Josh Butcher C170 PA

A1a-b.

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

A1c. I chose the attributes based on what was important to each table. The bagel table doesn't need to know the customer's address. There should be one order form, Bagel Order, for potentially many different bagel orders, Line Item, and many line items for one type of bagel. That would achieve ordering different bagel types and different quantities of those types.

A2a-d.

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

A2e.

I again chose the attributes based on what was important to each table, adding the customer information table, isolates the customer information from the bagel order. It makes the data more cohesive. So, a customer orders bagels, there is one customer on many bagel orders. There is one bagel order form for many bagel line items. And each bagel type gets a new bagel line item, so there are many bagel line items for one bagel type.

A3a-b.

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

Final Physical Database Model

BAGEL ORDER		
PK	bagel_order_id	INT
FK	customer_id	INT
	order_date	TIMESTAMP
	delivery_fee	NUMERIC(3,2)
	special_notes	VARCHAR(50)

1 M

M 1

CUSTOMER INFORMATION		
PK	customer_id	INT
	first_name	VARCHAR(15)
	last_name	VARCHAR(15)
	address1	VARCHAR(15)
	address2	VARCHAR(15)
	city	VARCHAR(15)
	state	CHAR(2)
	zip	CHAR(5)
	mobile_phone	VARCHAR(15)

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

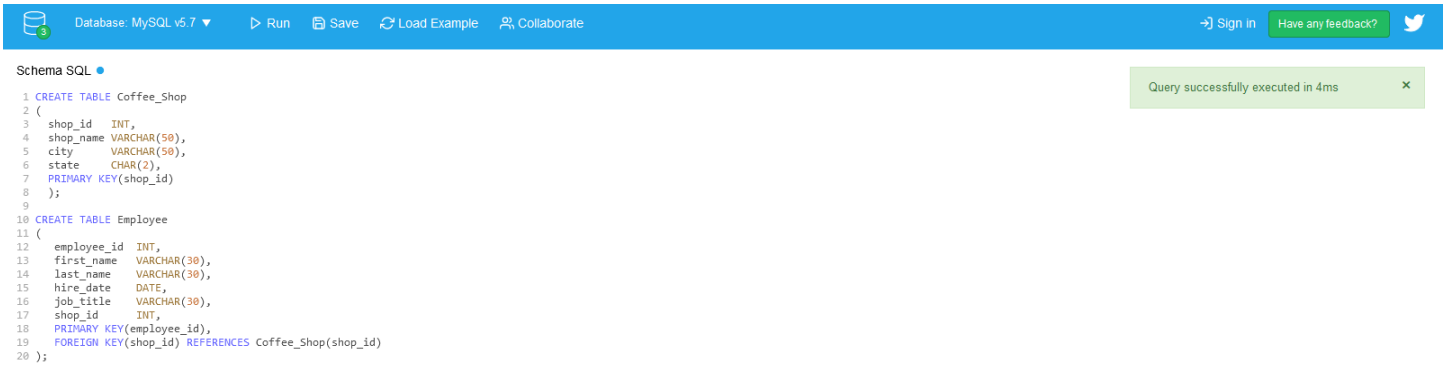
M 1

BAGEL		
PK	bagel_id	CHAR(2)
	bagel_name	VARCHAR(30)
	bagel_desc	VARCHAR(30)
	bagel_price	NUMERIC(3,2)

B1a-b.

