

## PART A



### Nora's Bagel Bin Database Blueprints

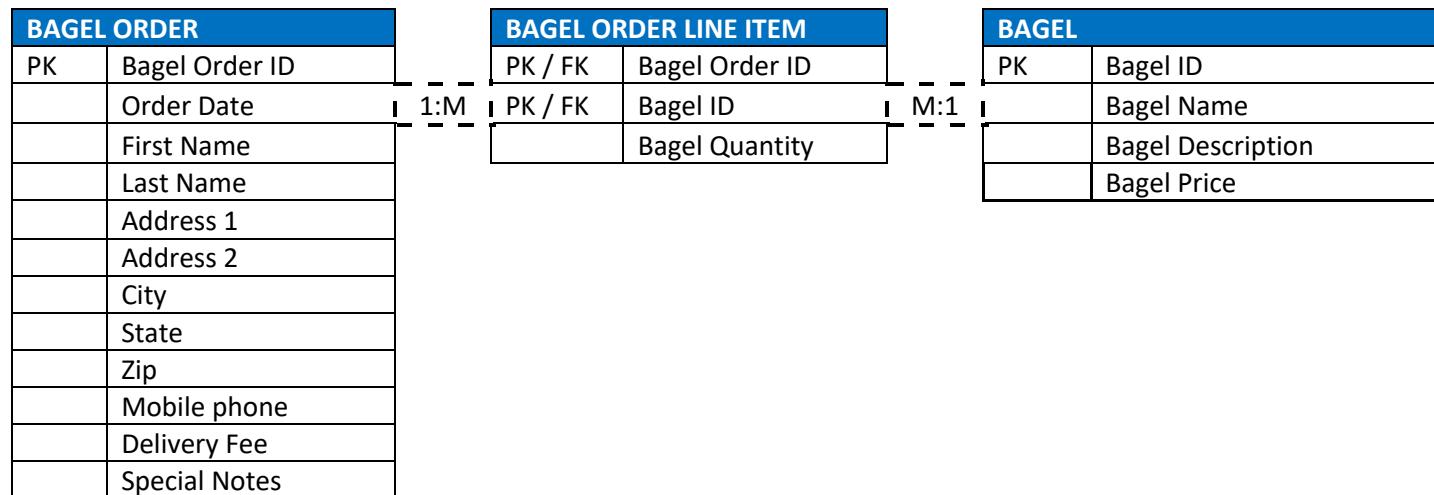
First Normal Form (1NF)

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

## A.

### 1. Nora's Bagel Bin Database Blueprints *(continued)*

Second Normal Form (2NF)



#### 1.C Explanation:

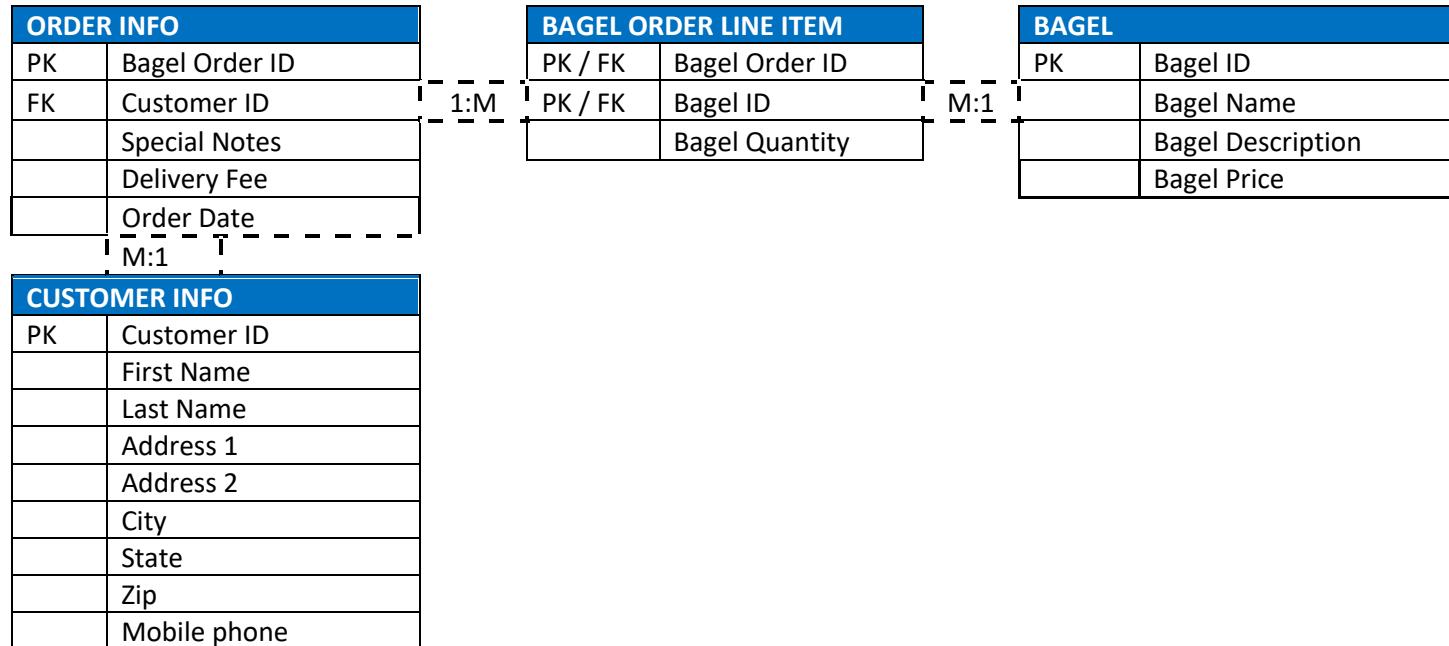
The attributes are organized in groups through similarity. The attributes pertaining specifically to the order such as order id, order date, customer information and special notes are grouped in the bagel order table. The attributes pertaining to bagels like bagel id, name, price and description are grouped in the bagel table. The bagel order line item table is the junction between both tables linking the specific bagel order to the correct bagels.

