Nora's Bagel Bin Database Blueprints

First Normal Form (1NF)

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

This 1NF table achieves the following:

- Captures all necessary data fields from the unnormalized "Nora's Bagel Bin Catering Order" form.
- Excludes calculated fields like subtotal and sales tax as it is not necessary to store these values.
- Establishes primary keys.
- Does not contain any repeated groups (data that depends on both pieces of the composite primary key).
- Contains only atomic data (no attributes will contain more than one piece of data).

Nora's Bagel Bin Database Blueprints *(continued)*

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

- Separate the data that depend on just one of the two parts of the primary key into separate tables.
- Keep any columns in the original table (now named "Bagel Order Line Item") that still depend on both parts of the original primary key.

Nora's Bagel Bin Database Blueprints *(continued)*

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

- Look for remaining data that are or could be repeated within each table but do not depend on the primary key.
- Move that repeated data into their own table.
- Create a new attribute to be the primary key for this new table and also use it as the foreign key linking to this new table.

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Final Physical Database Model

BAGEL ORDER		
PK	bagel_order_id	INT
FK	customer_id	INT
	order_date	TIMESTAMP
	delivery_fee	NUMERIC(5,2)
	special_notes	VARCHAR(75)

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(30)
	bageldescription	VARCHAR(60)
	bagel_price	NUMERIC(5,2)

M:1

CUSTOMER		
PK	customer_id	INT
	firstname	VARCHAR(30)
	lastname	VARCHAR(30)
	address1	VARCHAR(50)
	address2	VARCHAR(50)
	city	VARCHAR(30)
	state	CHAR(2)
	zip	VARCHAR(10)
	mobile_phone	VARCHAR(15)