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

First Normal Form representing data that is atomic and has no repeating characters.

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 ID	
PK	Bagel ID
	Bagel Name
	Bagel Description
	Bagel Price

A1a) Second Normal Form in which 1NF has been achieved and all attributes are dependent on the key. Bagel order and bagel ID have been broken into their own tables. The Bagel Order Line Item table is a composite key that associates the Bagel ID PK and Bagel Order ID PK.

1b) One bagel order can have many bagel order line items and multiple bagel order line items can have one bagel. Also, one bagel can be on many line items and there can be many line items on a bagel order.

Third Normal Form (3NF)

BAGEL ORDER ID	
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 ID	
PK	Bagel ID
	Bagel Name
	Bagel Description
	Bagel Price

M:1

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

2a/b) Third Normal Form in which 1NF/2NF have been achieved and no transitory dependencies exist. Customer ID has been created to separate customer information from the bagel order ID.

2c/d) One bagel order can have many bagel order line items and multiple bagel order line items can have only 1 bagel. Many line items can have one bagel and one bagel can be on many line items. Also, a bagel order can only be ordered by one customer but a customer can make multiple bagel orders.

(3a/b) Nora's Bagel Bin Database Blueprint Final Physical Database Model

BAGEL ORDER ID		
PK	bagel_order_id	INTEGER
FK	customer_id	NUMERIC(10)
	order_date	TIMESTAMP
	delivery_fee	NUMERIC(2,2)
	special_notes	VARCHAR(50)
	M:1	

1:M

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

M:1

BAGEL ID		
PK	bagel_id	CHAR(2)
	bagel_name	VARCHAR(25)
	bagel_description	VARCHAR(25)
	bagel_price	NUMERIC (3,2)

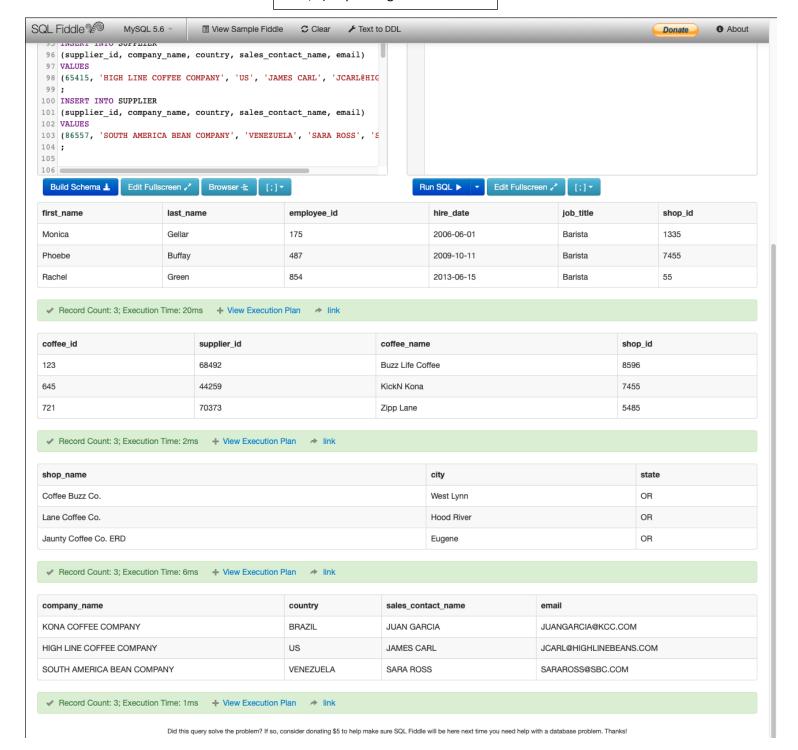| CUSTOMER ORDER ID		
PK	customer_id	NUMERIC(10)
	first_name	VARCHAR(10)
	last_name	VARCHAR(20)
	address_1	VARCHAR(15)
	address_2	VARCHAR(15)
	city	VARCHAR(15)
	state	CHAR(2)
	zip	CHAR(5)
	phone_number	NUMERIC(5)

Database: MySQL v5.7 ▼   ▷ Run   💾 Save   🔁 Load Example   👥 Collaborate   → Sign in   Have any feedback?

