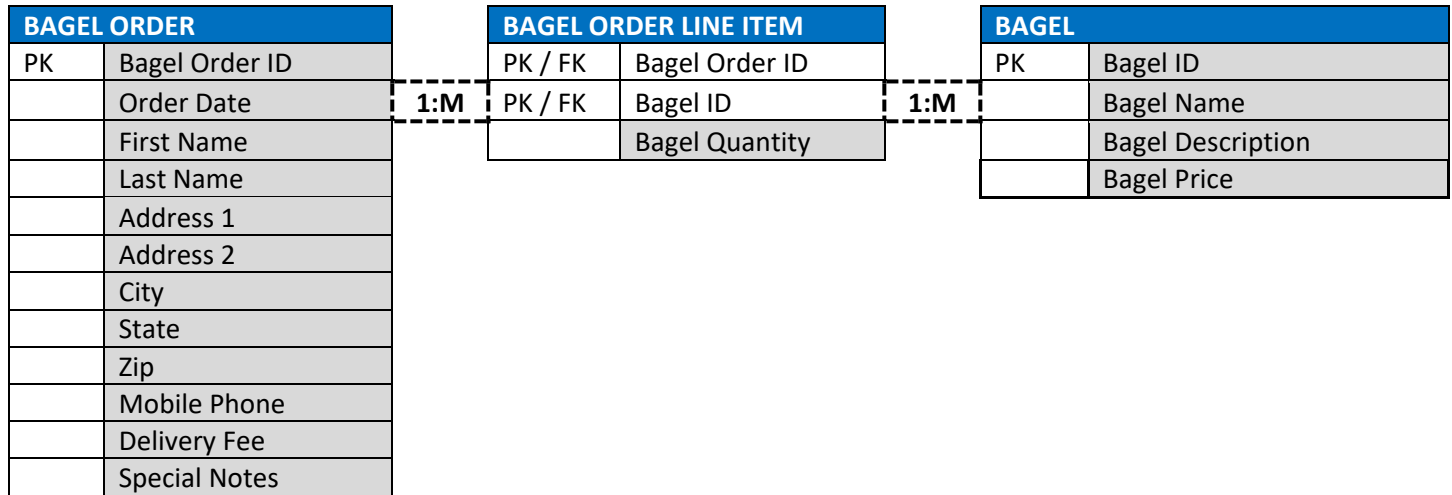


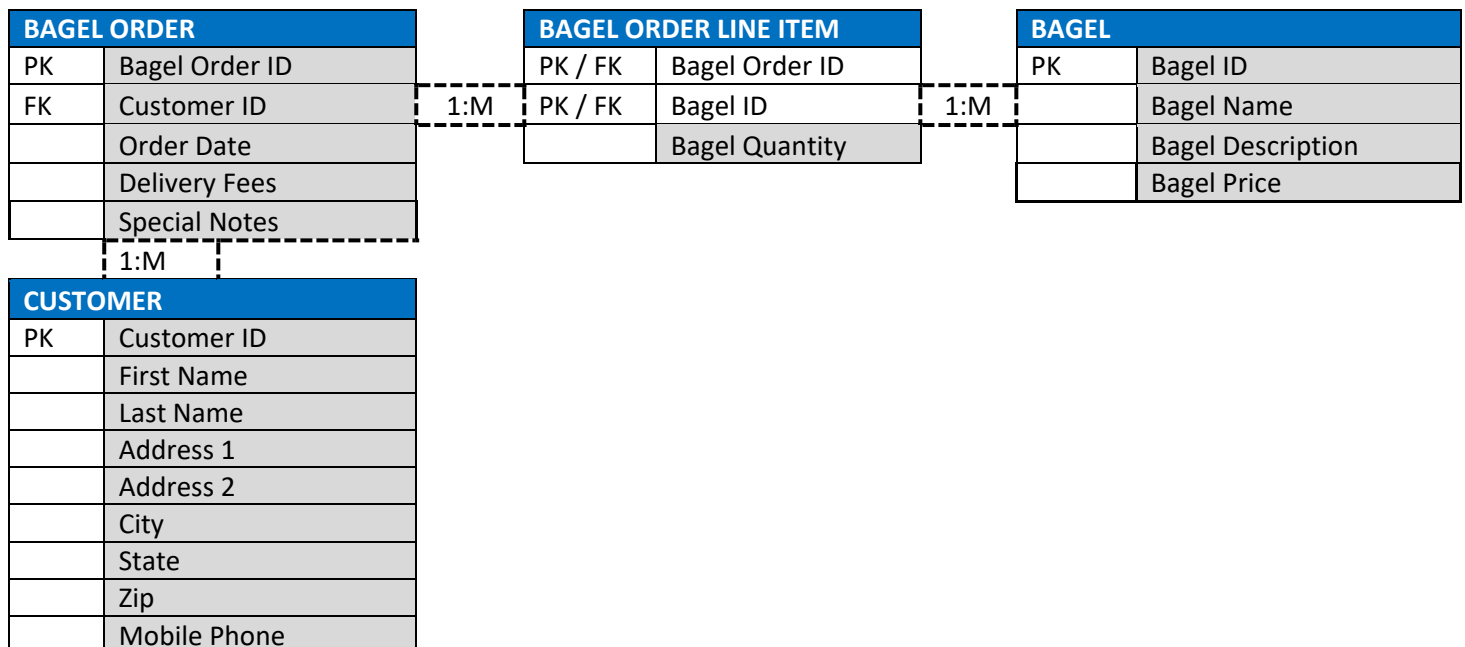
Nora's Bagel Bin(Part A)