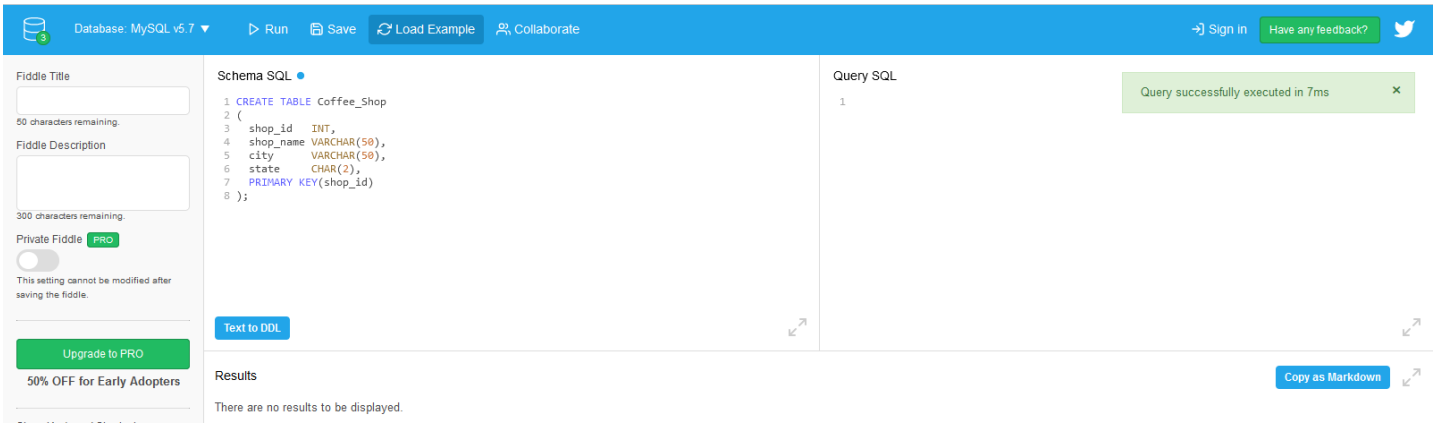
Employee Database

```
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)
);
```



