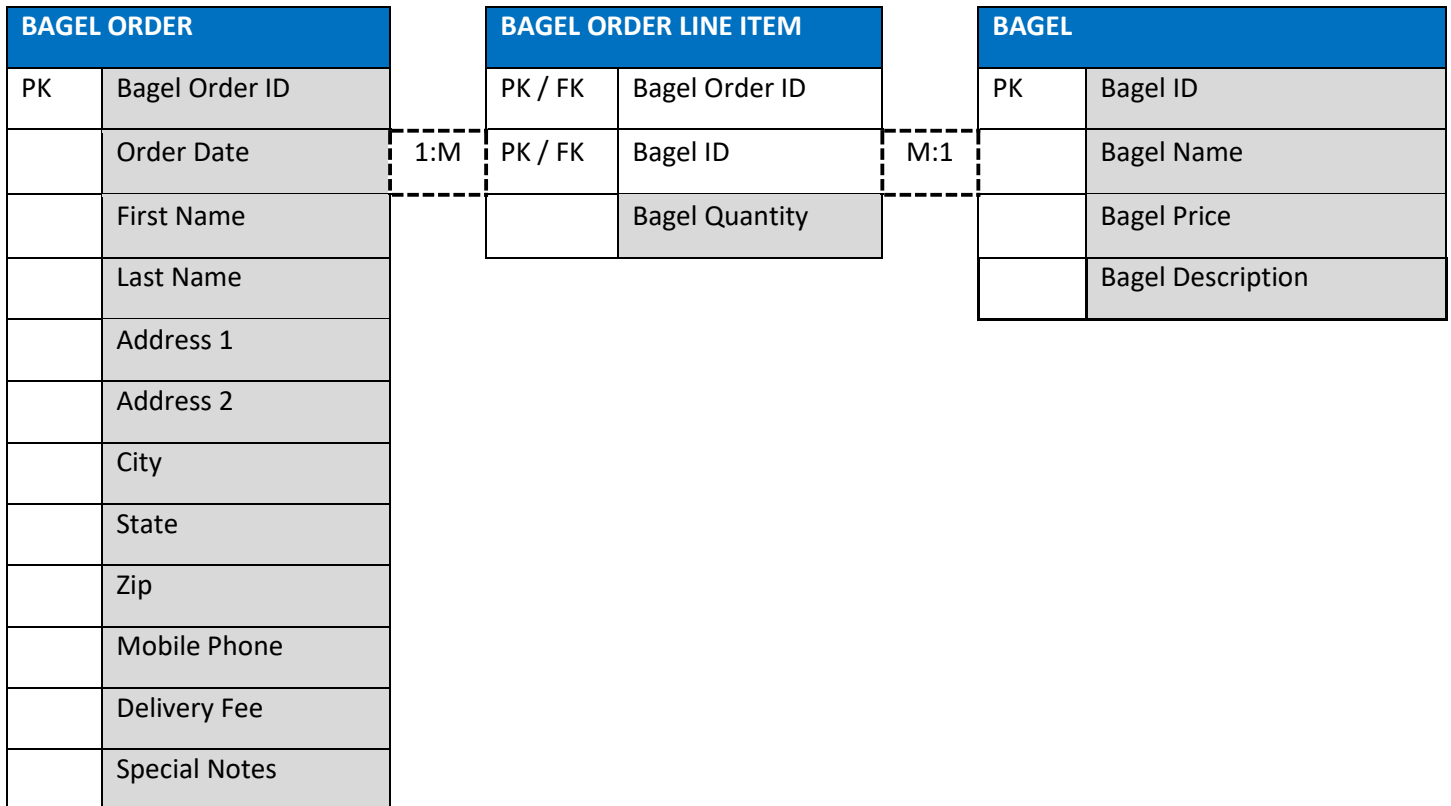


Paul Overfelt III

WGU C170 PA

1A,1B

Nora's Bagel Bin Database Blueprints



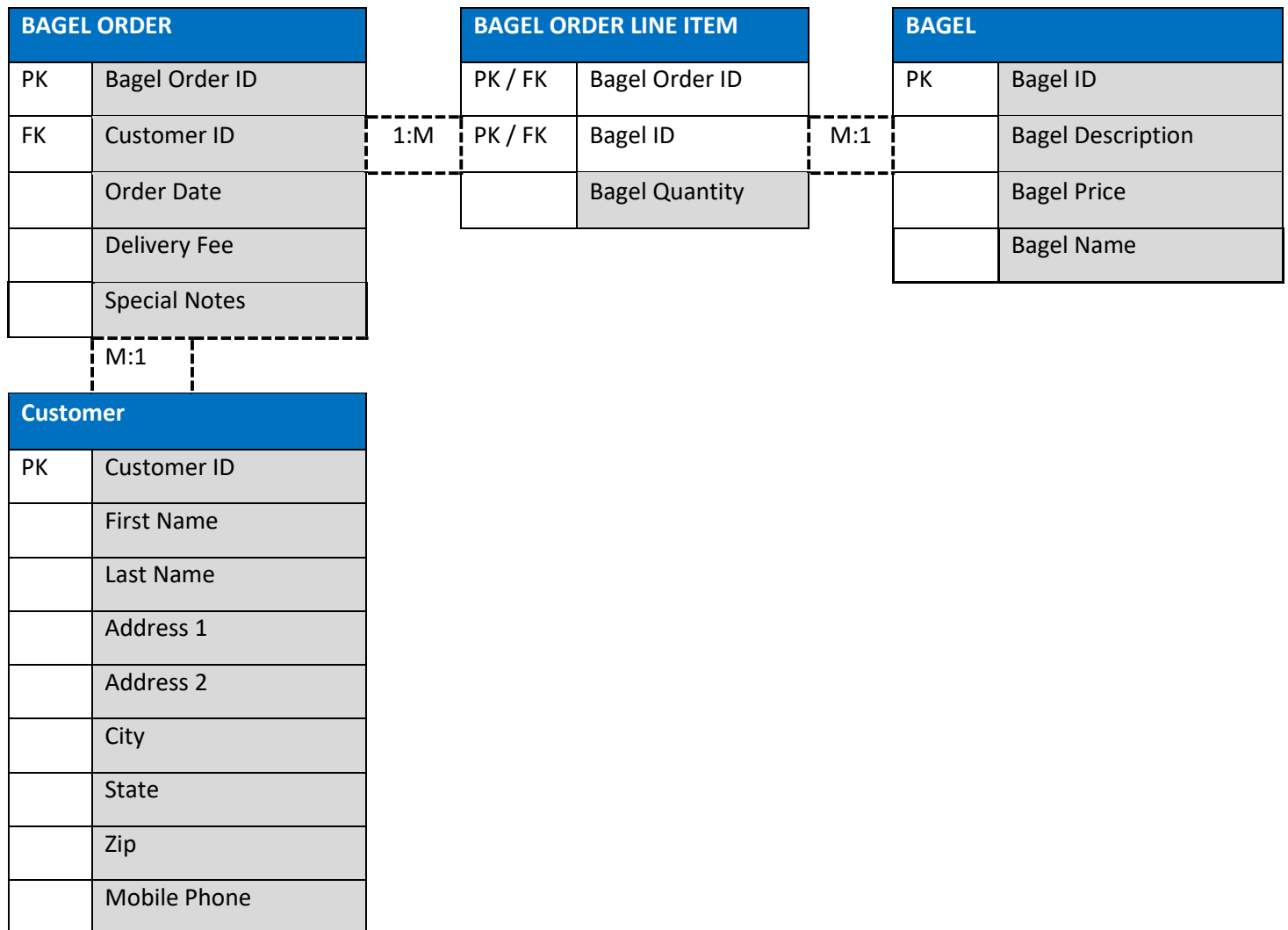
1C

Attributes were assigned to each table for 2NF based on their relationship with a Primary Key. For 2NF all non-key values must be completely dependent on the full Primary Key of the table. For table Bagel Order all the values (Order Date, First Name, Last Name, etc.) are dependent on the Order so they are dependent on the Order ID. The same goes for Table Bagel. The name, price, and description are dependent on the Bagel ID.