A1(2NF)



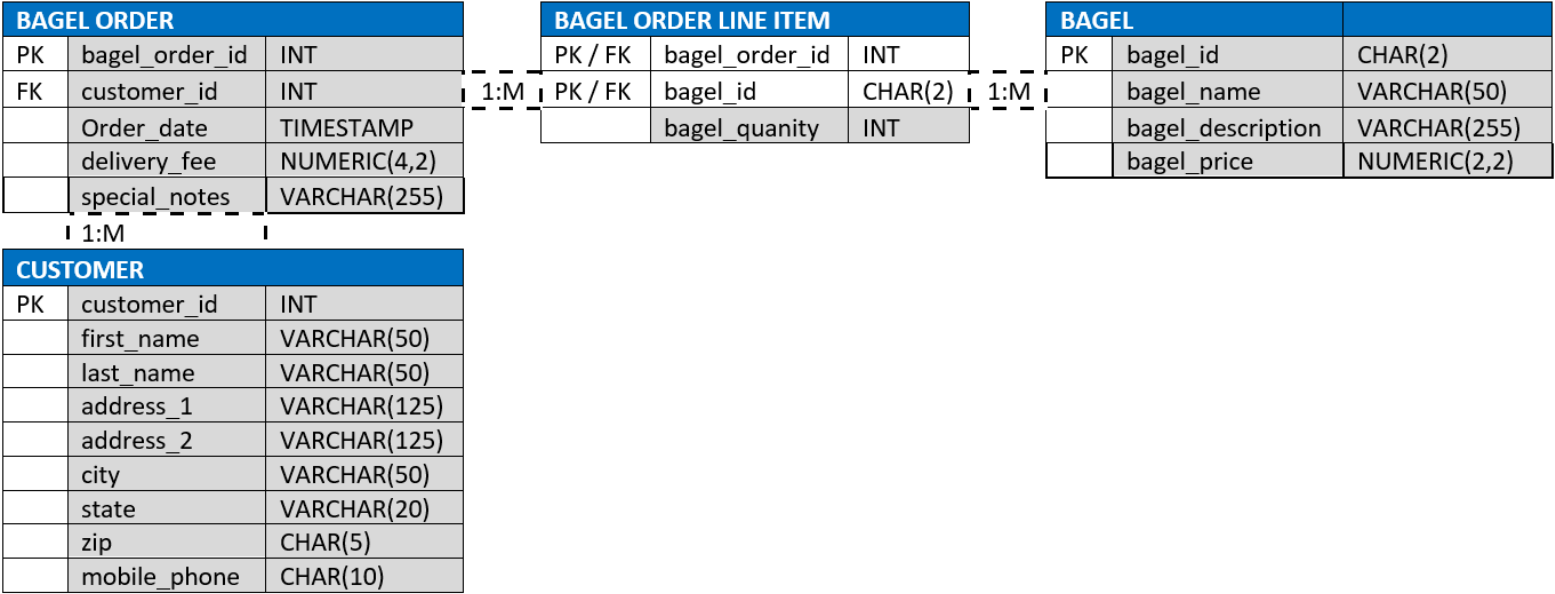
BAGEL ORDSER(1NF) is now separated into 3 tables. For each order all the data in the new BAGEL ORDER(2NF) table is data that will occur only once per order, so it is now separated to avoid redundancy. Multiple Bagels can be bought in one order. To avoid a many-to-many relationship with BAGEL ORDER to BAGEL a linking table has been added. One BAGEL ORDER can order many BAGELs of various amounts. The linking table allow this to occur with the least amount of redundancy and allows for 2NF. BAGEL ORDER entity and the BAGEL ORDER LINE ITEM linking table entity/entities have a one-to-many relationship. Each BAGEL ORDER LINE ITEM contains one Bagel ID and Bagel order ID as a composite key with the quantity as a field. There can be many BAGEL entities but only one unique BAGEL ORDER LINE ITEM related to a BAGEL entity hence BAGEL ORDER LINE ITEM and BAGEL have a one-to-many relationship.