The cardinality between bagel order table and bagel order line item is one-to-many, since one order can include many types of bagels and each kind of bagel ordered will be assigned its own line in the bagel order line-item table.

The cardinality between the bagel order line item table and the bagel table is many-to-one because the bagel order line item can include many types of bagels for one order but every one of the bagels in the order is related to one entry in the bagel table.

## 2. Nora's Bagel Bin Database Blueprints *(continued)*

Third Normal Form (3NF)

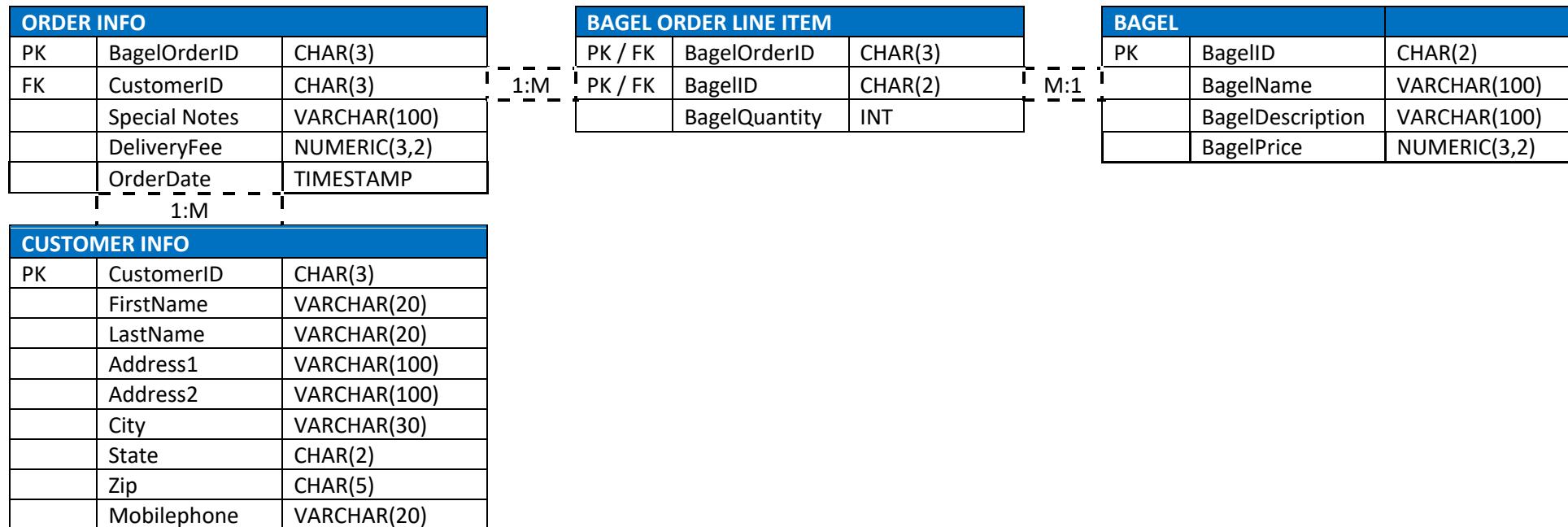


### 2.e Explanation

Another entity can be created and described by some of the attributes in the bagel order table which is customer info. These attributes don't necessarily depend on the primary key of bagel order table so they can be removed and put in a separate table to eliminate redundancy. One customer can place many orders, but one order can only be placed by one customer hence the M:1 cardinality between the tables order info and customer info.

### 3. Nora's Bagel Bin Database Blueprints *(continued)*

Final Physical Database Model



## PART B.

1.A

```
CREATE TABLE supplier(
    supplier_id INTEGER PRIMARY KEY,
    company_name VARCHAR(50),
    country VARCHAR(30),
    sales_contact_name VARCHAR(60),
    email VARCHAR(50) NOT NULL
);
```

```
CREATE TABLE coffee(
    coffee_id int,
    shop_id int,
    supplier_id int,
    coffee_name VARCHAR(30),
    price_per_pound NUMERIC(5,2),
    PRIMARY KEY (coffee_id),
    FOREIGN KEY (shop_id) REFERENCES supplier(supplier_id),
    FOREIGN KEY (supplier_id) REFERENCES supplier(supplier_id)
);
```

```
CREATE TABLE coffee_shop(  
    shop_id int,  
    shop_name VARCHAR(50),  
    city VARCHAR(50),  
    state CHAR(2),  