How the cardinality between the tables was determined is, for every Order ID, there could be many line items, so you have a one-to-many relationship. For Bagel Order Line Item to Bagel, there could be many line items that will point to one Bagel, so it is a Many to one relationship.

2A,2B,2C,2D

Nora's Bagel Bin Database Blueprints



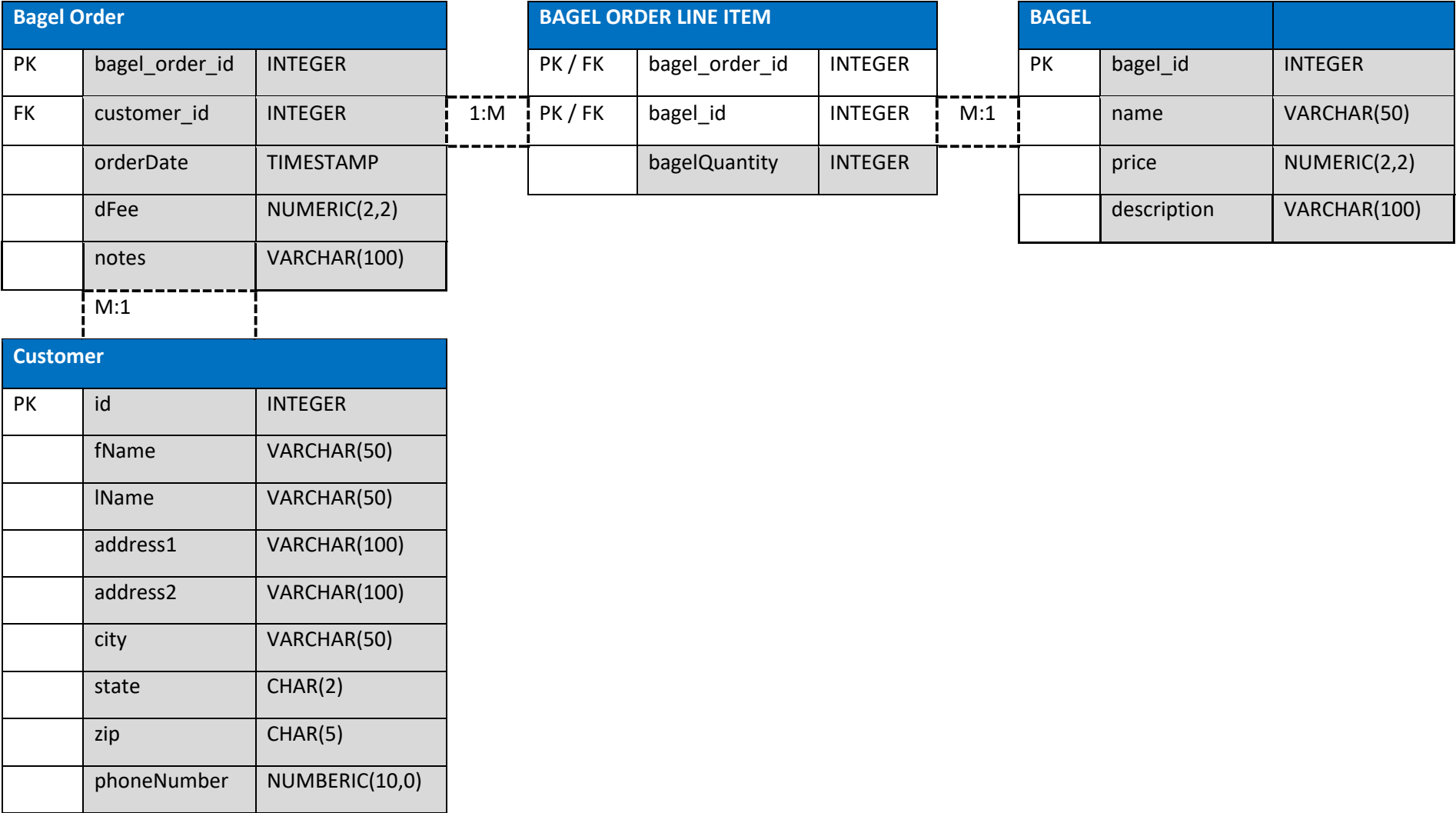
2E

For 3NF the Bagel Order Table was broken down into Bagel Order and Customer Tables. This is due to 3NF requiring no attributes to be transitively on other attributes not part of the PK. Since the attributes First Name, Last Name, Address, etc. relate more to the customer than the order, we can move them into their table to reduce the amount of information redundancy in the Bagel Order table.

