Nora's Bagel Bin Database Blueprints

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

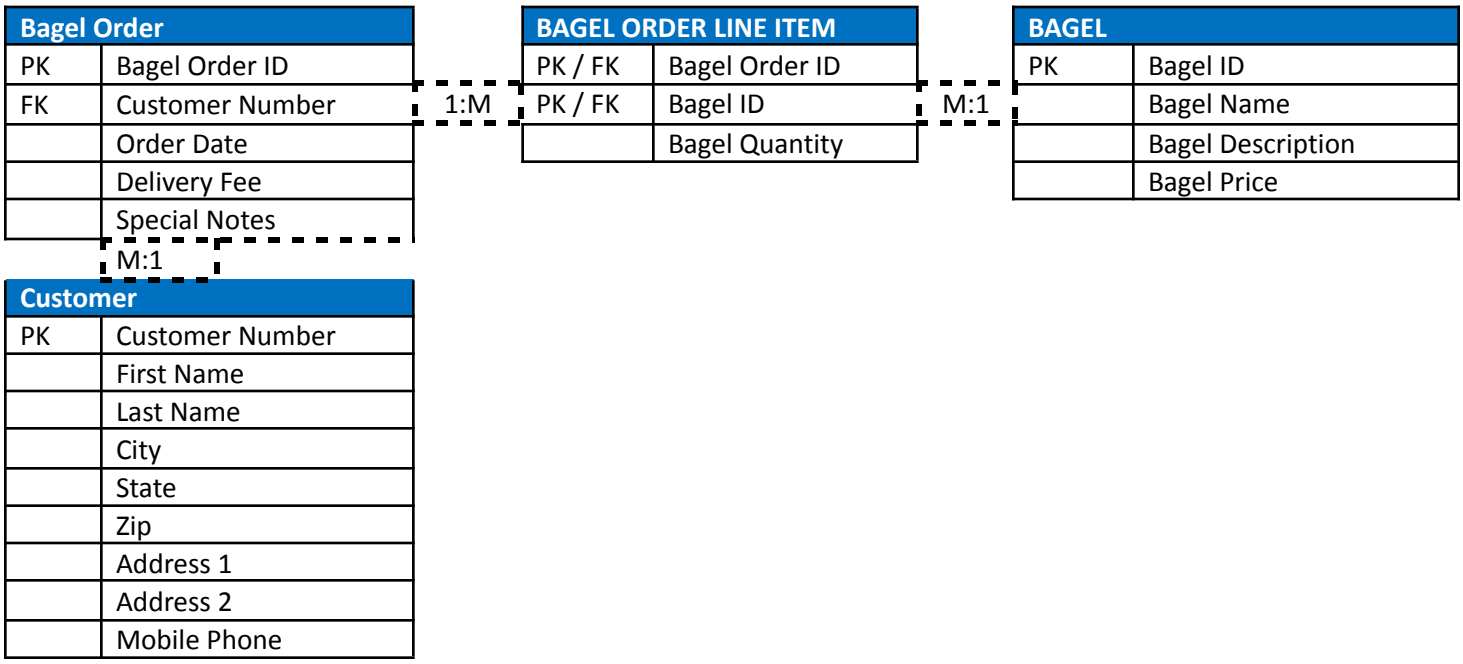
BAGEL	
PK	Bagel ID
	Bagel Name
	Bagel Description
	Bagel Price

Explanation: The original table was in 1NF. In order to transform the table into 2NF, the attributes were distributed so that those with only partial dependencies were placed in a separate table. Each table now has a unique primary key without partial dependencies.

The Bagel Order can refer to multiple Line Items, but each line item refers to at most 1 Bagel Order. Each Bagel can be included in many different Line Items, but each line item refers to 1 bagel.

Nora's Bagel Bin Database Blueprints

Third Normal Form (3NF)