A2(3NF)



To achieve 3NF only one change is needed. This is separating all the fields related to a Customer, their Address and Phone into their own table. This removes the transitive dependency that a customer’s data has with Bagel Order ID, Delivery Fee and Special Notes. This allows for one customer to have many orders with out the customers data being repeated for each order further reducing redundancy. There can be many different customer entities, but there can only be one unique order, so BAGEL ORDER has a one-to-many relationship with CUSTOMER.

A3(Final)



Field names converted to SQL naming convention. Data types with various input size given loose but reasonable assumptions with VARCHAR size. CHAR used in places where static lengths are expected. Maintained CHAR formatting that was provides for bagel_id but used INT for bagel_order_id and customer_id as int was already used on the order form mockup and allows for large amounts of ids as well as easy search and comparison.

Jaunty Coffee Co. ERD (Part B)

B1 - Create Tables

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

```
CREATE TABLE EMPLOYEE ( employee_id INTEGER PRIMARY KEY, first_name VARCHAR(30), last_name VARCHAR(30), hire_date DATE, job_title VARCHAR(30), shop_id INTEGER, FOREIGN KEY(shop_id) REFERENCES COFFEE_SHOP(shop_id));
```

```
CREATE TABLE SUPPLIER ( supplier_id INTEGER, company_name VARCHAR(50), country VARCHAR(30), sales_contact_name VARCHAR(60), email VARCHAR(50) NOT NULL, UNIQUE (supplier_id));
```

```
CREATE TABLE COFFEE ( coffee_id INTEGER PRIMARY KEY, shop_id INTEGER, FOREIGN KEY(shop_id) REFERENCES COFFEE_SHOP(shop_id), supplier_id INTEGER, FOREIGN KEY(supplier_id) REFERENCES SUPPLIER (supplier_id), coffee_name VARCHAR(30), price_per_pound NUMERIC(5,2));
```

```
1      /* B1 Create Tables */
2
3  •   CREATE TABLE COFFEE_SHOP (shop_id INTEGER PRIMARY KEY, shop_name VARCHAR(50), city VARCHAR(50), state CHAR(2));
4
5  •   CREATE TABLE EMPLOYEE ( employee_id INTEGER PRIMARY KEY, first_name VARCHAR(30), last_name VARCHAR(30), hire_date DATE,
6  job_title VARCHAR(30), shop_id INTEGER, FOREIGN KEY(shop_id) REFERENCES COFFEE_SHOP(shop_id));
7
8  •   CREATE TABLE SUPPLIER ( supplier_id INTEGER, company_name VARCHAR(50), country VARCHAR(30), sales_contact_name VARCHAR(60),
9  email VARCHAR(50) NOT NULL, UNIQUE (supplier_id));
10
11 •   CREATE TABLE COFFEE ( coffee_id INTEGER PRIMARY KEY, shop_id INTEGER, FOREIGN KEY(shop_id) REFERENCES COFFEE_SHOP(shop_id),
12 supplier_id INTEGER, FOREIGN KEY(supplier_id) REFERENCES SUPPLIER (supplier_id), coffee_name VARCHAR(30), price_per_pound NUMERIC(5,2));
13
14
```

