Student Name

Course Title

Assignment Name

Date

Normalization And Database

PART A.

1. a. The attributes from the 1NF table have been assigned to the correct 2NF tables as follows:

Table 1: Bagel_Order

Order_Number (PK)

Customer_Name

Order_Date

Table 2: Bagel_Order_Details

Order_Number (FK)

Bagel_Type

Quantity

b. The relationship between the two pairs of 2NF tables is one-to-many (1:M).

c. The attributes were assigned to the 2NF tables based on the fact that the attributes Customer_Name and Order_Date need to be associated with each order and the attributes Bagel_Type and Quantity need to be associated with each bagel type and quantity ordered. The cardinality of the relationships between the 2NF tables was determined by identifying the fact that each order can have multiple bagel types and quantities associated with it, but each bagel type and quantity can only be associated with one order.

2. a. The attributes from the 2NF "Bagel Order" table have been assigned to the new 3NF tables as follows:

Table 1: Customer

Customer_ID (PK)

Customer_Name

Table 2: Order

Order_ID (PK)

Order_Date

Customer_ID (FK)

Table 3: Order_Details

Order_ID (FK)

Bagel_Type

Quantity

b. The 3NF tables have been named as follows: Customer, Order, and Order_Details.

c. The primary key for the Order table is Order_ID and the foreign key for the Order table is Customer_ID, which is linked to the primary key of the Customer table.

d. The relationships between the 3NF tables are as follows:

Customer: one-to-many (1:M) with Order

Order: one-to-many (1:M) with Order_Details

e. The attributes were assigned to the 3NF tables based on the fact that the attributes Customer_Name and Order_Date need to be associated with the customer and the order, respectively, and the attributes Bagel_Type and Quantity need to be associated with each bagel type and quantity ordered. The cardinality of the relationships between the 3NF tables was determined by identifying the fact that each customer can have multiple orders, each order can have multiple bagel types and quantities associated with it, but each bagel type and quantity can only be associated with one order.

3. a. The table names and cardinality information from the 3NF diagram have been copied into the “Final Physical Database Model” and the attributes have been renamed as follows:

Table 1: Customer

Customer_ID (PK)

Customer_Name

Table 2: Order

Order_ID (PK)

Order_Date

Customer_ID (FK)

Table 3: Order_Details

Order_ID (FK)

Bagel_Type

Quantity

b. The data types assigned to each attribute in the 3NF tables are as follows:

Customer:

Customer_ID: INTEGER

Customer_Name: VARCHAR()

Order:

Order_ID: INTEGER

Order_Date: TIMESTAMP

Customer_ID: INTEGER

Order_Details:

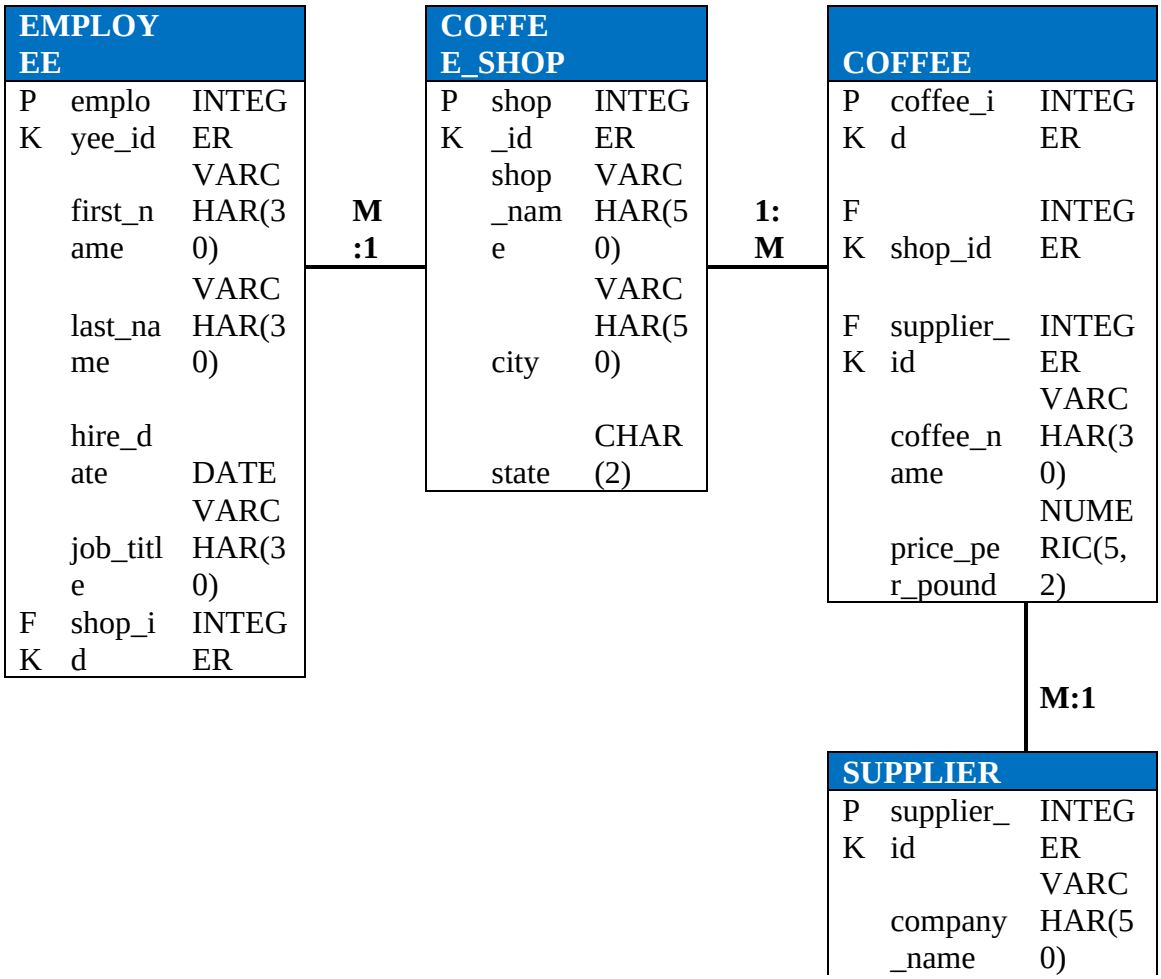
Order_ID: INTEGER

Bagel_Type: CHAR()

Quantity: NUMERIC()

PART B.

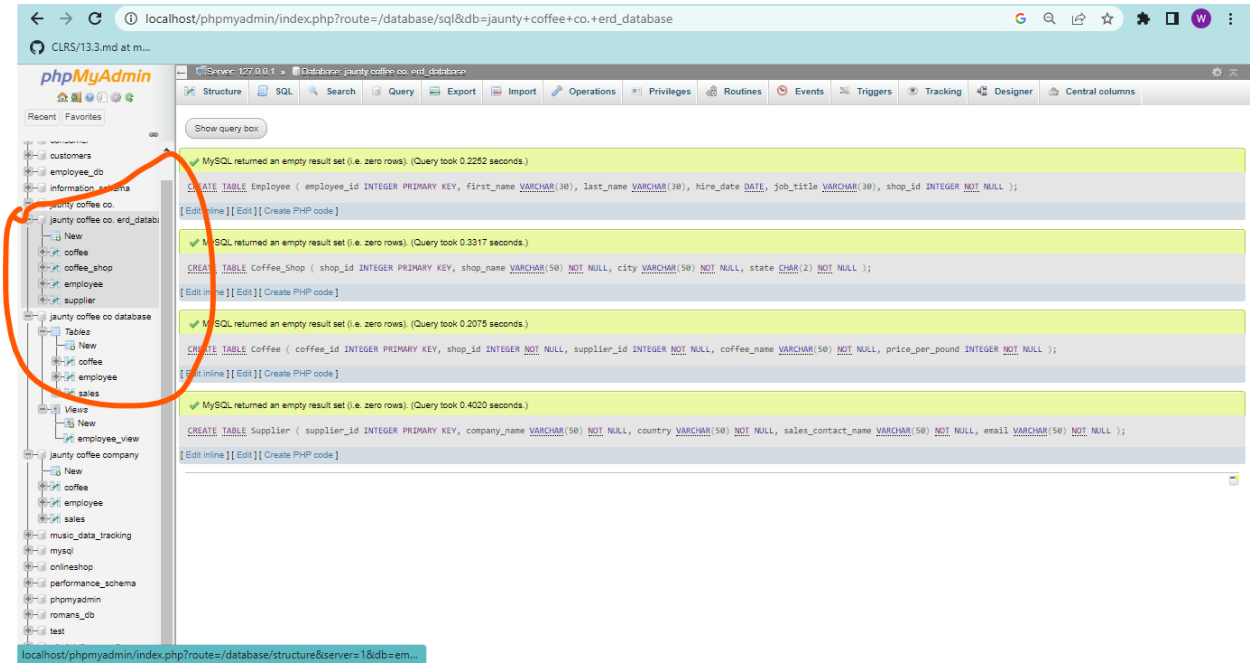
C170 Performance Assessment
Jaunty Coffee Co.
ERD