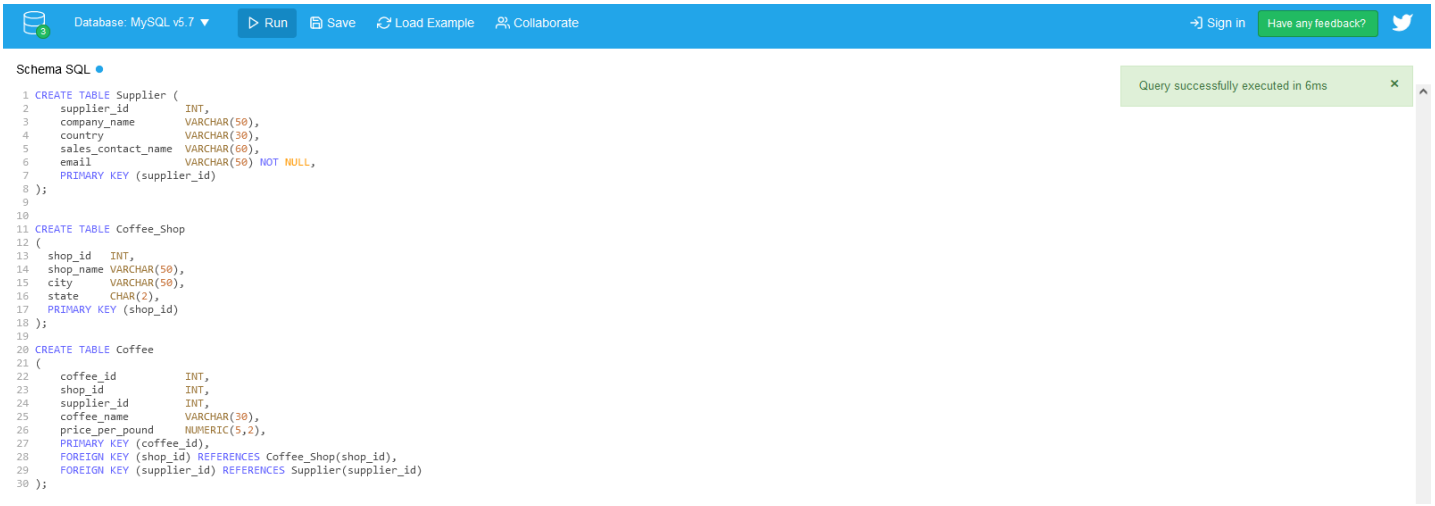
Coffee_Shop Database

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



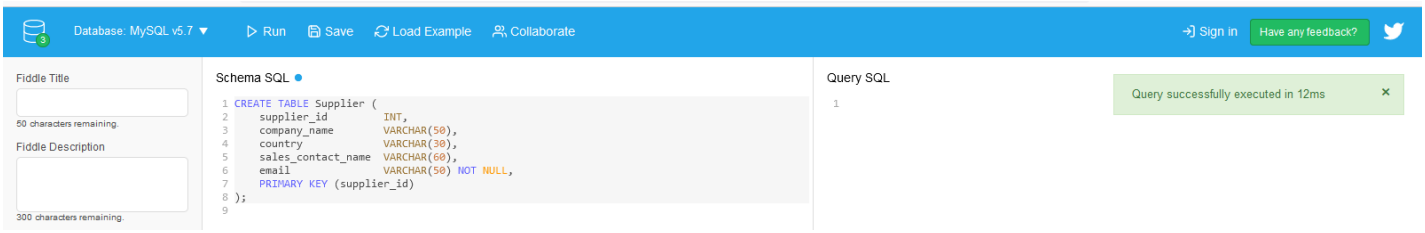
Coffee Database

```
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 Coffee_Shop(shop_id),
        FOREIGN KEY (supplier_id) REFERENCES Supplier(supplier_id)
);
```



Supplier Database

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



B2a-b.

Supplier Database

INSERT INTO Supplier
VALUES (123, "Coffee Supplies", "USA", "Penny", "penny@coffeesupplies.com");

INSERT INTO Supplier
VALUES (124, "Coffee Cups and More", "USA", "Dan", "dan@ccandmore.com");

INSERT INTO Supplier
VALUES (125, "Hot Coffee Supplies", "USA", "George", "george@hcs.com");

Query SQL

```
INSERT INTO Supplier
VALUES (123, "Coffee Supplies", "USA", "Penny", "penny@coffeesupplies.com");

INSERT INTO Supplier
VALUES (124, "Coffee Cups and More", "USA", "Dan", "dan@ccandmore.com");

INSERT INTO Supplier
VALUES (125, "Hot Coffee Supplies", "USA", "George", "george@hcs.com");
```

Query #16 Execution time: 0ms

supplier_id	company_name	country	sales_contact_name	email
123	Coffee Supplies	USA	Penny	penny@coffeesupplies.com
124	Coffee Cups and More	USA	Dan	dan@ccandmore.com
125	Hot Coffee Supplies	USA	George	george@hcs.com

Coffee Shop Database

INSERT INTO Coffee_Shop
VALUES (10, "Coffee Me", "Chicago", "IL");

INSERT INTO Coffee_Shop
VALUES (11, "Starbucks", "Oklahoma City", "OK");

INSERT INTO Coffee_Shop
VALUES (12, "I Don't Drink Coffee Engergy Co.", "Choctaw", "OK");

```
INSERT INTO Coffee_Shop
VALUES (10, "Coffee Me", "Chicago", "IL");

INSERT INTO Coffee_Shop
VALUES (11, "Starbucks", "Oklahoma City", "OK");

INSERT INTO Coffee_Shop
VALUES (12, "I Don't Drink Coffee Engergy Co.", "Choctaw", "OK");
```

Query #13 Execution time: 1ms

shop_id	shop_name	city	state
10	Coffee Me	Chicago	IL
11	Starbucks	Oklahoma City	OK
12	I Don't Drink Coffee Engergy Co.	Choctaw	OK

Coffee Database

INSERT INTO Coffee
VALUES (963, 10, 123, "Dark Roast", 9.65);

INSERT INTO Coffee
VALUES (969, 11, 124, "Light Roast", 4.52);

INSERT INTO Coffee
VALUES (999, 12, 125, "Hot Mama Roast", 19.65);

```
19 INSERT INTO Coffee
20 VALUES (963, 10, 123, "Dark Roast", 9.65);
21
22 INSERT INTO Coffee
23 VALUES (969, 11, 124, "Light Roast", 4.52);
24
25 INSERT INTO Coffee
26 VALUES (999, 12, 125, "Hot Mama Roast", 19.65);
```

Query #15 Execution time: 0ms

coffee_id	shop_id	supplier_id	coffee_name	price_per_pound
963	10	123	Dark Roast	9.65
969	11	124	Light Roast	4.52
999	12	125	Hot Mama Roast	19.65

Employee Database

INSERT INTO Employee
VALUES (1113, "Harry", "Knuckles", "1985-06-26", "Manager", 12);

INSERT INTO Employee
VALUES (1123, "Betty", "White", "2002-07-14", "Manager", 11);