Output

Action Output

| # | Time | Action | Message |
|-----|----------|--|-------------------|
| ✓ 1 | 23:42:08 | CREATE TABLE COFFEE_SHOP (shop_id INTEGER PRIMARY KEY, shop_name VARCHAR(50), city VARCHAR(50), state CHAR(2)) | 0 row(s) affected |
| ✓ 2 | 23:42:08 | CREATE TABLE EMPLOYEE (employee_id INTEGER PRIMARY KEY, first_name VARCHAR(30), last_name VARCHAR(30), hire_date DATE, job_title VARCHAR(30), shop_id IN... | 0 row(s) affected |
| ✓ 3 | 23:42:08 | CREATE TABLE SUPPLIER (supplier_id INTEGER, company_name VARCHAR(50), country VARCHAR(30), sales_contact_name VARCHAR(60), email VARCHAR(50) NOT NUL... | 0 row(s) affected |
| ✓ 4 | 23:42:08 | CREATE TABLE COFFEE (coffee_id INTEGER PRIMARY KEY, shop_id INTEGER, FOREIGN KEY(shop_id) REFERENCES COFFEE_SHOP(shop_id), supplier_id INTEGER, FO... | 0 row(s) affected |

B2 - Populate Tables

/*Coffee Shops*/

```
INSERT INTO COFFEE_SHOP VALUES('1', 'Java Hut', 'Columbus', 'OH');
```

```
INSERT INTO COFFEE_SHOP VALUES( '2', 'Crispy Cream', 'Chillicothe', 'OH');
```

```
INSERT INTO COFFEE_SHOP VALUES( '3', 'Jim Morton's', 'Chicago', 'IL');
```

/* Employees*/

```
INSERT INTO EMPLOYEE VALUES ('1', 'John', 'Doe', '2021-01-01', 'Barista', '1');
```

```
INSERT INTO EMPLOYEE VALUES ('2', 'Jane', 'Doe', '2021-01-01', 'Barista', '2');
```

```
INSERT INTO EMPLOYEE VALUES ('3', 'Tim', 'Horton', '1964-05-17', 'Manager', '3');
```

/*Suppliers*/

```
INSERT INTO SUPPLIER VALUES('1', 'West Coast Coffee Inc.', 'United States of America', 'Fred Smith', 'fsmith@wccoffee.com');
```

```
INSERT INTO SUPPLIER VALUES( '2', 'Eastern Coffee Exporters', 'India', 'Ram Das', 'ramdas@seacoffe.com');
```

```
INSERT INTO SUPPLIER VALUES( '3', 'Gourmet Cat Coffee', 'Indonesia', 'Intan Anwar', 'intan_anwar@catcoffee.id');
```