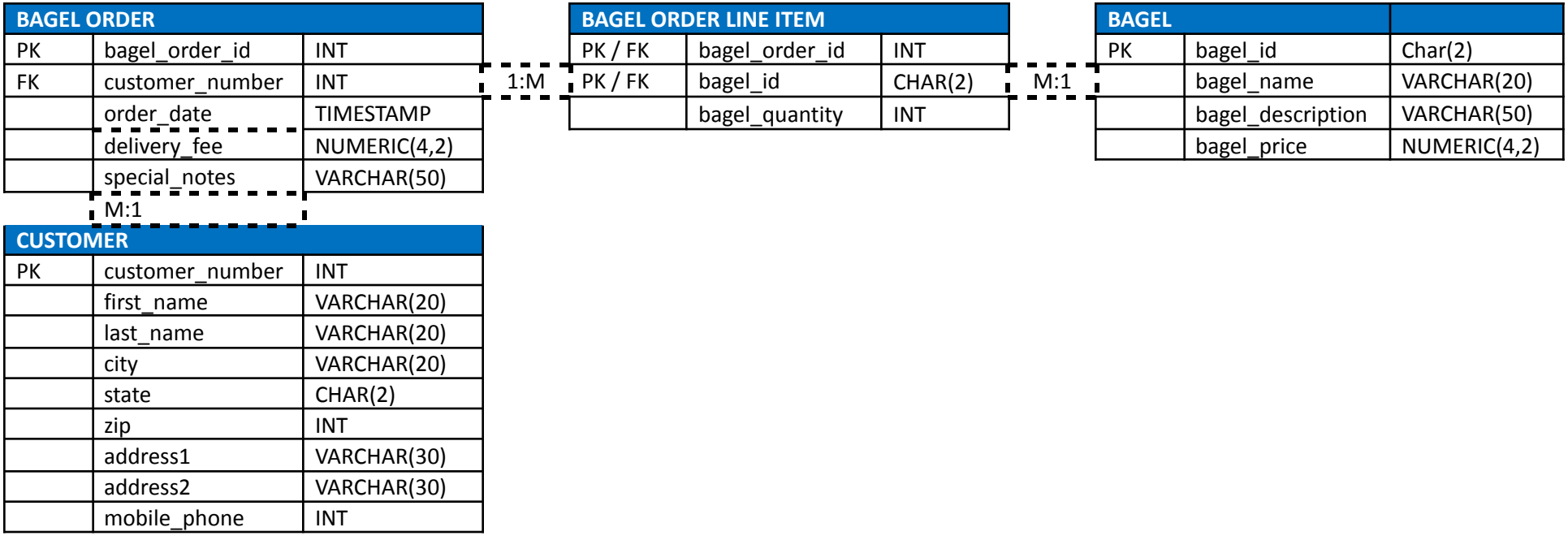


Explanation: In order to transform the table from 2NF to 3NF, the attributes were placed in new tables so that there were no transitive dependencies as well as no repeating data. Any transitive dependencies were moved to a new table.

The Bagel Order can refer to multiple Line Items, but each line item refers to at most 1 Bagel Order. Each Bagel can be included in many different Line Items, but each line item refers to 1 bagel. Each customer can have multiple orders, but each order can have at most one customer.

Nora's Bagel Bin Database Blueprints

Final Physical Database Model



B1

```
1
2  USE COFFEE;
3
4  Create table COFFEE_SHOP(
5      shop_id          INTEGER,
6      shop_name        VARCHAR(50),
7      city             VARCHAR(50),
8      state            CHAR(2),
9      Primary Key (shop_id)
10 );
11
12 Create table EMPLOYEE(
13     employee_id          INT,
14     first_name       VARCHAR(30),
15     last_name        VARCHAR(30),
16     hire_date        DATE,
17     job_title        VARCHAR(30),
18     shop_id          INT,
19     Foreign Key (shop_id) References COFFEE_SHOP(shop_id),
20     Primary Key (employee_id)
21 );
22
23 Create table SUPPLIER(
24     supplier_id      INT,
25     company_name         VARCHAR(50),
26     country          VARCHAR(30),
27     sales_contact_name   VARCHAR(60),
28     email            VARCHAR(50) NOT NULL,
29     Primary Key (supplier_id)
30 );
31
32 Create table COFFEE(
33     coffee_id        INT,
34     shop_id          INT,
35     supplier_id      INT,
36     coffee_name      VARCHAR(30),
37     price_per_pound      NUMERIC(5,2),
38     Primary Key (coffee_id),
39     Foreign Key (shop_id) References COFFEE_SHOP(shop_id),
40     Foreign Key (supplier_id) References SUPPLIER(supplier_id)
41 );
```

Index: PRIMARY

Definition:

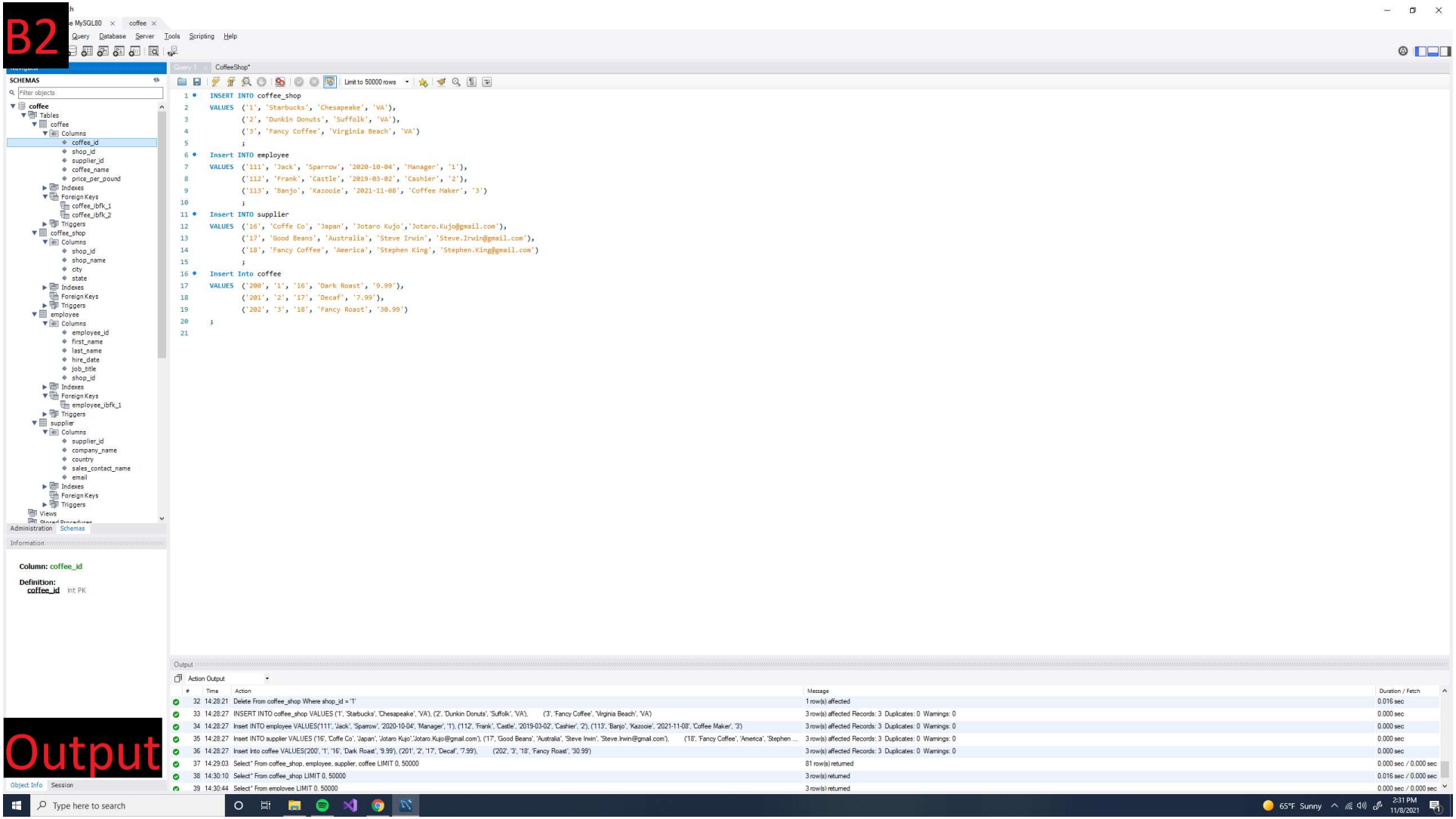
Type	BTREE
Unique	Yes
Visible	Yes
Columns	supplier_id

Ouput

#	Time	Action	Message	Duration / Fetch
22	13:58:15	DROP TABLE `coffee`.`supplier`	0 row(s) affected	0.016 sec
23	13:58:27	DROP TABLE `coffee`.`coffee_shop`	0 row(s) affected	0.016 sec
24	13:58:36	USE COFFEE	0 row(s) affected	0.000 sec
25	13:58:36	Create table COFFEE_SHOP(shop_id INTEGER, shop_name VARCHAR(50), city VARCHAR(50), state CHAR(2), Primary Key (shop_id))	0 row(s) affected	0.015 sec
26	13:58:36	Create table EMPLOYEE(employee_id INT, 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_...	0 row(s) affected	0.032 sec
27	13:58:36	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))	0 row(s) affected	0.015 sec
28	13:58:36	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_i...	0 row(s) affected	0.032 sec