    PRIMARY KEY (shop_id)  
);
```

```
CREATE TABLE employee(  
    employee_id int,  
    first_name VARCHAR(30),  
    last_name VARCHAR(30),  
    hire_date DATE,  
    job_title VARCHAR(30),  
    shop_id int,  
    primary key (employee_id),  
    foreign key (shop_id) references coffee_shop(shop_id)  
);
```

1.B

sqlfiddle.com/#!9/fcf818

SQL Fiddle MySQL 5.6 View Sample Fiddle Clear Text to DDL Donate About

```
9
10 CREATE TABLE coffee(
11   coffee_id int,
12   shop_id int,
13   supplier_id int,
14   coffee_name VARCHAR(30),
15   price_per_pound NUMERIC(5,2),
16   PRIMARY KEY (coffee_id),
17   FOREIGN KEY (shop_id) REFERENCES supplier(supplier_id),
18   FOREIGN KEY (supplier_id) REFERENCES supplier(supplier_id)
19 );
20
21
22 CREATE TABLE coffee_shop(
23   shop_id int,
24   shop_name VARCHAR(50),
```

1

Build Schema ↴ Edit Fullscreen ↵ Browser ↵ [ ; ] ▾ Run SQL ► Edit Fullscreen ↵ [ ; ] ▾

✓ Schema Ready

2.A

```
INSERT INTO supplier VALUES (1, 'PEET', 'USA', 'BEN WHITE', 'bwhite@peet.org');

INSERT INTO supplier VALUES (2, 'BEANS', 'UK', 'JEN BROWN', 'jbrown@beans.org');

INSERT INTO supplier VALUES (3, 'SCOFFEE', 'BRAZIL', 'MIKE GREY', 'mgrey@scoffee.org');

INSERT INTO coffee VALUES (1, 1, 1, 'pcoffee', '10.0');

INSERT INTO coffee VALUES (2, 2, 2, 'bcoffee', '12.0');

INSERT INTO coffee VALUES (3, 3, 3, 'scoffee', '9.0');

INSERT INTO coffee_shop VALUES (1, 'coffegame', 'pasadena', 'CA');

INSERT INTO coffee_shop VALUES (2, 'joecafe', 'alhambra', 'CA');

INSERT INTO coffee_shop VALUES (3, 'morningcafe', 'long beach', 'CA');

INSERT INTO employee VALUES (1, 'john', 'smith', '2020-04-19', 'cashier', 1);

INSERT INTO employee VALUES (2, 'leslie', 'doe', '2020-01-20', 'barista', 2);

INSERT INTO employee VALUES (3, 'michael', 'bonco', '2022-06-01', 'waiter', 3);
```