/*Coffees*/

```
INSERT INTO COFFEE VALUES ( '1', '3', '1', 'Arabica', '3.70' );
```

```
INSERT INTO COFFEE VALUES ( '2', '2', '2', 'Robusta', '2.90' );
```

```
INSERT INTO COFFEE VALUES ( '3', '1', '3', 'Kopi Luwak', '299.99' );
```

```
1  /*Coffee Shops*/
2  • INSERT INTO COFFEE_SHOP VALUES('1', 'Java Hut', 'Columbus', 'OH');
3  • INSERT INTO COFFEE_SHOP VALUES( '2', 'Crispy Cream', 'Chillicothe', 'OH');
4  • INSERT INTO COFFEE_SHOP VALUES( '3', 'Jim Morton's', 'Chicago', 'IL');
5  /* Employees*/
6  • INSERT INTO EMPLOYEE VALUES ('1', 'John', 'Doe', '2021-01-01', 'Barista', '1');
7  • INSERT INTO EMPLOYEE VALUES ('2', 'Jane', 'Doe', '2021-01-01', 'Barista', '2');
8  • INSERT INTO EMPLOYEE VALUES ('3', 'Tim', 'Horton', '1964-05-17', 'Manager', '3');
9  /*Suppliers*/
10 • INSERT INTO SUPPLIER VALUES('1', 'West Coast Coffee Inc.', 'United States of America', 'Fred Smith', 'fsmith@wccoffee.com');
11 • INSERT INTO SUPPLIER VALUES( '2', 'Eastern Coffee Exporters', 'India', 'Ram Das', 'ramdas@seacoffe.com');
12 • INSERT INTO SUPPLIER VALUES( '3', 'Gourmet Cat Coffee', 'Indonesia', 'Intan Anwar', 'intan_anwar@catcoffee.id');
13 /*Coffees*/
14 • INSERT INTO COFFEE VALUES ( '1', '3', '1', 'Arabica', '3.70' );
15 • INSERT INTO COFFEE VALUES ( '2', '2', '2', 'Robusta', '2.90' );
16 • INSERT INTO COFFEE VALUES ( '3', '1', '3', 'Kopi Luwak', '299.99' );
17
18
```

Output

Action Output

| # | Time | Action | Message |
|------|----------|---|-------------------|
| ✓ 1 | 23:43:44 | INSERT INTO COFFEE_SHOP VALUES('1', 'Java Hut', 'Columbus', 'OH') | 1 row(s) affected |
| ✓ 2 | 23:43:44 | INSERT INTO COFFEE_SHOP VALUES('2', 'Crispy Cream', 'Chillicothe', 'OH') | 1 row(s) affected |
| ✓ 3 | 23:43:44 | INSERT INTO COFFEE_SHOP VALUES('3', 'Jim Morton's', 'Chicago', 'IL') | 1 row(s) affected |
| ✓ 4 | 23:43:44 | INSERT INTO EMPLOYEE VALUES ('1', 'John', 'Doe', '2021-01-01', 'Barista', '1') | 1 row(s) affected |
| ✓ 5 | 23:43:44 | INSERT INTO EMPLOYEE VALUES ('2', 'Jane', 'Doe', '2021-01-01', 'Barista', '2') | 1 row(s) affected |
| ✓ 6 | 23:43:44 | INSERT INTO EMPLOYEE VALUES ('3', 'Tim', 'Horton', '1964-05-17', 'Manager', '3') | 1 row(s) affected |
| ✓ 7 | 23:43:44 | INSERT INTO SUPPLIER VALUES('1', 'West Coast Coffee Inc.', 'United States of America', 'Fred Smith', 'fsmith@wccoffee.com') | 1 row(s) affected |
| ✓ 8 | 23:43:44 | INSERT INTO SUPPLIER VALUES('2', 'Eastern Coffee Exporters', 'India', 'Ram Das', 'ramdas@seacoffe.com') | 1 row(s) affected |
| ✓ 9 | 23:43:44 | INSERT INTO SUPPLIER VALUES('3', 'Gourmet Cat Coffee', 'Indonesia', 'Intan Anwar', 'intan_anwar@catcoffee.id') | 1 row(s) affected |
| ✓ 10 | 23:43:44 | INSERT INTO COFFEE VALUES ('1', '3', '1', 'Arabica', '3.70') | 1 row(s) affected |
| ✓ 11 | 23:43:44 | INSERT INTO COFFEE VALUES ('2', '2', '2', 'Robusta', '2.90') | 1 row(s) affected |
| ✓ 12 | 23:43:44 | INSERT INTO COFFEE VALUES ('3', '1', '3', 'Kopi Luwak', '299.99') | 1 row(s) affected |

B3 – Concat First & Last Names

```
CREATE VIEW concated_names AS SELECT *, CONCAT (first_name, ' ', last_name) AS employee_full_name FROM EMPLOYEE;
```

```
1 CREATE VIEW concated_names AS SELECT *, CONCAT (first_name, ' ', last_name) AS employee_full_name FROM EMPLOYEE;
2 • SELECT * FROM concated_names;
```