INSERT INTO Employee
VALUES (1103, "John", "Doe", "2022-04-05", "Manager", 10);

```
27
28 INSERT INTO Employee
29 VALUES (1113, "Harry", "Knuckles", "1985-06-26", "Manager", 12);
30
31 INSERT INTO Employee
32 VALUES (1123, "Betty", "White", "2002-07-14", "Manager", 11);
33
34 INSERT INTO Employee
35 VALUES (1103, "John", "Doe", "2022-04-05", "Manager", 10);
36
```

Show Keyboard Shortcuts

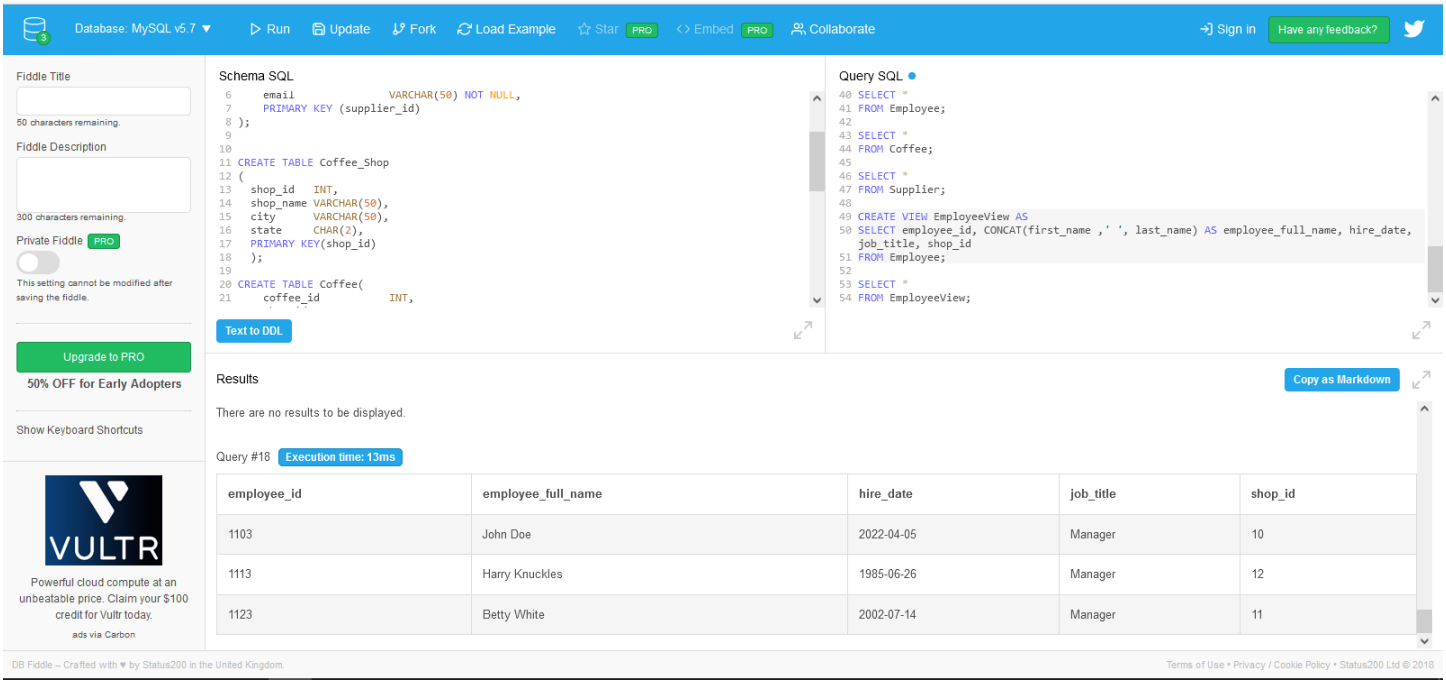
Query #14 Execution time: 0ms

employee_id	first_name	last_name	hire_date	job_title	shop_id
1103	John	Doe	2022-04-05	Manager	10
1113	Harry	Knuckles	1985-06-26	Manager	12
1123	Betty	White	2002-07-14	Manager	11

B3a.

