREIGN KEY(publisher_id)
    REFERENCES publishers(publisher_id)
);
```



The following picture illustrates the relationship between `books` and `publishers` tables:

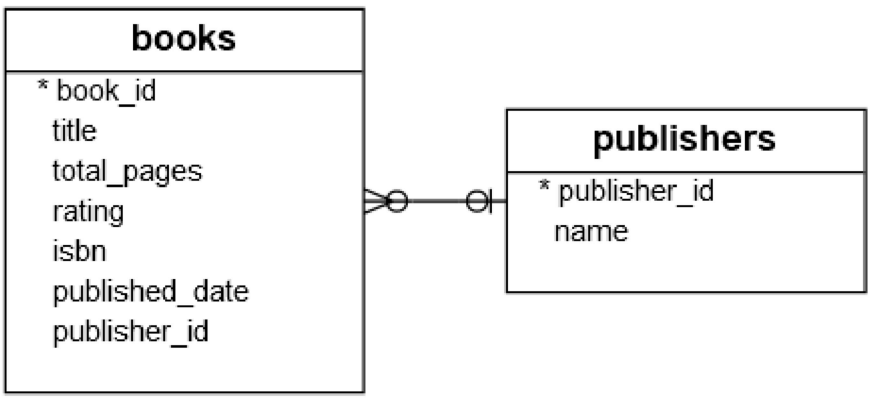


Table authors

The `authors` table has 4 columns that store author identification, first name, middle name, and last name.

```
CREATE TABLE authors(
  author_id   INT GENERATED BY DEFAULT AS IDENTITY NOT NULL,
  first_name  VARCHAR(100) NOT NULL,
  middle_name VARCHAR(50) NULL,
  last_name   VARCHAR(100) NULL,
  PRIMARY KEY(author_id)
);
```

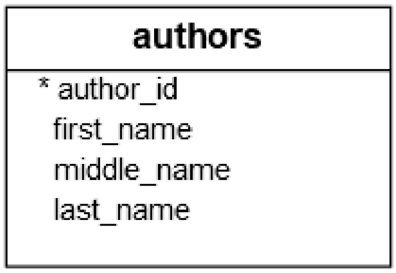


Table book_authors

```
CREATE TABLE book_authors (
  book_id   INT NOT NULL,
  author_id INT NOT NULL,
  PRIMARY KEY(book_id, author_id),
  CONSTRAINT fk_book
    FOREIGN KEY(book_id)
    REFERENCES books(book_id) ON DELETE CASCADE,
  CONSTRAINT fk_author
    FOREIGN KEY(author_id)
    REFERENCES authors(author_id) ON DELETE CASCADE
);
```

Each author has one or many books while each book is written by one or multiple authors. The relationship between books and authors is many to many as described in the following picture:

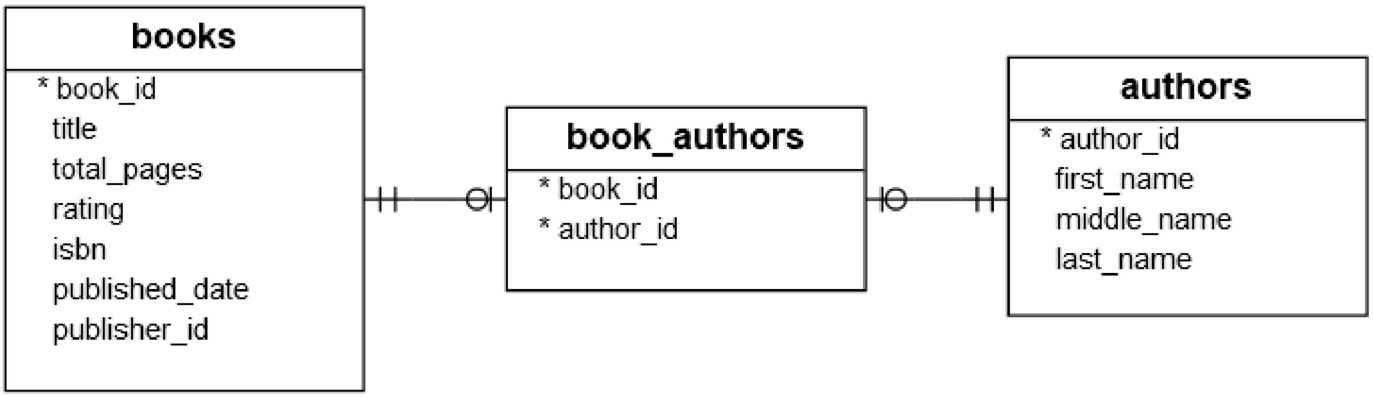


Table genres

The genres table has three columns that store genre identification, genre, and the relationship between genres.