Schema SQL ●

Query successfully executed in 13ms ✕

```
 2  CREATE TABLE COFFEE_SHOP
 3  (
 4    shop_id INT PRIMARY KEY,
 5    shop_name VARCHAR(50),
 6    city VARCHAR(50),
 7    state CHAR(2)
 8  );
 9
10  CREATE TABLE EMPLOYEE
11  (
12    employee_id INT PRIMARY KEY,
13    first_name VARCHAR(30),
14    last_name VARCHAR(30),
15    hire_date DATE,
16    job_title VARCHAR(30),
17    shop_id INT,
18    FOREIGN KEY (shop_id) REFERENCES COFFEE_SHOP(shop_id)
19  );
20
21  CREATE TABLE SUPPLIER
22  (
23    supplier_id INT PRIMARY KEY NOT NULL,
24    company_name VARCHAR(50) NOT NULL,
25    country VARCHAR(30) NOT NULL,
26    sales_contact_name VARCHAR(60) NOT NULL,
27    email VARCHAR(50) NOT NULL
28  );
29
30  CREATE TABLE COFFEE
31  (
32    coffee_id INT  PRIMARY KEY,
33    shop_id INT,
34    supplier_id INT,
35    coffee_name VARCHAR(30),
36    price_per_pound NUMERIC(5,2),
37    FOREIGN KEY (shop_id) REFERENCES COFFEE_SHOP(shop_id),
38    FOREIGN KEY (supplier_id) REFERENCES SUPPLIER(supplier_id)
39  );
40
41
42
43  INSERT INTO COFFEE_SHOP
44  (shop_id, shop_name, city, state)
45  VALUES
46  (7455, 'Jaunty Coffee Co. ERD', 'Eugene', 'OR')
47  ;
48
49  INSERT INTO EMPLOYEE
50  (employee_id, first_name, last_name, hire_date, job_title, shop_id)
51  VALUES
52  (487, 'Phoebe', 'Buffay', '2009-10-11', 'Barista', 7455)
53  ;
54
55  INSERT INTO COFFEE
56  (coffee_id, shop_id, supplier_id, coffee_name, price_per_pound)
57  VALUES
58  (645, 7455, 44259, 'KickN Kona', 9.18)
59  ;
60
61  INSERT INTO SUPPLIER
62  (supplier_id, company_name, country, sales_contact_name, email)
63  VALUES
64  (44259, 'KONA COFFEE COMPANY', 'BRAZIL', 'JUAN GARCIA', 'JUANGARCIA@KCC.COM')
65  ;
66
67  CREATE VIEW employee_VIEW AS
68  SELECT
69  GROUP_CONCAT(first_name, ' ', last_name) AS 'EMPLOYEE_FULL_NAME',
70    employee_id,
71    hire_date,
72    job_title,
73    shop_id
74  FROM EMPLOYEE;
75
76  CREATE VIEW coffee_VIEW AS
77  SELECT
78    coffee_id,
79    supplier_id
```

Text to DDL

SQL Fiddle | MySQL 5.6 ▾ | 📋 View Sample Fiddle | ↻ Clear | 🔧 Text to DDL | Donate | ❶ About

```
 95  INSERT INTO SUPPLIER
 96  (supplier_id, company_name, country, sales_contact_name, email)
 97  VALUES
 98  (65415, 'HIGH LINE COFFEE COMPANY', 'US', 'JAMES CARL', 'JCARL@HIG
 99  ;
100  INSERT INTO SUPPLIER
101  (supplier_id, company_name, country, sales_contact_name, email)
102  VALUES
103  (86557, 'SOUTH AMERICA BEAN COMPANY', 'VENEZUELA', 'SARA ROSS', 'S
104  ;
105
106
```

Build Schema ⬆ | Edit Fullscreen ⤢ | Browser ⊣ | [;] ▾   Run SQL ▶ ▾ | Edit Fullscreen ⤢ | [;] ▾

first_name	last_name	employee_id	hire_date	job_title	shop_id
Monica	Gellar	175	2006-06-01	Barista	1335
Phoebe	Buffay	487	2009-10-11	Barista	7455
Rachel	Green	854	2013-06-15	Barista	55

✔ Record Count: 3; Execution Time: 20ms   ➕ View Execution Plan   ➜ link

coffee_id	supplier_id	coffee_name	shop_id
123	68492	Buzz Life Coffee	8596
645	44259	KickN Kona	7455
721	70373	Zipp Lane	5485

✔ Record Count: 3; Execution Time: 2ms   ➕ View Execution Plan   ➜ link

shop_name	city	state
Coffee Buzz Co.	West Lynn	OR
Lane Coffee Co.	Hood River	OR
Jaunty Coffee Co. ERD	Eugene	OR

✔ Record Count: 3; Execution Time: 6ms   ➕ View Execution Plan   ➜ link

company_name	country	sales_contact_name	email
KONA COFFEE COMPANY	BRAZIL	JUAN GARCIA	JUANGARCIA@KCC.COM
HIGH LINE COFFEE COMPANY	US	JAMES CARL	JCARL@HIGHLINEBEANS.COM
SOUTH AMERICA BEAN COMPANY	VENEZUELA	SARA ROSS	SARAROSS@SBC.COM

✔ Record Count: 3; Execution Time: 1ms   ➕ 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!