As for the cardinality between the tables. Bagel Order – Customer is a Many-to-One relationship because each customer can have many orders. The other relationships do not change going from 2NF to 3NF.

3A,3B

Nora’s Bagel Bin Database Blueprints



B1a,B1b

```
CREATE DATABASE JauntyCoffee;
```

```
USE JauntyCoffee;
```

```
CREATE TABLE Coffee_Shop (
```

```
    shop_id    INT PRIMARY KEY,
```

```
    shop_name  VARCHAR(50),
```

```
    city       VARCHAR(50),
```

```
    state      CHAR(2)
```

```
);
```

```
CREATE TABLE Supplier (
```

```
    supplier_id    INT PRIMARY KEY,
```

```
    company_name    VARCHAR(50),
```

```
    country         VARCHAR(30),
```

```
    sales_contact_name  VARCHAR(60),
```

```
    email           VARCHAR(50) NOT NULL
```

```
);
```

```
CREATE TABLE Employee (
```

```
    employee_id  INT PRIMARY KEY,
```

```
    first_name   VARCHAR(30),
```

```
    last_name    VARCHAR(30),
```

```
    hire_date    DATE,
```

```
    job_title    VARCHAR(30),
```

```
    shop_id      INT,
```

```
    FOREIGN KEY (shop_id) REFERENCES Coffee_Shop(shop_id)
```

```
);
```

```
CREATE TABLE Coffee (
```

```
    coffee_id    INT PRIMARY KEY,
```

```

shop_id    INT,

supplier_id INT,

coffee_name VARCHAR(30),

price_per_pound NUMERIC(5,2),

FOREIGN KEY (shop_id) REFERENCES Coffee_Shop(shop_id),

FOREIGN KEY (supplier_id) REFERENCES Supplier(supplier_id)

);

```

The screenshot shows the MySQL Workbench interface. The main editor displays a series of SQL queries to create a database and tables. The left sidebar shows the 'SCHEMAS' tab with a search filter. The bottom panel shows the 'Output' tab with a table of execution results.

SQL Queries:

```

1 CREATE DATABASE JauntyCoffee;
2 USE JauntyCoffee;
3
4 CREATE TABLE Coffee_Shop (
5     shop_id INT PRIMARY KEY,
6     shop_name VARCHAR(50),
7     city VARCHAR(50),
8     state CHAR(2)
9 );
10
11 CREATE TABLE Supplier (
12     supplier_id INT PRIMARY KEY,
13     company_name VARCHAR(50),
14     country VARCHAR(30),
15     sales_contact_name VARCHAR(60),
16     email VARCHAR(50) NOT NULL
17 );
18
19 CREATE TABLE Employee (
20     employee_id INT PRIMARY KEY,
21     first_name VARCHAR(30),
22     last_name VARCHAR(30),
23     hire_date DATE,
24     job_title VARCHAR(30),
25     shop_id INT,
26     FOREIGN KEY (shop_id) REFERENCES Coffee_Shop(shop_id)
27 );
28
29 CREATE TABLE Coffee (
30     coffee_id INT PRIMARY KEY,
31     shop_id INT,
32     supplier_id INT,
33     coffee_name VARCHAR(30),
34     price_per_pound NUMERIC(5,2),
35     FOREIGN KEY (shop_id) REFERENCES Coffee_Shop(shop_id),
36     FOREIGN KEY (supplier_id) REFERENCES Supplier(supplier_id)
37 );

```

Execution Results:

#	Time	Action	Message	Duration / Fetch
1	21:55:29	CREATE DATABASE JauntyCoffee	1 row(s) affected	0.000 sec
2	21:55:29	USE JauntyCoffee	0 row(s) affected	0.000 sec
3	21:55:29	CREATE TABLE Coffee_Shop (shop_id INT PRIMARY KEY, shop_name V...	0 row(s) affected	0.000 sec
4	21:55:29	CREATE TABLE Supplier (supplier_id INT PRIMARY KEY, company_na...	0 row(s) affected	0.016 sec
5	21:55:29	CREATE TABLE Employee (employee_id INT PRIMARY KEY, first_name ...	0 row(s) affected	0.031 sec
6	21:55:29	CREATE TABLE Coffee (coffee_id INT PRIMARY KEY, shop_id INT, ...	0 row(s) affected	0.016 sec

B2a,B2b

INSERT INTO Coffee_Shop

VALUES

```
(1, 'Crave Coffee', 'Blacksburg', 'VA'),
(2, 'Coffeeistic', 'Charlotte', 'NC'),
(3, 'Coffeeorzo', 'Roanoke', 'VA');
```

INSERT INTO Supplier

VALUES

```
(1, 'Coffee.com', 'USA', 'Margo Barrow', 'margo@coffee.com'),
(2, 'Bestbeans.com', 'UK', 'Abby Mora', 'abby@bestbeans.com'),
(3, 'Worstbeans.net', 'Germany', 'Halle McClure', 'halle@worstbeans.net');
```

INSERT INTO Employee

VALUES

```
(1, 'Allana', 'Combs', '2021-11-05', 'Barista', 1),
(2, 'Keisha', 'Singleton', '2021-11-05', 'Barista', 2),
(3, 'Harleigh', 'Foley', '2021-06-02', 'Barista', 3);
```

INSERT INTO Coffee

VALUES

```
(1, 1, 1, 'Robusta', 19.3),
(2, 2, 2, 'Liberica', 24.99),
(3, 3, 3, 'Excelsa', 8.95);
```

MySQL Workbench

unconnected x Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

main B2 Insert Data x

Limit to 1000 rows

SCHEMAS

Filter objects

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

INSERT INTO Coffee_Shop

VALUES

(1, 'Crave Coffee', 'Blacksburg', 'VA'),

(2, 'Coffeeistic', 'Charlotte', 'NC'),

(3, 'Coffeeorzo', 'Roanoke', 'VA');

INSERT INTO Supplier

VALUES

(1, 'Coffee.com', 'USA', 'Margo Barrow', 'margo@coffee.com'),

(2, 'Bestbeans.com', 'UK', 'Abby Mora', 'abby@bestbeans.com'),

(3, 'Worstbeans.net', 'Germany', 'Halle McClure', 'halle@worstbeans.net');

INSERT INTO Employee

VALUES

(1, 'Allana', 'Combs', '2021-11-05', 'Barista', 1),

(2, 'Keisha', 'Singleton', '2021-11-05', 'Barista', 2),

(3, 'Harleigh', 'Foley', '2021-06-02', 'Barista', 3);

INSERT INTO Coffee

VALUES

(1, 1, 1, 'Robusta', 19.3),

(2, 2, 2, 'Liberica', 24.99),

(3, 3, 3, 'Excelsa', 8.95);

Administration Schemas

Information

No object selected

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	22:00:39	INSERT INTO Coffee_Shop VALUES (1,'Crave Coffee', 'Blacksburg', 'VA'), (2,'Coffeeis...	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.016 sec
2	22:00:39	INSERT INTO Supplier VALUES (1,'Coffee.com', 'USA', 'Margo Barrow', 'margo@coffe...	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec
3	22:00:39	INSERT INTO Employee VALUES (1,'Allana', 'Combs', '2021-11-05', 'Barista', 1), (2,'Kei...	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec
4	22:00:39	INSERT INTO Coffee VALUES (1, 1, 1, 'Robusta', 19.3), (2, 2, 2, 'Liberica', 24.99), (...	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec

Object Info

Session

B3a,B3b

CREATE VIEW employee_info AS

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

The screenshot shows the MySQL Workbench interface. The main editor window displays the following SQL code:

```
1 • CREATE VIEW employee_info AS  
2   SELECT employee_id, CONCAT(first_name, ' ', last_name) AS employee_full_name, hire_date , job_title, shop_id  
3   FROM Employee;
```

The left sidebar shows the 'SCHEMAS' tab with a search filter. The bottom status bar indicates 'No object selected'.