country	VARCHAR(30)
sales_contact_name	VARCHAR(60)
email	VARCHAR(50), NOT NULL

Creating the database

DB NAME: **jaunty coffee co. erd_database**

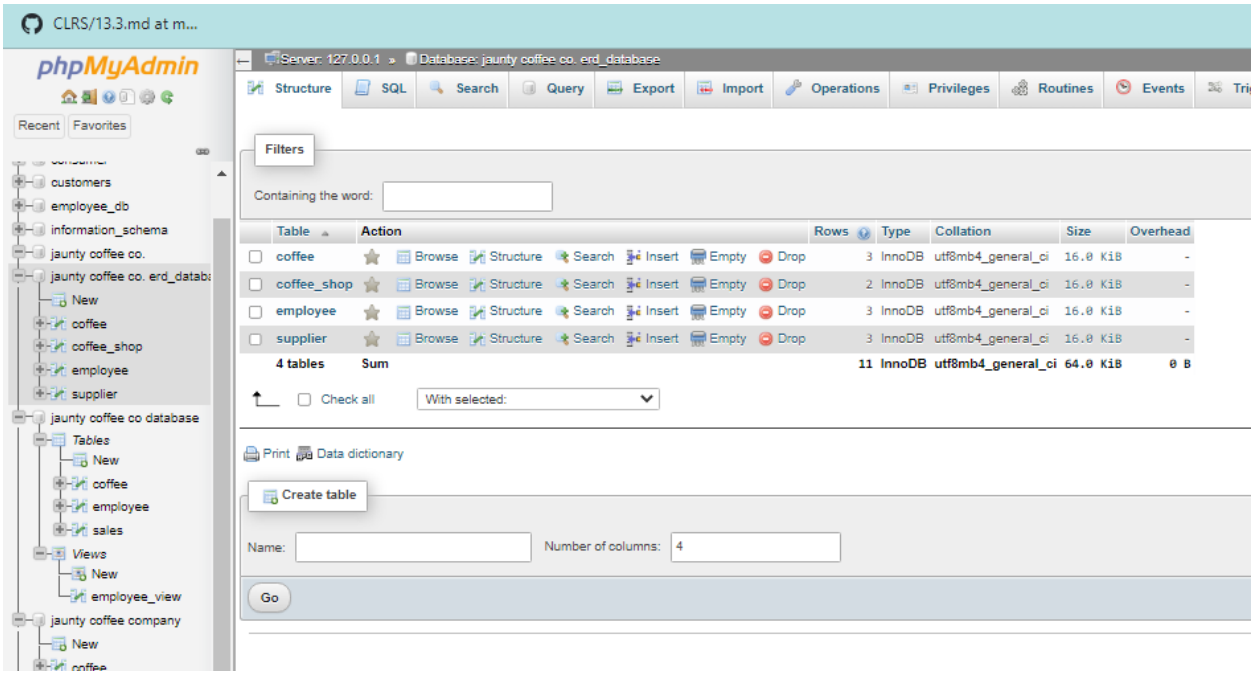


Task 1: Develop SQL code to create each table as specified in the attached "Jaunty Coffee Co. ERD" by doing the following:

a. Provide the SQL code you wrote to create all the tables.

```
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 NOT NULL
);

CREATE TABLE Coffee_Shop
(
   shop_id INTEGER PRIMARY KEY,
   shop_name VARCHAR(50) NOT NULL,
   city VARCHAR(50) NOT NULL,
   state CHAR(2) NOT NULL
);

CREATE TABLE Coffee
(
   coffee_id INTEGER PRIMARY KEY,
   shop_id INTEGER NOT NULL,
   supplier_id INTEGER NOT NULL,
   coffee_name VARCHAR(50) NOT NULL,
   price_per_pound INTEGER NOT NULL

);

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

b. Demonstrate that you tested your code by providing a screenshot showing your SQL commands and the database server's response.



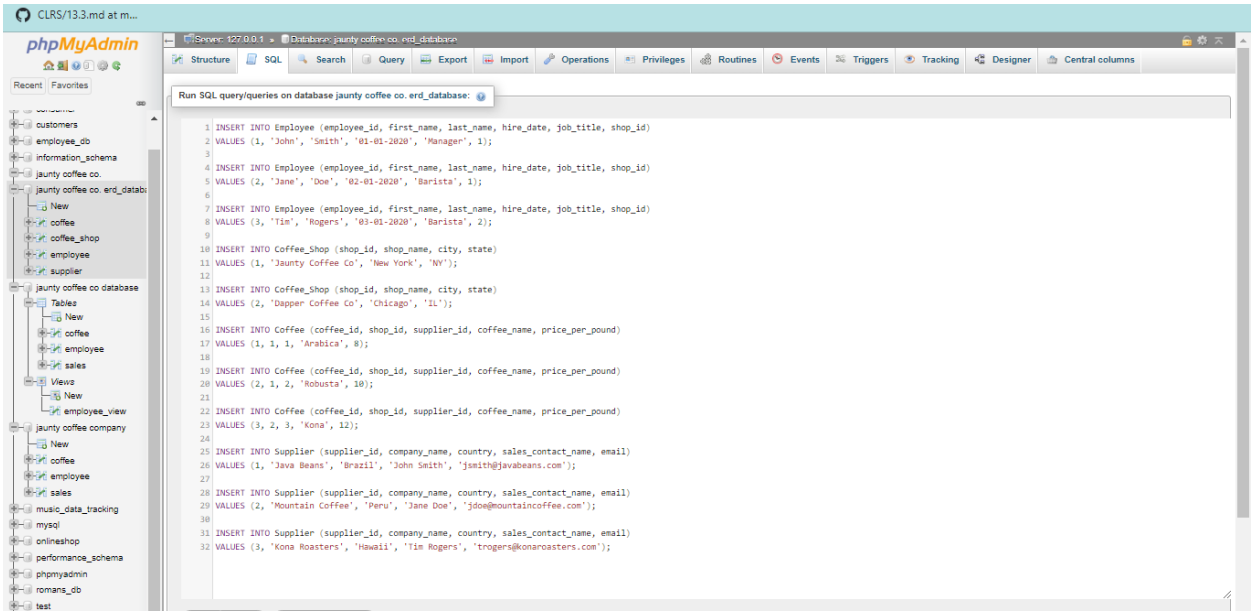
Task 2: Develop SQL code to populate each table in the database design document by doing the following:

Note: This data is not provided. You will be fabricating the data for this step.

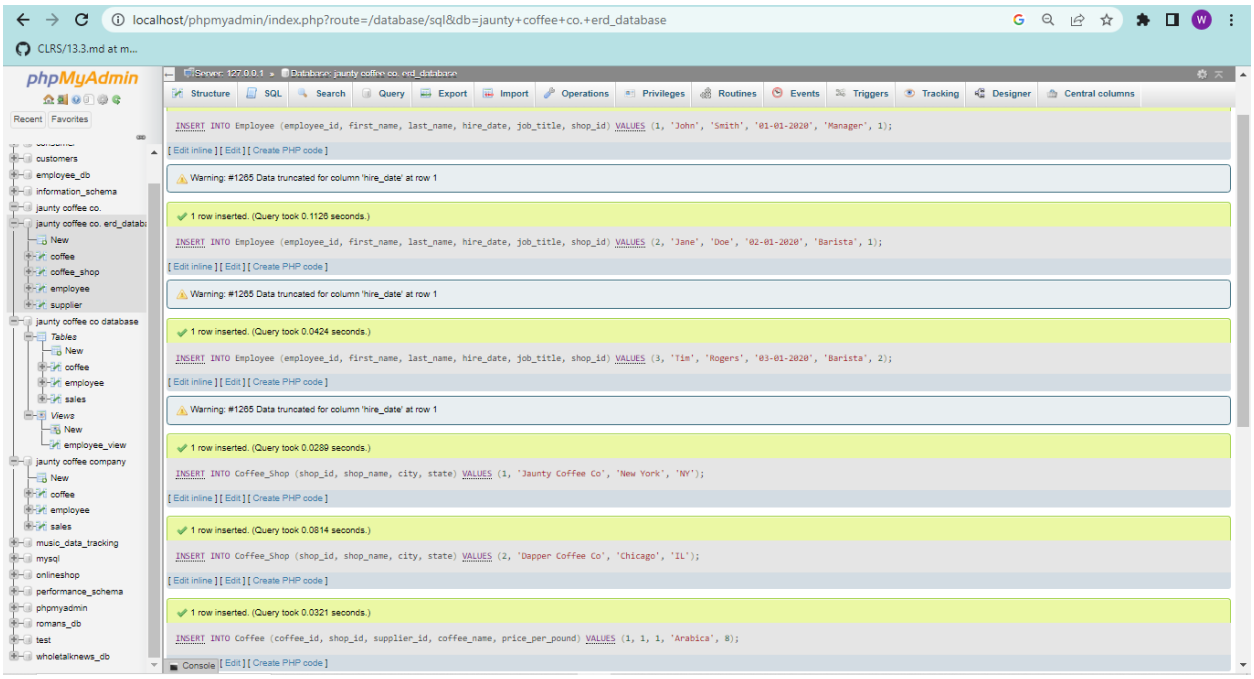
a. Provide the SQL code you wrote to populate the tables with at least three rows of data in each table.