SQL Fiddle | MySQL 5.6 ▾ | 🗎 View Sample Fiddle | ⟳ Clear | ✏ Text to DDL | Donate | ⓘ About

```
36    email VARCHAR(50) NOT NULL
37  );
38
39
40  INSERT INTO COFFEE_SHOP
41  (shop_id, shop_name, city, state)
42  VALUES
43  (7455, 'Jaunty Coffee Co. ERD', 'Eugene', 'OR')
44  ;
45
46  INSERT INTO EMPLOYEE
47  (employee_id, first_name, last_name, hire_date, job_title, shop_id)
48  VALUES
49  (487, 'Phoebe', 'Buffay', '2009-10-11', 'Barista', 7455)
50  ;
51
52  INSERT INTO COFFEE
53  (coffee_id, shop_id, supplier_id, coffee_name, price_per_pound)
54  VALUES
55  (645, 7455, 44259, 'KickN Kona', 9.18)
56  ;
57
58  INSERT INTO SUPPLIER
59  (supplier_id, company_name, country, sales_contact_name, email)
60  VALUES
61  (44259, 'KONA COFFEE COMPANY', 'BRAZIL', 'JUAN GARCIA', 'JUANGARCIA@
62  ;
63
64  CREATE VIEW employee_VIEW AS
65  SELECT
66  GROUP_CONCAT(first_name, ' ', last_name) AS 'EMPLOYEE_FULL_NAME',
67     employee_id,
68     hire_date,
69     job_title,
70     shop_id
71  FROM EMPLOYEE;
```

```
1
2  SELECT *
3  FROM EMPLOYEE_VIEW
4  ;
5
6
7
8
```

Build Schema ⬇ | Edit Fullscreen ⤢ | Browser ⊞ | [;] ▾   Run SQL ▶ | ▾ | Edit Fullscreen ⤢ | [;] ▾

EMPLOYEE_FULL_NAME	employee_id	hire_date	job_title	shop_id
Phoebe Buffay	487	2009-10-11	Barista	7455

✓ Record Count: 1; Execution Time: 9ms   + View Execution Plan   → link

SQL Fiddle 🐚   MySQL 5.6 ▾   📄 View Sample Fiddle   ⟳ Clear   ⚒ Text to DDL   Donate

```
36    email VARCHAR(50) NOT NULL
37 );
38
39 INSERT INTO COFFEE_SHOP
40 (shop_id, shop_name, city, state)
41 VALUES
42 (7455, 'Jaunty Coffee Co. ERD', 'Eugene', 'OR')
43 ;
44
45 INSERT INTO EMPLOYEE
46 (employee_id, first_name, last_name, hire_date, job_title,
47 VALUES
48 (487, 'Phoebe', 'Buffay', '2009-10-11', 'Barista', 7455)
49 ;
50
51 INSERT INTO COFFEE
52 (coffee_id, shop_id, supplier_id, coffee_name, price_per_po
53 VALUES
54 (645, 7455, 44259, 'KickN Kona', 9.18)
55 ;
56
57 INSERT INTO SUPPLIER
58 (supplier_id, company_name, country, sales_contact_name, en
59 VALUES
60 (44259, 'KONA COFFEE COMPANY', 'BRAZIL', 'JUAN GARCIA', 'JU
61 ;
62
63 CREATE VIEW employee_VIEW AS
64 SELECT
65 GROUP_CONCAT(first_name, ' ', last_name) AS 'EMPLOYEE_FULL_
66    employee_id,
67    hire_date,
68    job_title,
69    shop_id
70 FROM EMPLOYEE;
71
72 CREATE INDEX COFFEE_name ON COFFEE (coffee_name);
```

```
1 SHOW INDEX
2 FROM COFFEE
3 ;
```

Build Schema ⬇   Edit Fullscreen ⤢   Browser ⬅   [;] ▾   Run SQL ▶ ▾   Edit Fullscreen ⤢   [;] ▾

