

SQL Schemas



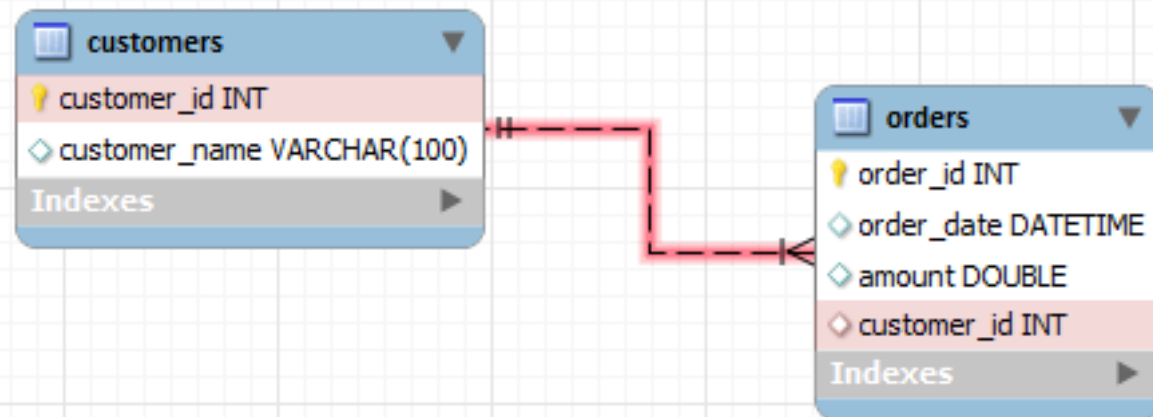
Schema

The structure of the database
(relationships between tables)

One to One relationship

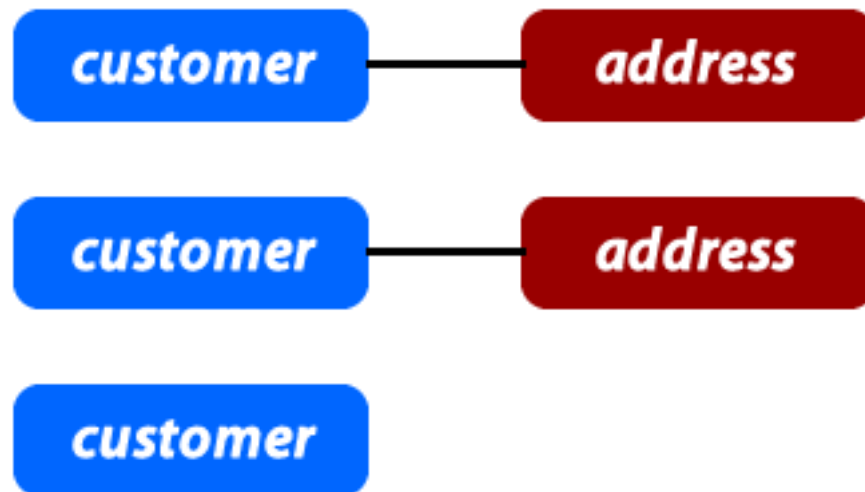
One to Many relationship

Many to Many relationship



<u>CUSTOMERS</u>		
customer_id	customer_name	customer_address
101	John Doe	12 Main St., Houston TX 77001
102	Bruce Wayne	1007 Mountain Dr., Gotham NY 10286

<u>CUSTOMERS</u>		
customer_id	customer_name	address_id
101	John Doe	301
102	Bruce Wayne	302
<u>ADDRESSES</u>		
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