```
CREATE TABLE genres (
  genre_id  INT GENERATED BY DEFAULT AS IDENTITY NOT NULL,
  genre     VARCHAR(255) NOT NULL,
  parent_id INT NULL,
  PRIMARY KEY(genre_id),
  CONSTRAINT fk_parent
    FOREIGN KEY(parent_id) REFERENCES genres(genre_id)
);
```

The following picture shows the `genres` table:

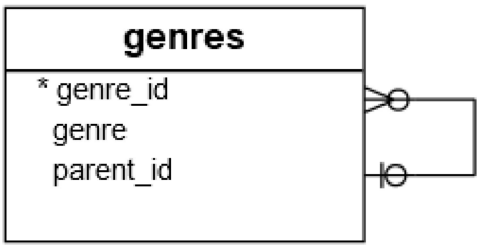
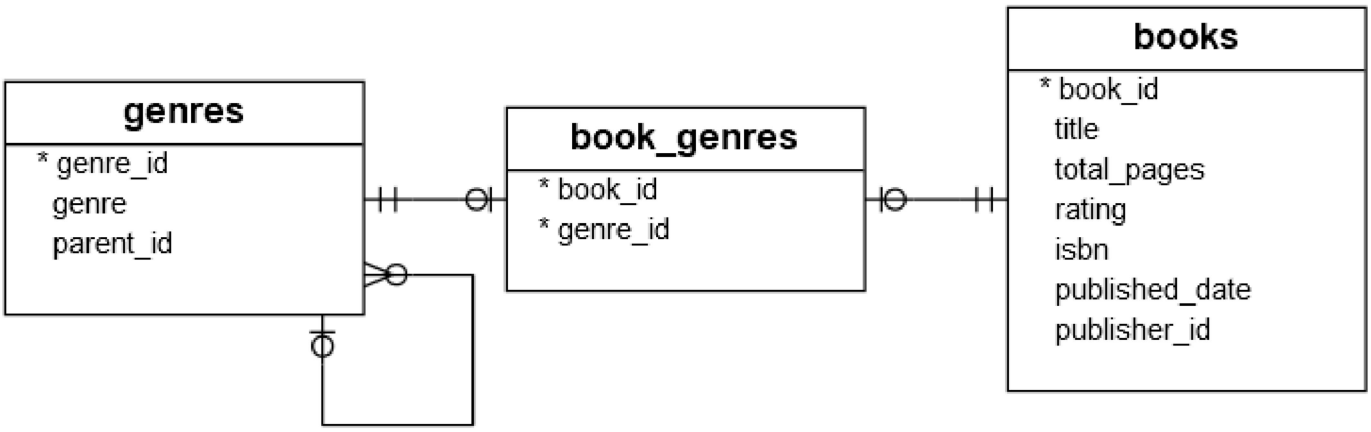


Table book_genres

The `book_genres` table stores the relationship between books and genres by using two columns: `book_id` and `genre_id`.

```
CREATE TABLE book_genres(
  book_id  INT NOT NULL,
  genre_id INT NOT NULL,
  PRIMARY KEY(book_id, genre_id),
  CONSTRAINT fk_book
    FOREIGN KEY(book_id)
    REFERENCES books(book_id) ON DELETE CASCADE,
  CONSTRAINT fk_genre
    FOREIGN KEY(genre_id)
    REFERENCES genres(genre_id) ON DELETE CASCADE
);
```

The relationship between books and genres are many-to-many:



In this tutorial, you have learned about the books DB2 sample database for practicing with DB2. In the next tutorial, you will learn how to create the `Books` sample database and load data into it.