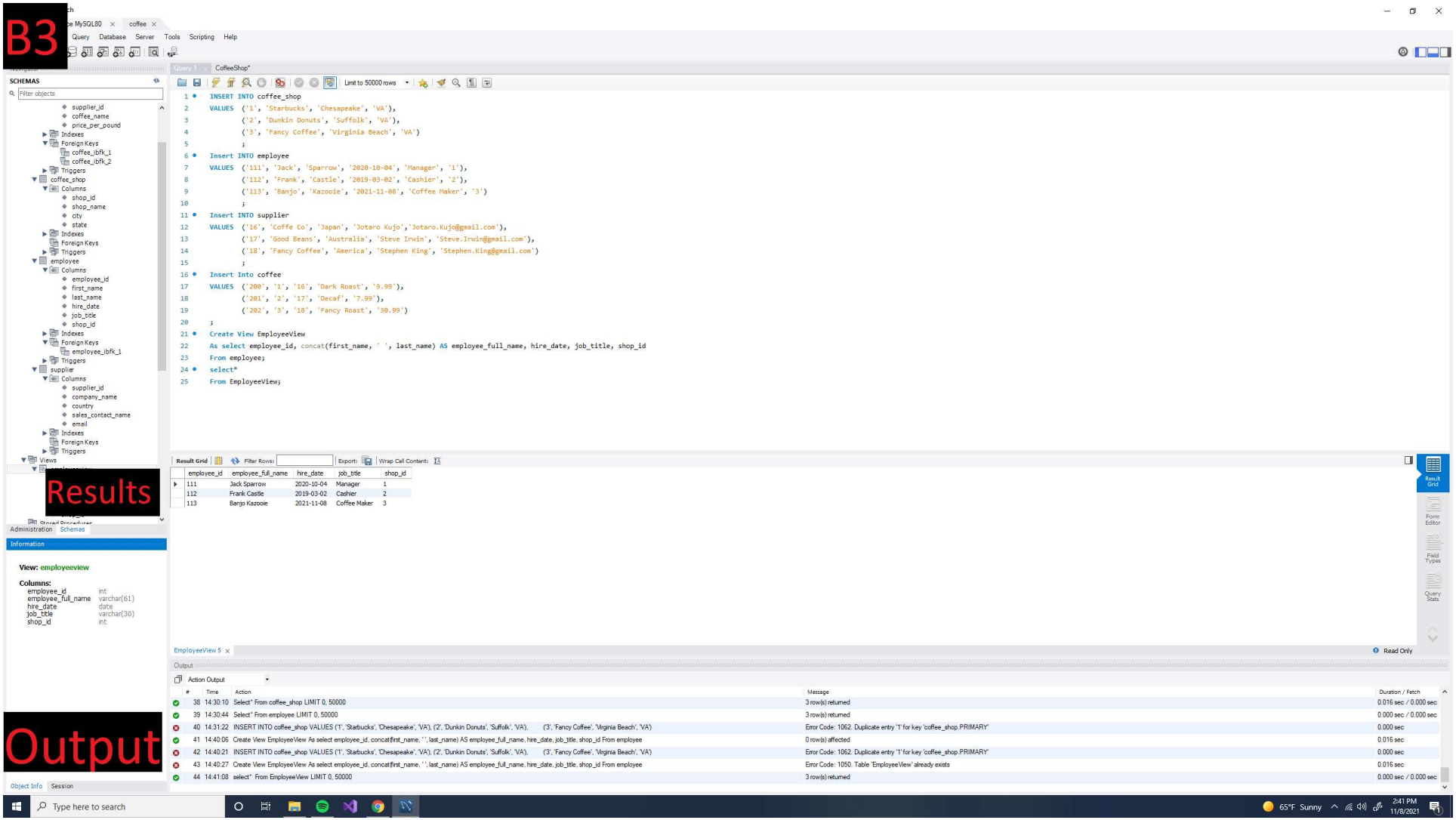
Type here to search
64°F Sunny
2:00 PM
11/8/2021

