SQL Schemas

DATA SCIENCE BOOTCAMP

Schema

The structure of the database (relationships between tables)
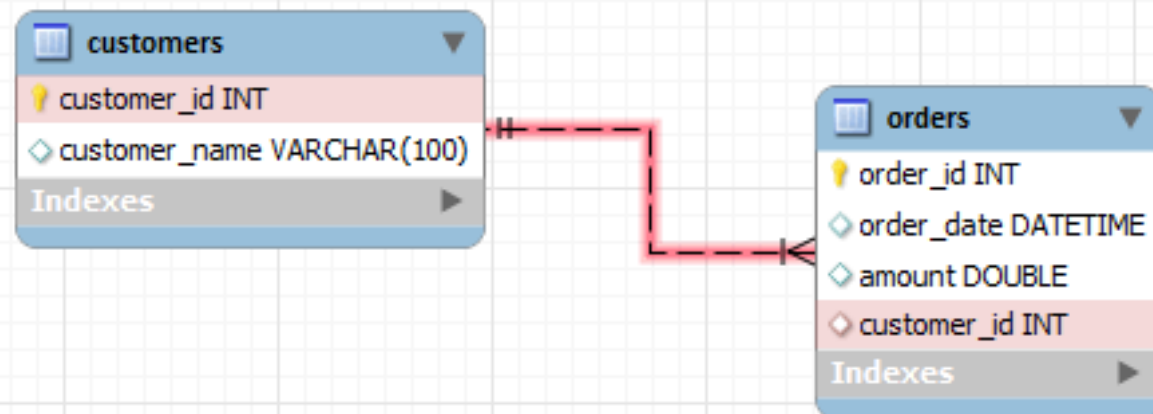
CUSTOMERS		
customer_id	customer_name	customer_address
101	John Doe	12 Main St., Houston TX 77001
102	Bruce Wayne	1007 Mountain Dr., Gotham NY 10286

CUSTOMERS

customer_id	customer_name	address_id
101	John Doe	301
102	Bruce Wayne	302

ADDRESSES

address_id	address
301	12 Main St., Houston TX 77001
302	1007 Mountain Dr., Gotham NY 10286
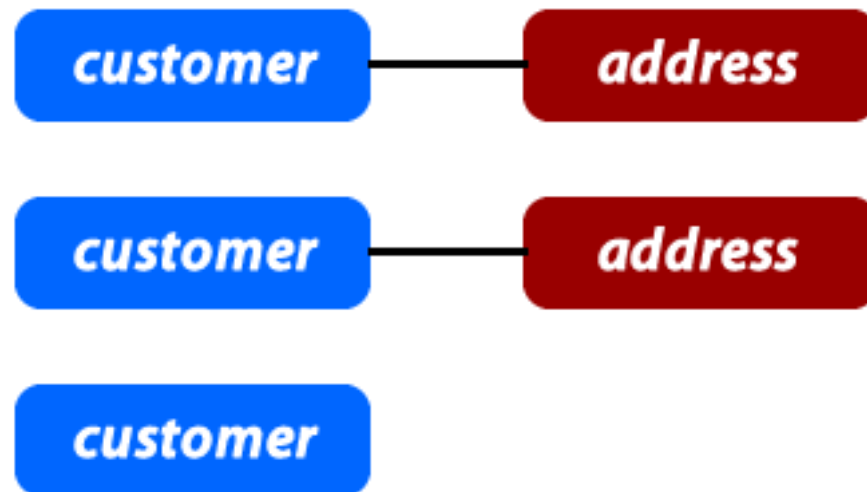
One to One relationship

one customer ➜⬅ one address

One to One relationship

one customer ➜⬅ one address

Each customer can have only one address,
Each address can belong only to one customer

One to One relationship

one customer ➔⬅ one address
one movie ➔⬅ one title_year

Each customer can have only one address,
Each address can belong only to one customer

One to One relationship

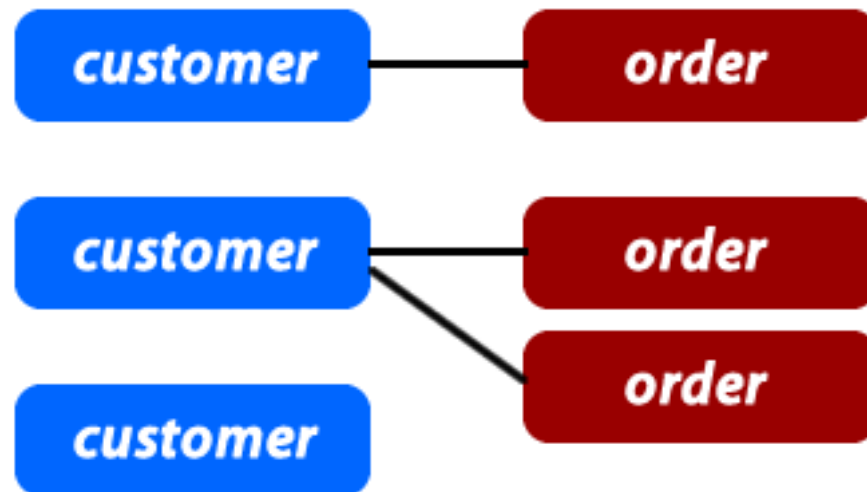One to Many relationship

Many to Many relationship

One to One relationship

One to Many relationship

Many to Many relationship

CUSTOMERS

customer_id	customer_name
101	John Doe
102	Bruce Wayne

ORDERS

order_id	customer_id	order_date	amount
555	101	12/24/09	$156.78
556	102	12/25/09	$99.99
557	101	12/26/09	$75.00

