Nora’s Bagel Bin Database Blueprints

Second Normal Form (2NF)

BAGEL ORDER	
PK	Bagel Order ID
	Order Date
	First Name
	Last Name
	Address 1
	Address 2
	City
	State
	Zip
	Mobile Phone
	Delivery Fee
	Special Notes

1:M

BAGEL ORDER LINE ITEM	
PK / FK	Bagel Order ID
PK / FK	Bagel ID
	Bagel Quantity

M:1

BAGEL	
PK	Bagel ID
	Bagel Name
	Bagel Description
	Bagel Price

Explanation of Attributes and Cardinality (2NF)

I added the attributes based on their relevance to the tables. Bagel Order would be the first table, with all the fields relevant to an order, such as who ordered it, what they ordered, and how they will receive it. Bagel Order Line Item will contain the bagel id and the order id because it’s the table that connects the bagel table to the order table. Bagel of course is information about the bagel.

The cardinality was decided based on the structure of the data.

Bagel Order | 1:M | Bagel Order Line Item - This is due to line items being an infinite variable. A person can have many line items on an order, but those same line items can’t exist on another order.

Bagel Order Line Item | M:1 | Bagel - This is because a customer can order a blueberry bagel a hundred times, but there is still only one blueberry bagel to order.

Nora’s Bagel Bin Database Blueprints

Third Normal Form (3NF)

Bagel Order	
PK	Bagel Order ID
FK	Customer ID
	Order Date
	Delivery Fee
	Special Notes

1:M

BAGEL ORDER LINE ITEM	
PK / FK	Bagel Order ID
PK / FK	Bagel ID
	Bagel Quantity

M:1

BAGEL	
PK	Bagel ID
	Bagel Name
	Bagel Description
	Bagel Price

M:1

Customer Info	
PK	Customer ID
	First Name
	Last Name
	Address 1
	Address 2
	City
	State
	Zip
	Mobile Phone

Explanation of Attributes and Cardinality (3NF)

I added the attributes based on their relevance to the tables. This form takes the same structure from before, but breaks out the customer data into it’s table. This is the table that all information about the customer is entered into, so that the order table can call the customer data with a foriegn key.

The cardinality hasn’t changed for the two original table links, but the addition of the customer table has added an M:1 relationship between the order and the customer. This is because a customer can have many orders, but an order can only have one customer.

Nora’s Bagel Bin Database Blueprints

Final Physical Database Model

Bagel Order		
PK	bagel_order_id	INT
FK	customer_id	INT
	order_date	TIMESTAMP
	delivery_fee	DECIMAL(3,2)
	special_notes	VARCHAR(100)

1:M

BAGEL ORDER LINE ITEM		
PK / FK	bagel_order_id	INT
PK / FK	bagel_id	CHAR(2)
	bagel_quantity	INT

M:1

BAGEL		
PK	bagel_id	INT
	bagel_name	VARCHAR(100)
	bagel_description	VARCHAR(100)
	bagel_price	DECIMAL(3,2)

M:1

Customer Info		
PK	customer_id	INT
	first_name	VARCHAR(100)
	last_name	VARCHAR(100)
	address_1	VARCHAR(100)
	address_2	VARCHAR(100)
	city	VARCHAR(100)
	state	CHAR(2)
	zip	CHAR(5)
	mobile_phone	CHAR(10)