B2

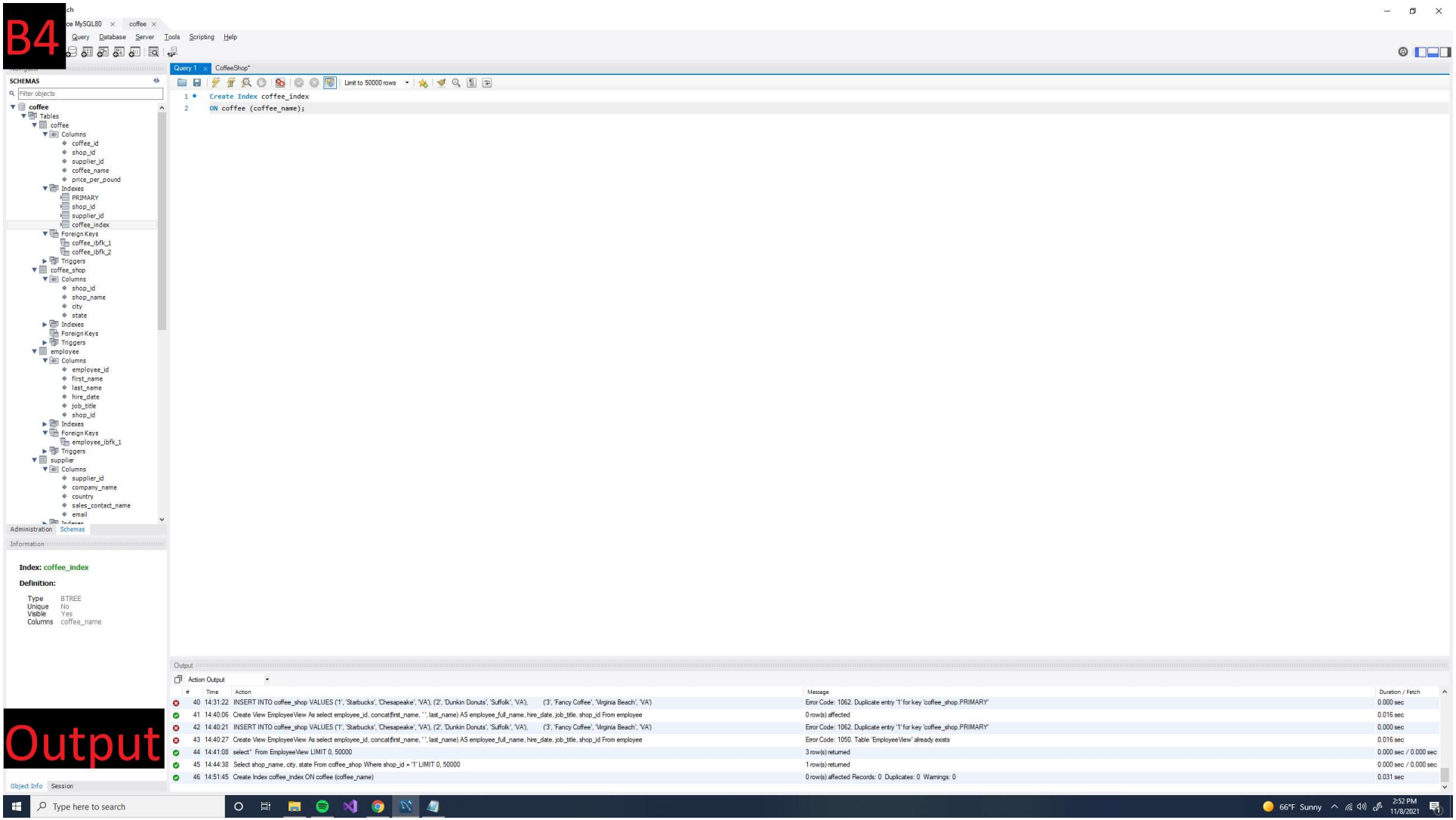

Query Database Server Tools Scripting Help
SCHEMAS
Filter objects
coffee
Tables
coffee
Columns
coffee_id
shop_id
supplier_id
coffee_name
price_per_pound
Indexes
Foreign Keys
coffee_ibfk_1
coffee_ibfk_2
Triggers
coffee_shop
Columns
shop_id
shop_name
city
state
Indexes
Foreign Keys
Triggers
employee
Columns
employee_id
first_name
last_name
hire_date
job_title
shop_id
Indexes
Foreign Keys
employee_ibfk_1
Triggers
supplier
Columns
supplier_id
company_name
country
sales_contact_name
email
Indexes
Foreign Keys
Triggers
Views
Administration Schemas
Information
Column: coffee_id
Definition:
coffee_id int PK
Object Info Session
CoffeeShop*
Limit to 50000 rows
1 • INSERT INTO coffee_shop
2 VALUES ('1', 'Starbucks', 'Chesapeake', 'VA'),
3 ('2', 'Dunkin Donuts', 'Suffolk', 'VA'),
4 ('3', 'Fancy Coffee', 'Virginia Beach', 'VA')
5 ;
6 • Insert INTO employee
7 VALUES ('111', 'Jack', 'Sparrow', '2020-10-04', 'Manager', '1'),
8 ('112', 'Frank', 'Castle', '2019-03-02', 'Cashier', '2'),
9 ('113', 'Banjo', 'Kazooie', '2021-11-08', 'Coffee Maker', '3')
10 ;
11 • Insert INTO supplier
12 VALUES ('16', 'Coffe Co', 'Japan', 'Jotaro Kujo','Jotaro.Kujo@gmail.com'),
13 ('17', 'Good Beans', 'Australia', 'Steve Irwin', 'Steve.Irwin@gmail.com'),
14 ('18', 'Fancy Coffee', 'America', 'Stephen King', 'Stephen.King@gmail.com')
15 ;
16 • Insert Into coffee
17 VALUES ('200', '1', '16', 'Dark Roast', '9.99'),
18 ('201', '2', '17', 'Decaf', '7.99'),
19 ('202', '3', '18', 'Fancy Roast', '30.99')