CREATE VIEW EmployeeView AS
SELECT employee_id, CONCAT(first_name ,' ', last_name) AS employee_full_name, hire_date, job_title, shop_id
FROM Employee;

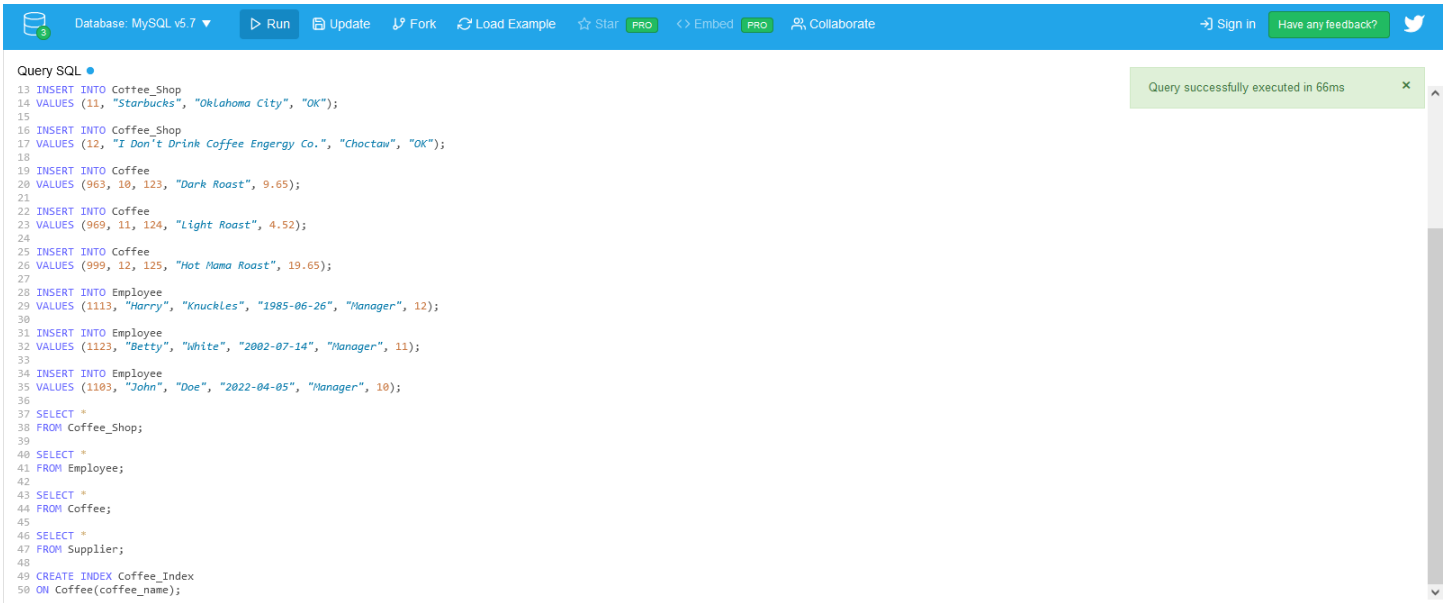
B3b.



B4a.

CREATE INDEX Coffee_Index
ON Coffee(coffee_name);