The 'Output' tab at the bottom shows the execution results:

#	Time	Action	Message	Duration / Fetch
1	22:02:59	CREATE VIEW employee_info AS SELECT employee_id, CONCAT(first_name, ' ', last_name) AS employee_full_name, hire_date , job_title, shop_id FROM Employee;	0 row(s) affected	0.000 sec

B4a,B4b

CREATE INDEX idx_coffee

ON Coffee(coffee_name);

The screenshot shows the MySQL Workbench interface. The top toolbar includes icons for file operations, database management, and execution. The left sidebar contains the 'SCHEMAS' panel with a search filter and the 'Administration' / 'Schemas' tab. The main editor window displays a SQL query in a tab titled 'B4 Create Index'. The query is:

```
1 CREATE INDEX idx_coffee
2 ON Coffee(coffee_name);
```

The bottom panel shows the 'Output' window with the 'Action Output' tab selected. It displays the execution results of the SQL command:

#	Time	Action	Message	Duration / Fetch
1	22:05:12	CREATE INDEX idx_coffee ON Coffee(coffee_name)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec

B5a,B5b

SELECT *

FROM Coffee_Shop

WHERE state = 'VA';

The screenshot shows the MySQL Workbench interface. The top toolbar includes icons for file operations, query execution, and navigation. The left sidebar shows the 'SCHEMAS' tab with a search filter. The main editor window displays the following SQL query:

```
1 SELECT *
2 FROM Coffee_Shop
3 WHERE state = 'VA';
```

Below the query editor, the 'Result Grid' is visible, showing the results of the query. The grid has four columns: shop_id, shop_name, city, and state. The results are as follows:

shop_id	shop_name	city	state
1	Crave Coffee	Blacksburg	VA
3	Coffeeorzo	Roanoke	VA

At the bottom of the interface, the 'Output' tab is active, showing the 'Action Output' for the query. The output table has four columns: #, Time, Action, and Message. The results are as follows:

#	Time	Action	Message
1	22:06:22	SELECT * FROM Coffee_Shop WHERE state = 'VA' LIMIT 0, 1000	2 row(s) returned

The bottom status bar shows 'Object Info' and 'Session' tabs.

B6a,B6b

SELECT Supplier.sales_contact_name AS 'Contact Name', Coffee_Shop.shop_name AS 'Shop Name', Coffee.coffee_name AS 'Coffee Name'

FROM Coffee

INNER JOIN Supplier

ON Coffee.supplier_id = Supplier.supplier_id

INNER JOIN Coffee_Shop

ON Coffee_Shop.shop_id = Coffee.shop_id;

The screenshot shows the MySQL Workbench interface. The main editor displays a SQL query that joins the Coffee, Supplier, and Coffee_Shop tables. The query is as follows:

```
1 SELECT Supplier.sales_contact_name AS 'Contact Name', Coffee_Shop.shop_name AS 'Shop Name', Coffee.coffee_name AS 'Coffee Name'
2 FROM Coffee
3 INNER JOIN Supplier
4 ON Coffee.supplier_id = Supplier.supplier_id
5 INNER JOIN Coffee_Shop
6 ON Coffee_Shop.shop_id = Coffee.shop_id;
```

Below the query editor, the 'Result Grid' tab is active, showing the results of the query. The results are displayed in a table with three columns: Contact Name, Shop Name, and Coffee Name. The data rows are:

Contact Name	Shop Name	Coffee Name
Margo Barrow	Crave Coffee	Robusta
Abby Mora	Coffeeistic	Liberica
Halle McClure	Coffeeorzo	Excelsa

At the bottom of the interface, the 'Output' tab is active, showing the execution details of the query. The output indicates that the query was executed successfully at 22:07:23, returning 3 rows.

Result 1 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
1	22:07:23	SELECT Supplier.sales_contact_name AS 'Contact Name', Coffee_Shop.shop_name...	3 row(s) returned	0.000 sec / 0.000 sec