20 ;
21
Output
Action Output
Time Action Message Duration / Fetch
32 14:28:21 Delete From coffee_shop Where shop_id = '1' 1 row(s) affected 0.016 sec
33 14:28:27 INSERT INTO coffee_shop VALUES ('1', 'Starbucks', 'Chesapeake', 'VA'), ('2', 'Dunkin Donuts', 'Suffolk', 'VA'), ('3', 'Fancy Coffee', 'Virginia Beach', 'VA') 3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0 0.000 sec
34 14:28:27 Insert INTO employee VALUES('111', 'Jack', 'Sparrow', '2020-10-04', 'Manager', '1'), ('112', 'Frank', 'Castle', '2019-03-02', 'Cashier', '2'), ('113', 'Banjo', 'Kazooie', '2021-11-08', 'Coffee Maker', '3') 3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0 0.000 sec
35 14:28:27 Insert INTO supplier VALUES ('16', 'Coffe Co', 'Japan', 'Jotaro Kujo','Jotaro.Kujo@gmail.com'), ('17', 'Good Beans', 'Australia', 'Steve Irwin', 'Steve.Irwin@gmail.com'), ('18', 'Fancy Coffee', 'America', 'Stephen ... 3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0 0.000 sec
36 14:28:27 Insert Into coffee VALUES('200', '1', '16', 'Dark Roast', '9.99'), ('201', '2', '17', 'Decaf', '7.99'), ('202', '3', '18', 'Fancy Roast', '30.99') 3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0 0.000 sec
37 14:29:03 Select * From coffee_shop, employee, supplier, coffee LIMIT 0, 50000 81 row(s) returned 0.000 sec / 0.000 sec
38 14:30:10 Select * From coffee_shop LIMIT 0, 50000 3 row(s) returned 0.016 sec / 0.000 sec
39 14:30:44 Select * From employee LIMIT 0, 50000 3 row(s) returned 0.000 sec / 0.000 sec