2.B

The screenshot shows the SQL Fiddle interface for MySQL 5.6. The left panel displays a block of SQL code for creating tables and inserting data into four tables: supplier, coffee, coffee\_shop, and employee. The right panel shows a success message "1" indicating the execution was successful. At the bottom, a green bar indicates "Schema Ready".

```
12 INSERT INTO supplier VALUES (1, 'PEEL', 'USA', 'BEN WHITE', 'bwhite@peelco.com');
13 INSERT INTO supplier VALUES (2, 'BEANS', 'UK', 'JEN BROWN', 'jbrown@beans.co.uk');
14 INSERT INTO supplier VALUES (3, 'SCOFFEE', 'BRAZIL', 'MIKE GREY', 'mgrey@scoffee.com');
15
16 INSERT INTO coffee VALUES (1, 1, 1, 'pcoffee', '10.0');
17 INSERT INTO coffee VALUES (2, 2, 2, 'bcoffee', '12.0');
18 INSERT INTO coffee VALUES (3, 3, 3, 'scoffee', '9.0');
19
20 INSERT INTO coffee_shop VALUES (1, 'coffegame', 'pasadena', 'CA');
21 INSERT INTO coffee_shop VALUES (2, 'joe cafe', 'alhambra', 'CA');
22 INSERT INTO coffee_shop VALUES (3, 'morningcafe', 'long beach', 'CA');
23
24 INSERT INTO employee VALUES (1, 'john', 'smith', '2020-04-19', 'cashier', 1);
25 INSERT INTO employee VALUES (2, 'leslie', 'doe', '2020-01-20', 'barista', 2);
26 INSERT INTO employee VALUES (3, 'michael', 'bonco', '2022-06-01', 'waiter', 3);
```

Run SQL [;]

1

Build Schema Edit Fullscreen Browser [;]

✓ Schema Ready

3.A

```
CREATE VIEW fullname  
AS SELECT employee_id,  
CONCAT(first_name, ' ', last_name) AS employee_full_name,  
hire_date,  
job_title,  
shop_id  
FROM employee;
```

3.B

sqlfiddle.com/#!9/84f734d/1

SQL Fiddle MySQL 5.6 View Sample Fiddle Clear Text to DDL Donate About

```
49
50 INSERT INTO coffee_shop VALUES (1, 'coffegame', 'pasadena', 'CA');
51 INSERT INTO coffee_shop VALUES (2, 'joe cafe', 'alhambra', 'CA');
52 INSERT INTO coffee_shop VALUES (3, 'morningcafe', 'long beach', 'CA');
53
54 INSERT INTO employee VALUES (1, 'john', 'smith', '2020-04-19', 'cashier', 1);
55 INSERT INTO employee VALUES (2, 'leslie', 'doe', '2020-01-20', 'barista', 2);
56 INSERT INTO employee VALUES (3, 'michael', 'bonco', '2022-06-01', 'waiter', 3
57 |
58 CREATE VIEW fullname
59 AS SELECT employee_id,
60 CONCAT(first_name, ' ', last_name) AS employee_full_name,
61 hire_date,
62 job_title,
63 shop_id
64 FROM employee;
```

Build Schema ↴ Edit Fullscreen ↴ Browser ↴ [ ; ] ▾ Run SQL ▶ Edit Fullscreen ↴ [ ; ] ▾

employee_id	employee_full_name	hire_date	job_title	shop_id
1	john smith	2020-04-19	cashier	1
2	leslie doe	2020-01-20	barista	2
3	michael bonco	2022-06-01	waiter	3

✓ Record Count: 3; Execution Time: 9ms + View Execution Plan ↗ link

Did this query solve the problem? If so, consider donating \$5 to help make sure SQL Fiddle will be here next time you need help with a database problem. Thanks!