One to Many relationship

one customer ➔⬅ many orders

One to Many relationship

one customer ➜⬅ many orders

Each customer can have multiple orders,
one order can belong only to one customer

One to Many relationship

one customer ➜⬅ many orders
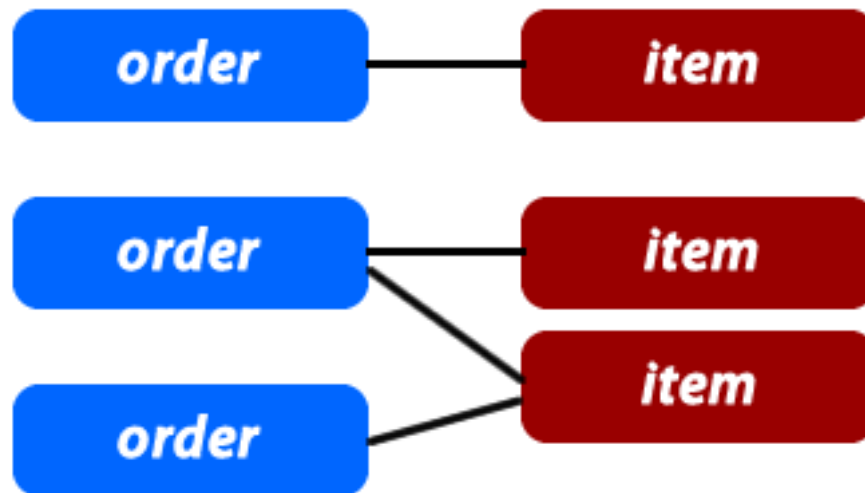one MPAA rating ➜⬅ many movies

Each customer can have multiple orders,
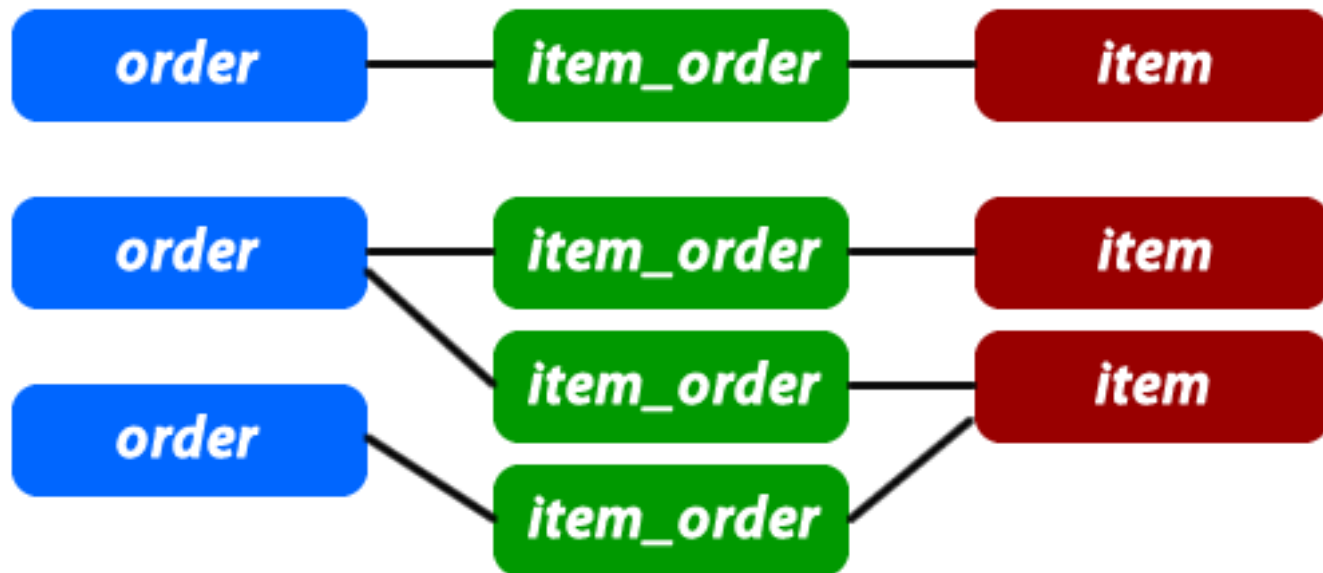one order can belong only to one customer

One to One relationship

One to Many relationship

Many to Many relationship

ORDERS

order_id	customer_id	order_date	amount
555	101	12/24/09	$156.78
556	102	12/25/09	$99.99

ITEMS

item_id	item_name	item_description
201	Tickle Me Elmo	It wants to be tickled
202	District 9 DVD	Awesome sci-fi movie
203	Batarang	It is very sharp

ITEMS_ORDERS

order_id	item_id
555	201
555	202
556	202
556	203

ORDERS

order_id	customer_id	order_date	amount
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555	202
556	202
556	203

Many to Many relationship

many orders ➜⬅ many items

Many to Many relationship

many orders ➜⬅ many items

Each order can have multiple items,
Each item can be in multiple orders

Many to Many relationship

many orders ➡️⬅️ many items
many movies ➡️⬅️ many actors
many subgenres ➡️⬅️ many movies

Each order can have multiple items,
Each item can be in multiple orders

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```
CREATE TABLE customers (
    customer_id INT AUTO_INCREMENT PRIMARY KEY,
    customer_name VARCHAR(100)
);
```

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```sql
CREATE TABLE customers (
    customer_id INT AUTO_INCREMENT PRIMARY KEY,
    customer_name VARCHAR(100)
);
```

```sql
CREATE TABLE orders (
    order_id INT AUTO_INCREMENT PRIMARY KEY,
    customer_id INT,
    amount DOUBLE,
    FOREIGN KEY (customer_id) REFERENCES customers(customer_id)
);
```