Output

Type here to search
65°F Sunny
2:31 PM
11/8/2021


B3
Results
Output

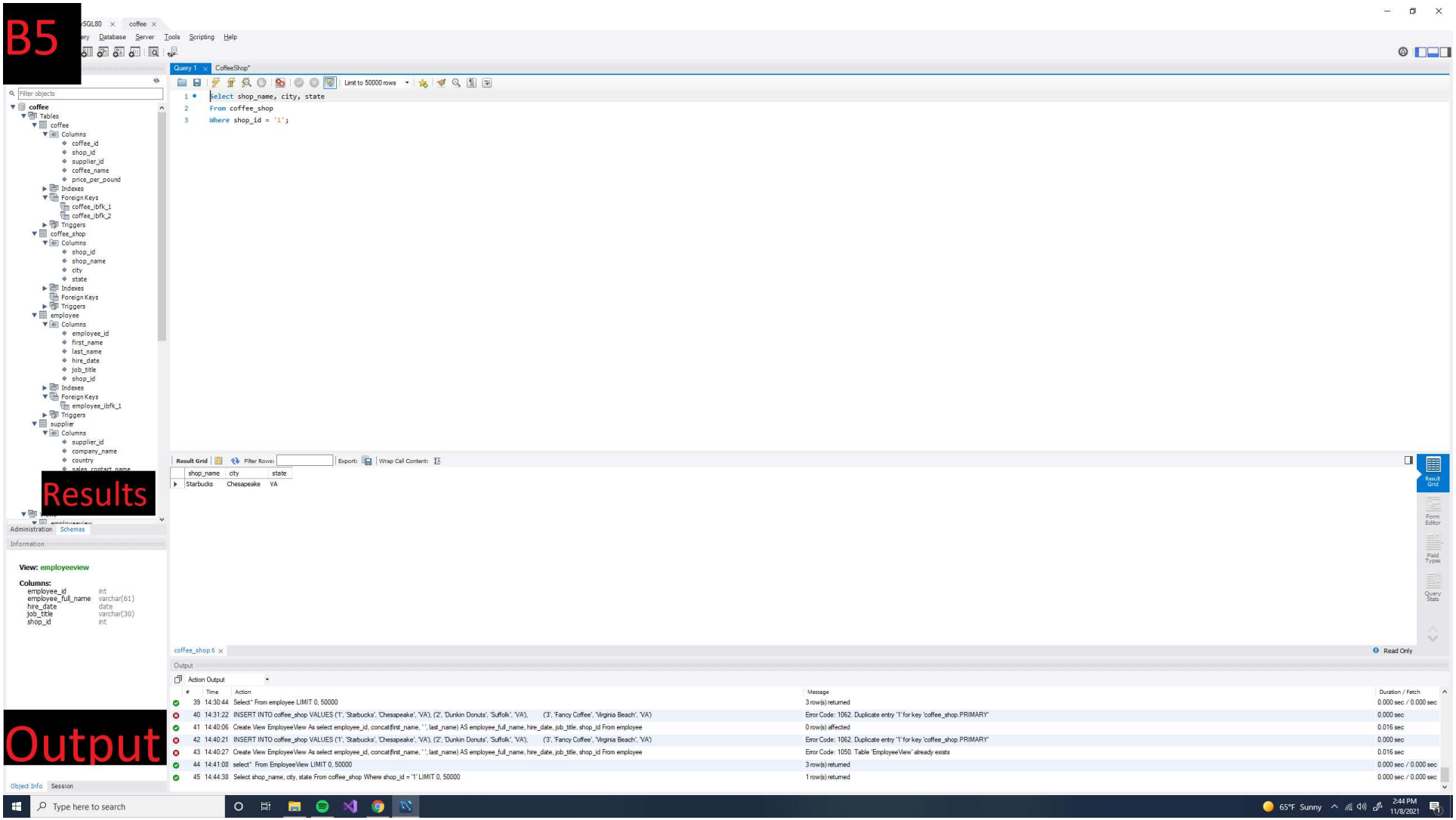
B4


Query 1
CoffeeShop*
Limit to 50000 rows
Create Index coffee_index
ON coffee (coffee_name);
SCHEMAS
coffee
Tables
coffee
Columns
coffee_id
shop_id
supplier_id
coffee_name
price_per_pound
Indexes
PRIMARY
shop_id
supplier_id
coffee_index
Foreign Keys
coffee_ibfk_1
coffee_ibfk_2
Triggers
coffee_shop
Columns
shop_id
shop_name
city
state
Indexes
Foreign Keys
Triggers
employee
Columns
employee_id
first_name
last_name
hire_date
job_title
shop_id
Indexes
Foreign Keys
employee_ibfk_1
Triggers
supplier
Columns
supplier_id
company_name
country
sales_contact_name
email
Administration
Schemas
Information
Index: coffee_index
Definition:
Type BTREE
Unique No
Visible Yes
Columns coffee_name
Output
Action Output
Time Action Message Duration / Fetch
40 14:31:22 INSERT INTO coffee_shop VALUES ('1', 'Starbucks', 'Chesapeake', 'VA'), ('2', 'Dunkin Donuts', 'Suffolk', 'VA'), ('3', 'Fancy Coffee', 'Virginia Beach', 'VA') Error Code: 1062. Duplicate entry '1' for key 'coffee_shop.PRIMARY' 0.000 sec
41 14:40:06 Create View EmployeeView 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 0.016 sec
42 14:40:21 INSERT INTO coffee_shop VALUES ('1', 'Starbucks', 'Chesapeake', 'VA'), ('2', 'Dunkin Donuts', 'Suffolk', 'VA'), ('3', 'Fancy Coffee', 'Virginia Beach', 'VA') Error Code: 1062. Duplicate entry '1' for key 'coffee_shop.PRIMARY' 0.000 sec
43 14:40:27 Create View EmployeeView As select employee_id, concat(first_name, ' ', last_name) AS employee_full_name, hire_date, job_title, shop_id From employee Error Code: 1050. Table 'EmployeeView' already exists 0.016 sec
44 14:41:08 select* From EmployeeView LIMIT 0, 50000 3 row(s) returned 0.000 sec / 0.000 sec
45 14:44:38 Select shop_name, city, state From coffee_shop Where shop_id = '1' LIMIT 0, 50000 1 row(s) returned 0.000 sec / 0.000 sec
46 14:51:45 Create Index coffee_index ON coffee (coffee_name) 0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0 0.031 sec
Object Info
Session