```
INSERT INTO Employee (employee_id, first_name, last_name, hire_date, job_title, shop_id)
VALUES (1, 'John', 'Smith', '01-01-2020', 'Manager', 1);

INSERT INTO Employee (employee_id, first_name, last_name, hire_date, job_title, shop_id)
VALUES (2, 'Jane', 'Doe', '02-01-2020', 'Barista', 1);

INSERT INTO Employee (employee_id, first_name, last_name, hire_date, job_title, shop_id)
VALUES (3, 'Tim', 'Rogers', '03-01-2020', 'Barista', 2);
```

```
INSERT INTO Coffee_Shop (shop_id, shop_name, city, state)
VALUES (1, 'Jaunty Coffee Co', 'New York', 'NY');

INSERT INTO Coffee_Shop (shop_id, shop_name, city, state)
VALUES (2, 'Dapper Coffee Co', 'Chicago', 'IL');

INSERT INTO Coffee (coffee_id, shop_id, supplier_id, coffee_name, price_per_pound)
VALUES (1, 1, 1, 'Arabica', 8);

INSERT INTO Coffee (coffee_id, shop_id, supplier_id, coffee_name, price_per_pound)
VALUES (2, 1, 2, 'Robusta', 10);

INSERT INTO Coffee (coffee_id, shop_id, supplier_id, coffee_name, price_per_pound)
VALUES (3, 2, 3, 'Kona', 12);

INSERT INTO Supplier (supplier_id, company_name, country, sales_contact_name,
email)
VALUES (1, 'Java Beans', 'Brazil', 'John Smith', 'jsmith@javabeans.com');

INSERT INTO Supplier (supplier_id, company_name, country, sales_contact_name,
email)
VALUES (2, 'Mountain Coffee', 'Peru', 'Jane Doe', 'jdoe@mountaincoffee.com');

