**What are we trying to model?**

We are modeling a database for a customer-order-book system that:

* Tracks customers and their details (name, email, addresses, etc.).
* Manages books as products, including their details like title, author, ISBN, and publisher.
* Handles orders placed by customers, which include books and their associated details (quantity, price, and shipping).
* Links customers and orders to their respective addresses for accurate shipping and billing.

**What are the tables in the DB?**

**1.address\_status**: status\_id (PK), address\_status

**2.** **customer\_address**: customer\_id (FK), address\_id (FK), status\_id (FK)

**3. address**: address\_id (PK), street\_number, street\_name, city, country\_id (FK)

**4. country:** country\_id (PK), country\_name

**5.** **customer:** customer\_id ( PK), first\_name, last\_name, email

**6.** **cust\_order:** order\_id (PK), order\_date, customer\_id (FK), shipping\_method\_id, dest\_address\_id (FK)

**7.** **book:** book\_id (PK), title, isbn13, language\_id (FK), num\_pages, publication\_date, publisher\_id (FK)

(isbn13) refers to the International Standard Book Number (ISBN-13).

It is a 13-digit numeric identifier used globally to uniquely identify books and other independent publications.

**8.** **book\_author:** book\_id (FK), author\_id (FK)

**9.** **author:** author\_id (PK), author\_name

**10.** **book\_language:** language\_id (PK), language\_code, language\_name

**11.** **publisher:** publisher\_id (PK), publisher\_name

**12.** **order\_line:** line\_id (PK), order\_id (FK), book\_id (FK), price, Relationsh

**13.** **order\_history:** history\_id (PK), order\_id (FK), status\_id (FK), status\_date

**14. order\_status:** status\_id (PK) , status\_value

**15. shipping\_method:** method\_id (PK), method\_name,cost

**What are their relations?**

**1. customer and customer\_address**

**Relationship: One-to-Many**

Description: A single customer can have multiple addresses

**2. address and country**

Relationship: Many-to-One

Description: Each address belongs to one country, but a country can have multiple addresses.

**3. customer\_address and address\_status**

Relationship: Many-to-One

Description: Each customer address is associated with an address status, such as active or inactive.

**4. cust\_order and customer**

Relationship: Many-to-One

Description: Each order is placed by one customer, but a customer can place multiple orders.

**5. cust\_order and address**

Relationship: Many-to-One

Description: Each order specifies a destination address.

**6. cust\_order and order\_line**

Relationship: One-to-Many

Description: Each order can include multiple order lines, where each line represents a book purchased.

**7. order\_line and book**

Relationship: Many-to-One

Description: Each order line references a specific book.

**8. book and publisher**

Relationship: Many-to-One

Description: Each book is published by a single publisher.

**9. book and book\_language**

Relationship: Many-to-One

Description: Each book is written in a specific language.

**10. book and book\_author**

Relationship: One-to-Many

Description: A single book can have multiple authors through the book\_author junction table.

**11. book\_author and author**

Relationship: Many-to-One

Description: Each entry in the book\_author table links a book to a specific author (author\_id).