Output

Type here to search
66°F Sunny
2:52 PM
11/8/2021

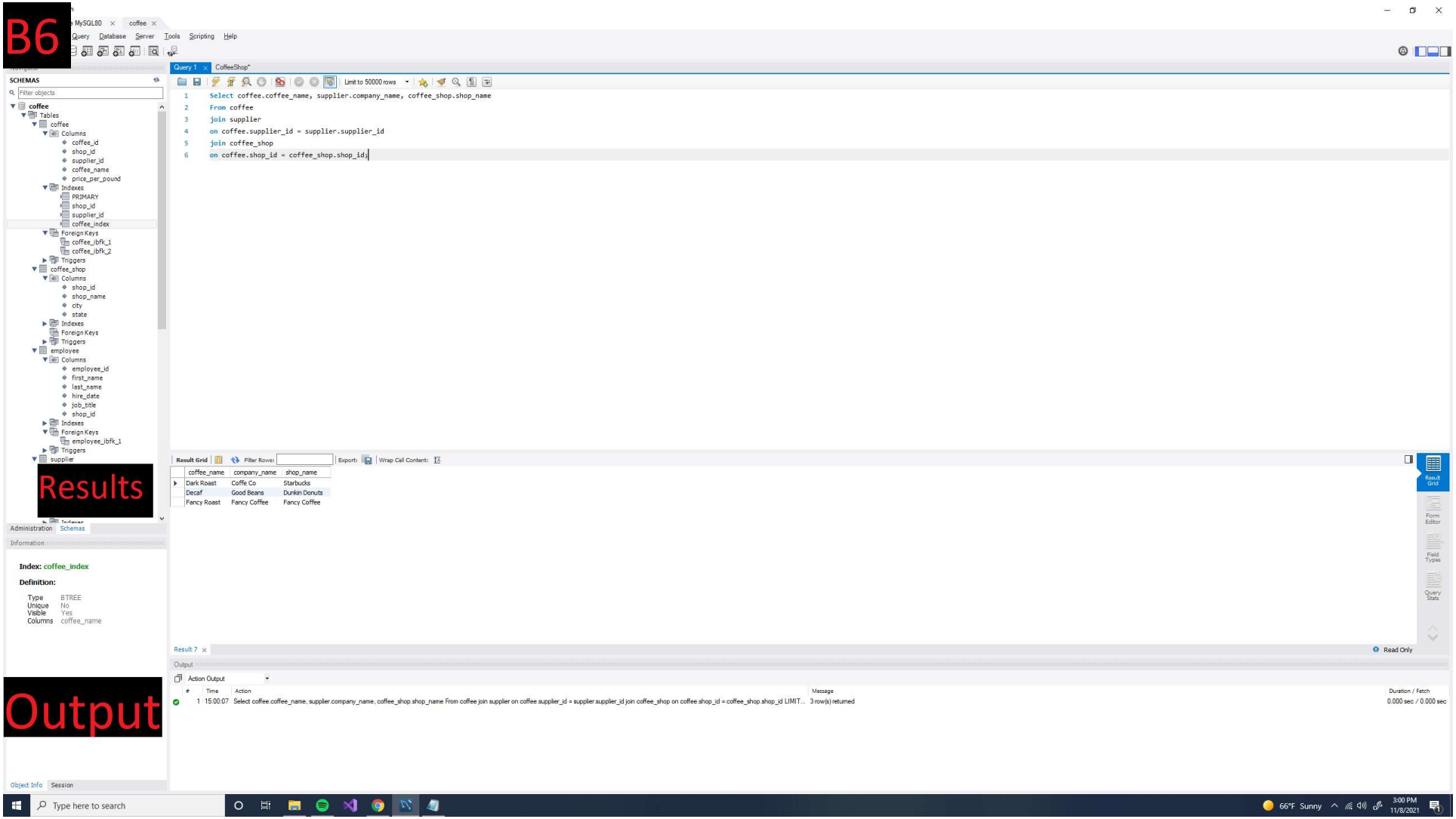
B5



Results

Output

B6


MySQL80
coffee
Query Database Server Tools Scripting Help
SCHEMAS
Filter objects
coffee
Tables
coffee
Columns
coffee_id
shop_id
supplier_id
coffee_name
price_per_pound
Indexes
PRIMARY
shop_id
supplier_id
coffee_index
Foreign Keys
coffee_ibfk_1
coffee_ibfk_2
Triggers
coffee_shop
Columns
shop_id
shop_name
city
state
Indexes
Foreign Keys
Triggers
employee
Columns
employee_id
first_name
last_name
hire_date
job_title
shop_id
Indexes
Foreign Keys
employee_ibfk_1
Triggers
supplier
Results
Administration Schemas
Information
Index: coffee_index
Definition:
Type BTREE
Unique No
Visible Yes
Columns coffee_name
Output
Object Info Session
Query 1
CoffeeShop*
Limit to 50000 rows
1 Select coffee.coffee_name, supplier.company_name, coffee_shop.shop_name
2 From coffee
3 join supplier
4 on coffee.supplier_id = supplier.supplier_id
5 join coffee_shop
6 on coffee.shop_id = coffee_shop.shop_id;
Result Grid
Filter Rows:
Export:
Wrap Cell Content:
coffee_name company_name shop_name
Dark Roast Coffe Co Starbucks
Decaf Good Beans Dunkin Donuts
Fancy Roast Fancy Coffee Fancy Coffee
Result 7
Read Only
Output
Action Output
Time Action Message Duration / Fetch
1 15:00:07 Select coffee.coffee_name, supplier.company_name, coffee_shop.shop_name From coffee join supplier on coffee.supplier_id = supplier.supplier_id join coffee_shop on coffee.shop_id = coffee_shop.shop_id LIMIT... 3 row(s) returned 0.000 sec / 0.000 sec
Output
Type here to search
66°F Sunny
3:00 PM
11/8/2021