Table	Non_unique	Key_name	Seq_in_index	Column_name	Collation	Cardinality	Sub_part	Packed	Null	Index_type	Comment	Index_comment
coffee	0	PRIMARY	1	coffee_id	A	1	(null)	(null)		BTREE		
coffee	1	shop_id	1	shop_id	A	1	(null)	(null)	YES	BTREE		
coffee	1	COFFEE_name	1	coffee_name	A	1	(null)	(null)	YES	BTREE		

✔ Record Count: 3; Execution Time: 5ms   → link

SQL Fiddle | MySQL 5.6 ▾ | 🗏 View Sample Fiddle | ⟳ Clear | 🔧 Text to DDL | Donate

```
19
20  CREATE TABLE COFFEE
21  (
22    coffee_id INT  PRIMARY KEY,
23    shop_id INT,
24    supplier_id INT,
25    coffee_name VARCHAR(30),
26    price_per_pound NUMERIC(5,2),
27    FOREIGN KEY (shop_id) REFERENCES COFFEE_SHOP(shop_id)
28  );
29
30  CREATE TABLE SUPPLIER
31  (
32    supplier_id INT PRIMARY KEY NOT NULL,
33    company_name VARCHAR(50) NOT NULL,
34    country VARCHAR(30) NOT NULL,
35    sales_contact_name VARCHAR(60) NOT NULL,
36    email VARCHAR(50) NOT NULL
37  );
38
39  INSERT INTO COFFEE_SHOP
40  (shop_id, shop_name, city, state)
41  VALUES
42  (7455, 'Jaunty Coffee Co. ERD', 'Eugene', 'OR')
43  ;
44
45  INSERT INTO EMPLOYEE
46  (employee_id, first_name, last_name, hire_date, job_title,
47  VALUES
48  (487, 'Phoebe', 'Buffay', '2009-10-11', 'Barista', 7455)
49  ;
50
51  INSERT INTO COFFEE
52  (coffee_id, shop_id, supplier_id, coffee_name, price_per_po
53  VALUES
54  (645, 7455, 44259, 'KickN Kona', 9.18)
55  ;
56
```

```
1  SELECT *
2  FROM SUPPLIER
3  WHERE supplier_id = 44259
4  ;
```

Build Schema ⬇ | Edit Fullscreen ⤢ | Browser ▤ | [;] ▾

Run SQL ▶ | ▾ | Edit Fullscreen ⤢ | [;] ▾

supplier_id	company_name	country	sales_contact_name	email
44259	KONA COFFEE COMPANY	BRAZIL	JUAN GARCIA	JUANGARCIA@KCC.COM

✔ Record Count: 1; Execution Time: 6ms   ✚ View Execution Plan   → link

B6 a/b) Table join of three tables.

Schema SQL ●

```sql
1  CREATE TABLE COFFEE_SHOP
2  (
3    shop_id INT PRIMARY KEY,
4    shop_name VARCHAR(50),
5    city VARCHAR(50),
6    state CHAR(2)
7  );
8
9  CREATE TABLE EMPLOYEE
10 (
11   employee_id INT PRIMARY KEY,
12   first_name VARCHAR(30),
13   last_name VARCHAR(30),
14   hire_date DATE,
15   job_title VARCHAR(30),
16   shop_id INT,
17   FOREIGN KEY (shop_id) REFERENCES
   COFFEE_SHOP(shop_id)
18 );
19
20 CREATE TABLE COFFEE
21 (
22   coffee_id INT  PRIMARY KEY,
23   shop_id INT,
24   supplier_id INT,
25   coffee_name VARCHAR(30),
26   price_per_pound NUMERIC(5,2),
27   FOREIGN KEY (shop_id) REFERENCES
   COFFEE_SHOP(shop_id)
28 );
29
30 CREATE TABLE SUPPLIER
31 (
32   supplier_id INT PRIMARY KEY NOT NULL,
33   company_name VARCHAR(50) NOT NULL,
34   country VARCHAR(30) NOT NULL,
35   sales contact name VARCHAR(60) NOT NULL,
```

Text to DDL

Query SQL ●

```sql
1  SELECT
2      city,
3      shop_name,
4      supplier_id,
5      last_name,
6      job_title
7  FROM
8      COFFEE_SHOP t1
9  INNER JOIN COFFEE t2
10     ON t1.shop_id = t2.shop_id
11 INNER JOIN EMPLOYEE t3
12     ON t1.shop_id = t3.shop_id;
```

Results

Copy as Markdown

Query #1   **Execution time: 1ms**

city	shop_name	supplier_id	last_name	job_title
Eugene	Jaunty Coffee Co. ERD	44259	Buffay	Barista