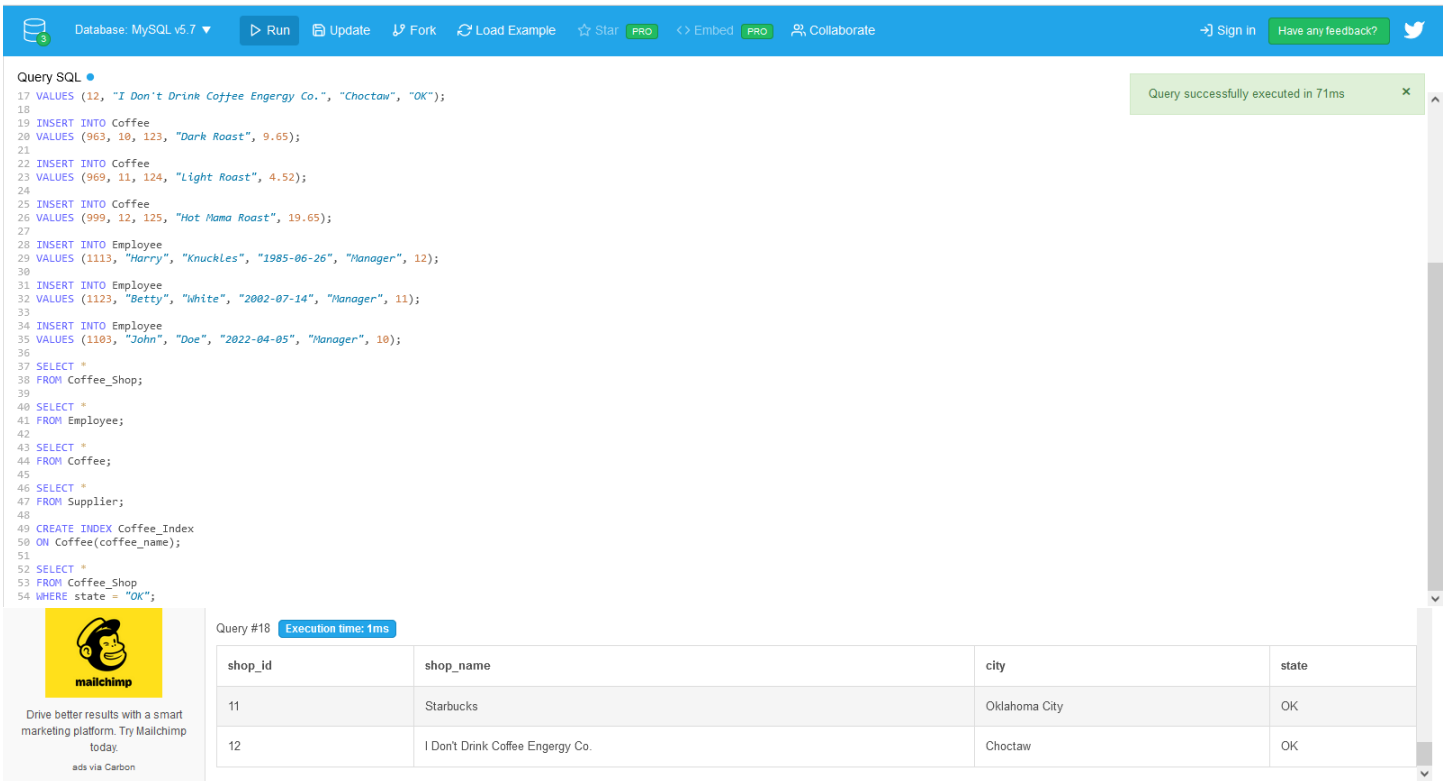
B4b.



B5a.

```
SELECT *
FROM Coffee_Shop
WHERE state = "OK";
```

B5b.



B6a.

```
SELECT Coffee.coffee_name, Coffee_Shop.shop_name, Supplier.company_name
FROM Coffee
  JOIN Coffee_Shop
    ON Coffee.shop_id = Coffee_Shop.shop_id
  JOIN Supplier
    ON Coffee.supplier_id = Supplier.supplier_id;
```

B6b.

Query SQL

```
INSERT INTO Supplier
VALUES (125, "Hot Coffee Supplies", "USA", "George", "george@hcs.com");

INSERT INTO Coffee_Shop
VALUES (10, "Coffee Me", "Chicago", "IL");

INSERT INTO Coffee_Shop
VALUES (11, "Starbucks", "Oklahoma City", "OK");

INSERT INTO Coffee_Shop
VALUES (12, "I Don't Drink Coffee Engergy Co.", "Choctaw", "OK");

INSERT INTO Coffee
VALUES (963, 10, 123, "Dark Roast", 9.65);

INSERT INTO Coffee
VALUES (969, 11, 124, "Light Roast", 4.52);

INSERT INTO Coffee
VALUES (999, 12, 125, "Hot Mama Roast", 19.65);

INSERT INTO Employee
VALUES (1113, "Harry", "Knuckles", "1985-06-26", "Manager", 12);

INSERT INTO Employee
VALUES (1123, "Betty", "White", "2002-07-14", "Manager", 11);

INSERT INTO Employee
VALUES (1103, "John", "Doe", "2022-04-05", "Manager", 10);


SELECT
    Coffee.coffee_name, Coffee_Shop.shop_name, Supplier.company_name
FROM Coffee
JOIN Coffee_Shop
ON Coffee.shop_id = Coffee_Shop.shop_id
JOIN Supplier
ON Coffee.supplier_id = Supplier.supplier_id;
```

Query successfully executed in 29ms

coffee_name	shop_name	company_name
Dark Roast	Coffee Me	Coffee Supplies
Light Roast	Starbucks	Coffee Cups and More
Hot Mama Roast	I Don't Drink Coffee Engergy Co.	Hot Coffee Supplies