4A

```
CREATE INDEX coffee_name  
ON coffee (coffee_name);
```

4B

sqlfiddle.com/#!9/3221af

SQL Fiddle  MySQL 5.6 ▾ View Sample Fiddle Clear Text to DDL [Donate](#) [About](#)

```
45 INSERT INTO supplier VALUES (1, 'SCOFFEE', 'BRAZIL', 'HILTON GUY');
46 INSERT INTO coffee VALUES (1, 1, 1, 'pcoffee', '10.0');
47 INSERT INTO coffee VALUES (2, 2, 2, 'bcoffee', '12.0');
48 INSERT INTO coffee VALUES (3, 3, 3, 'scoffee', '9.0');
49
50 INSERT INTO coffee_shop VALUES (1, 'coffegame', 'pasadena', 'CA');
51 INSERT INTO coffee_shop VALUES (2, 'joe cafe', 'alhambra', 'CA');
52 INSERT INTO coffee_shop VALUES (3, 'morningcafe', 'long beach', 'CA');
53
54 INSERT INTO employee VALUES (1, 'john', 'smith', '2020-04-19', 'cashier', 1);
55 INSERT INTO employee VALUES (2, 'leslie', 'doe', '2020-01-20', 'barista', 2);
56 INSERT INTO employee VALUES (3, 'michael', 'bonco', '2022-06-01', 'waiter', 3);
57
58 CREATE INDEX coffee_name
59 ON coffee (coffee_name);
```

1  
2

Build Schema  Edit Fullscreen  Browser  [ ; ] ▾ Run SQL  Edit Fullscreen  [ ; ] ▾

✓ Schema Ready

5.A

select\*

from employee

where shop\_id = 1

5B

sqlfiddle.com/#!9/3221af/1

SQL Fiddle MySQL 5.6 View Sample Fiddle Clear Text to DDL Donate About

```
26 state CHAR(2),
27 PRIMARY KEY (shop_id)
28 );
29
30
31 CREATE TABLE employee(
32 employee_id int,
33 first_name VARCHAR(30),
34 last_name VARCHAR(30),
35 hire_date DATE,
36 job_title VARCHAR(30),
37 shop_id int,
38 primary key (employee_id),
39 foreign key (shop_id) references coffee_shop(shop_id)
40 );
41
```

```
1 select*
2 from employee
3 where shop_id = 1
4
```

Build Schema ↴ Edit Fullscreen ↴ Browser ↴ [;]  
Run SQL ▶ Edit Fullscreen ↴ [;]

employee_id	first_name	last_name	hire_date	job_title	shop_id
1	john	smith	2020-04-19	cashier	1

✓ Record Count: 1; Execution Time: 8ms + View Execution Plan ↗ link

Did this query solve the problem? If so, consider donating \$5 to help make sure SQL Fiddle will be here next time you need help with a database problem. Thanks!

6a

```
SELECT*
FROM supplier
JOIN coffee
  ON supplier.supplier_id = coffee.shop_id
JOIN coffee_shop
  ON coffee_shop.shop_id = coffee.shop_id;
```

6B

sqlfiddle.com/#!9/3221af/2

SQL Fiddle MySQL 5.6 View Sample Fiddle Clear Text to DDL Donate About

```

26 state CHAR(2),
27 PRIMARY KEY (shop_id)
28 );
29
30
31 CREATE TABLE employee(
32 employee_id int,
33 first_name VARCHAR(30),
34 last_name VARCHAR(30),
35 hire_date DATE,
36 job_title VARCHAR(30),
37 shop_id int,
38 primary key (employee_id),
39 foreign key (shop_id) references coffee_shop(shop_id)
40 );
41

```

```

1 SELECT*
2 FROM supplier
3 JOIN coffee
4 ON supplier.supplier_id = coffee.shop_id
5 JOIN coffee_shop
6 ON coffee_shop.shop_id = coffee.shop_id;

```

Build Schema ↴ Edit Fullscreen ↴ Browser ↴ [ ; ] ▾ Run SQL ▶ Edit Fullscreen ↴ [ ; ] ▾

supplier_id	company_name	country	sales_contact_name	email	coffee_id	shop_id	supplier_id	coffee_name	price_per_pound	shop_id	shop_name	city	state
1	PEET	USA	BEN WHITE	bwhite@peet.org	1	1	1	pcoffee	10	1	coffegame	pasadena	CA
2	BEANS	UK	JEN BROWN	jbrown@beans.org	2	2	2	bcoffee	12	2	joecafe	alhambra	CA
3	SCOFFEE	BRAZIL	MIKE GREY	mgrey@scoffee.org	3	3	3	scoffee	9	3	morningcafe	long beach	CA

✓ Record Count: 3; Execution Time: 2ms + View Execution Plan ↗ link

Did this query solve the problem? If so, consider donating \$5 to help make sure SQL Fiddle will be here next time you need help with a database problem. Thanks!