< **Result Grid** Filter Rows: | Export: | Wrap Cell Content:

| | employee_id | first_name | last_name | hire_date | job_title | shop_id | employee_full_name |
|---|-------------|------------|-----------|------------|-----------|---------|--------------------|
| ▶ | 1 | John | Doe | 2021-01-01 | Barista | 1 | John Doe |
| | 2 | Jane | Doe | 2021-01-01 | Barista | 2 | Jane Doe |
| | 3 | Tim | Horton | 1964-05-17 | Manager | 3 | Tim Horton |

concated_names 8 ×

Output :

Action Output ▼

| | # | Time | Action | Message |
|---|---|----------|---|-------------------|
| ✓ | 1 | 00:00:02 | CREATE VIEW concated_names AS SELECT *, CONCAT (first_name, ' ', last_name) AS employee_full_name FROM EMPLOYEE | 0 row(s) affected |
| ✓ | 2 | 00:00:02 | SELECT * FROM concated_names LIMIT 0, 1000 | 3 row(s) returned |

B4 – Create Index On coffee_name

```
CREATE INDEX coffee_index ON COFFEE(coffee_name);
```

```
1 CREATE INDEX coffee_index ON COFFEE(coffee_name);
```

Output

Action Output ▼

| | # | Time | Action | Message |
|---|---|----------|--|--|
| ✓ | 1 | 00:05:57 | CREATE INDEX coffee_index ON COFFEE(coffee_name) | 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 |

B5 – Create Index On coffee_name

```
SELECT * FROM EMPLOYEE WHERE job_title='Barista';
```

1 `SELECT * FROM EMPLOYEE WHERE job_title='Barista';`

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

| | employee_id | first_name | last_name | hire_date | job_title | shop_id |
|---|-------------|------------|-----------|------------|-----------|---------|
| ▶ | 1 | John | Doe | 2021-01-01 | Barista | 1 |
| | 2 | Jane | Doe | 2021-01-01 | Barista | 2 |
| * | NULL | NULL | NULL | NULL | NULL | NULL |

Output

Action Output

| # | Time | Action | Message |
|-----|----------|---|-------------------|
| ✓ 1 | 00:08:55 | SELECT * FROM EMPLOYEE WHERE job_title='Barista' LIMIT... | 2 row(s) returned |

B6 – Table Joins

```
SELECT * FROM COFFEE_SHOP
```

```
JOIN COFFEE ON COFFEE_SHOP.shop_id = COFFEE.shop_id
```

```
JOIN EMPLOYEE ON COFFEE_SHOP.shop_id = EMPLOYEE.shop_id;
```

1 • `SELECT * FROM COFFEE_SHOP`
2 `JOIN COFFEE ON COFFEE_SHOP.shop_id = COFFEE.shop_id`
3 `JOIN EMPLOYEE ON COFFEE_SHOP.shop_id = EMPLOYEE.shop_id;`

Result Grid | Filter Rows: | Export: | Wrap Cell Content: |

| | shop_id | shop_name | city | state | coffee_id | shop_id | supplier_id | coffee_name | price_per_pound | employee_id | first_name | last_name | hire_date | job_title | shop_id |
|---|---------|--------------|-------------|-------|-----------|---------|-------------|-------------|-----------------|-------------|------------|-----------|------------|-----------|---------|
| ▶ | 3 | Jim Morton's | Chicago | IL | 1 | 3 | 1 | Arabica | 3.70 | 3 | Tim | Horton | 1964-05-17 | Manager | 3 |
| | 2 | Crispy Cream | Chillicothe | OH | 2 | 2 | 2 | Robusta | 2.90 | 2 | Jane | Doe | 2021-01-01 | Barista | 2 |
| | 1 | Java Hut | Columbus | OH | 3 | 1 | 3 | Kopi Luwak | 299.99 | 1 | John | Doe | 2021-01-01 | Barista | 1 |

Result 13 ×

Output

Action Output

| # | Time | Action | Message |
|-----|----------|--|-------------------|
| ✓ 1 | 00:22:47 | SELECT * FROM COFFEE_SHOP JOIN COFFEE ON COFFEE... | 3 row(s) returned |