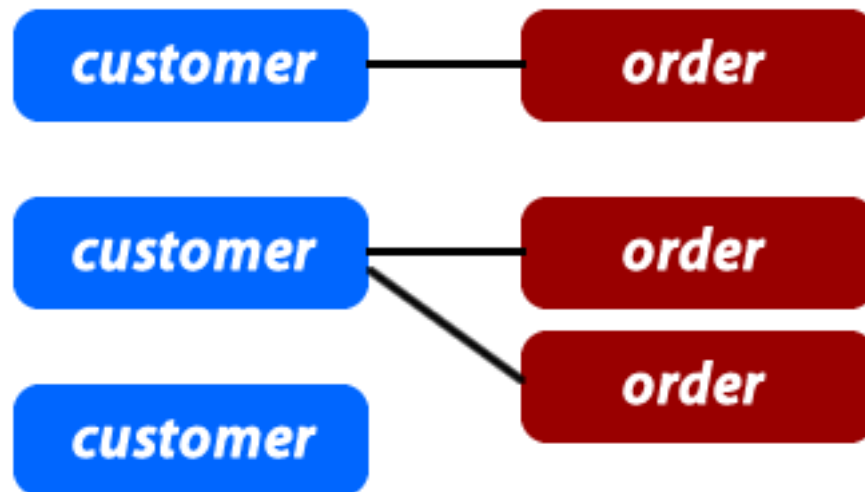
One to One relationship

One to Many relationship

Many to Many relationship

<u>CUSTOMERS</u>	
customer_id	customer_name
101	John Doe
102	Bruce Wayne

<u>ORDERS</u>			
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

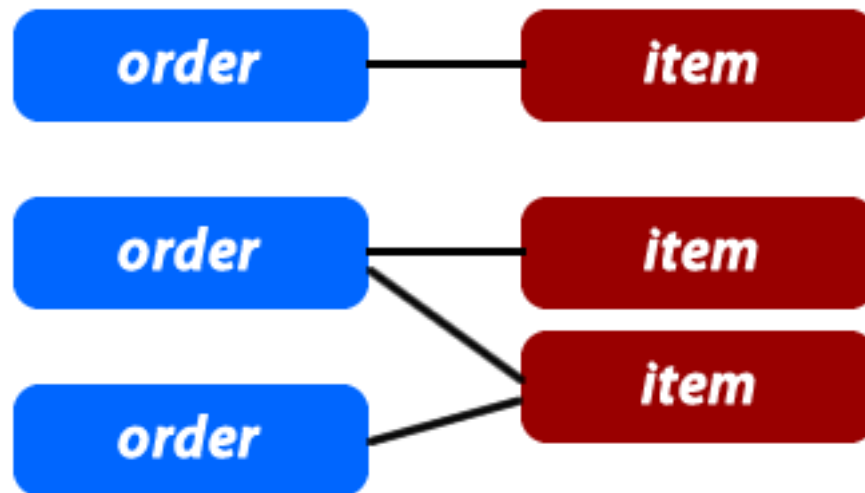
Each customer can have multiple orders,
one order can belong only to one customer

One to One relationship

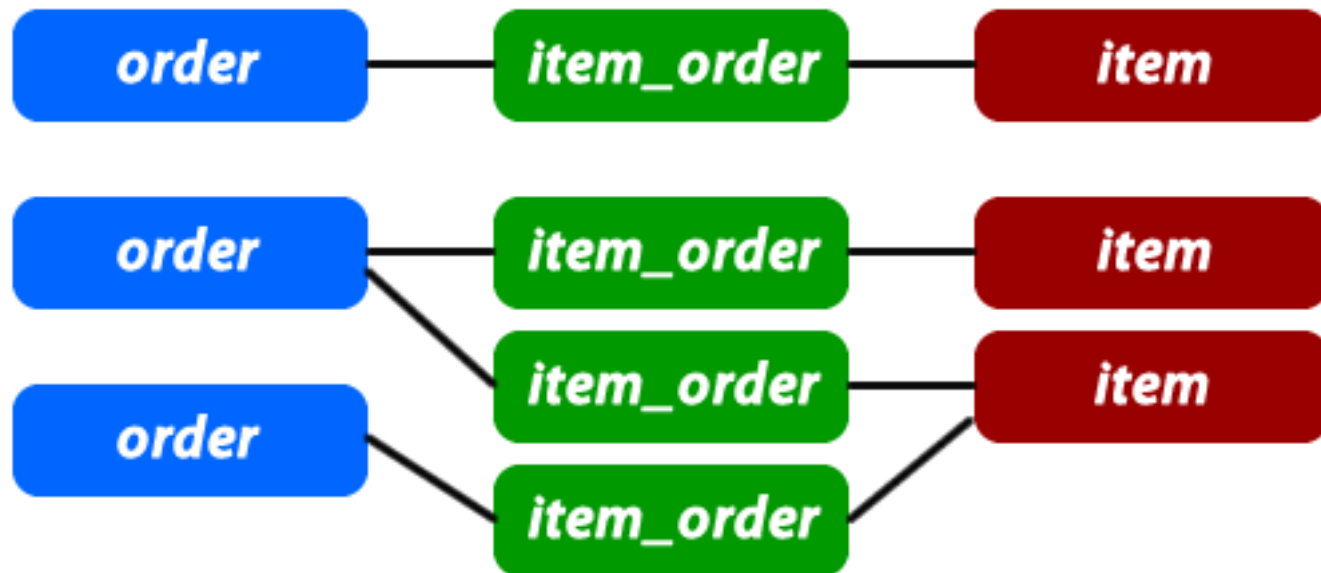
One to Many relationship

Many to Many relationship

<u>ORDERS</u>			
order_id	customer_id	order_date	amount
555	101	12/24/09	\$156.78
556	102	12/25/09	\$99.99
<u>ITEMS</u>			
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	
<u>ITEMS_ORDERS</u>			
order_id	item_id		
555	201		
555	202		
556	202		
556	203		



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<u>ITEMS_ORDERS</u>			
order_id	item_id		
555	201		
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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557	101	12/26/09	\$75.00

```

1 CREATE TABLE customers (
2     customer_id INT AUTO_INCREMENT PRIMARY KEY,
3     customer_name VARCHAR(100)
4 );

```

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101	John Doe
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```

1 CREATE TABLE customers (
2     customer_id INT AUTO_INCREMENT PRIMARY KEY,
3     customer_name VARCHAR(100)
4 );

```

```

1 CREATE TABLE orders (
2     order_id INT AUTO_INCREMENT PRIMARY KEY,
3     customer_id INT,
4     amount DOUBLE,
5     FOREIGN KEY (customer_id) REFERENCES customers(customer_id)
6 );

```