INSERT INTO Supplier (supplier_id, company_name, country, sales_contact_name,
email)
VALUES (3, 'Kona Roasters', 'Hawaii', 'Tim Rogers', 'trogers@konaroasters.com');
```



b. Demonstrate that you tested your code by providing a screenshot showing your SQL commands and the database server's response.

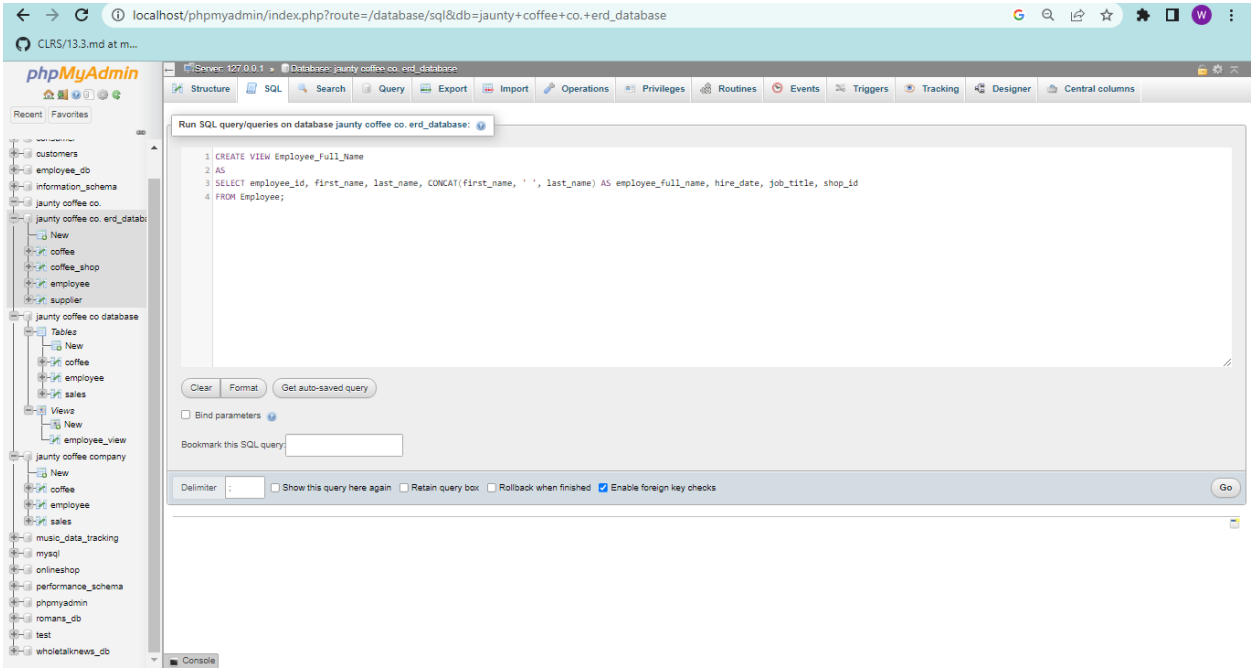


Task 3: Develop SQL code to create a view by doing the following:

a. Provide the SQL code you wrote to create your view. The view should show all of the information from the "Employee" table but concatenate each employee's first

and last name, formatted with a space between the first and last name, into a new attribute called employee_full_name.

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



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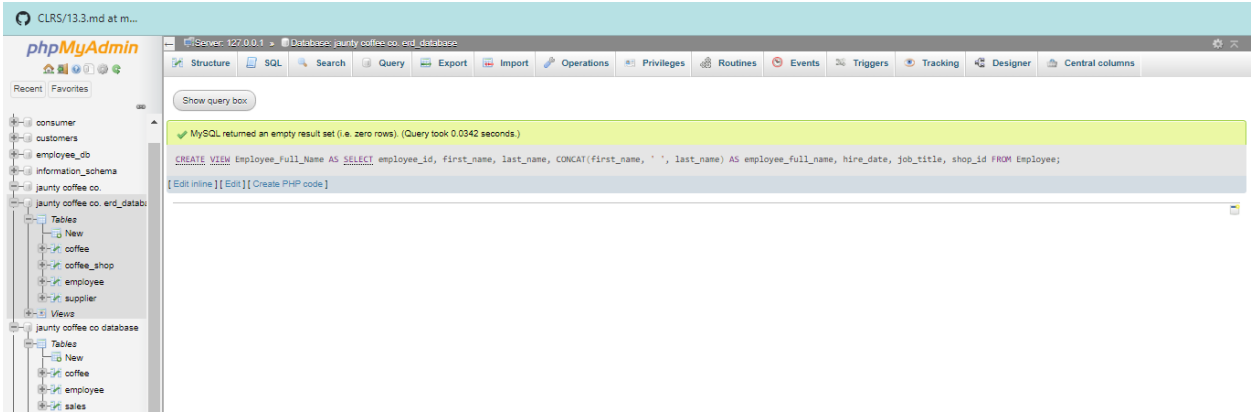
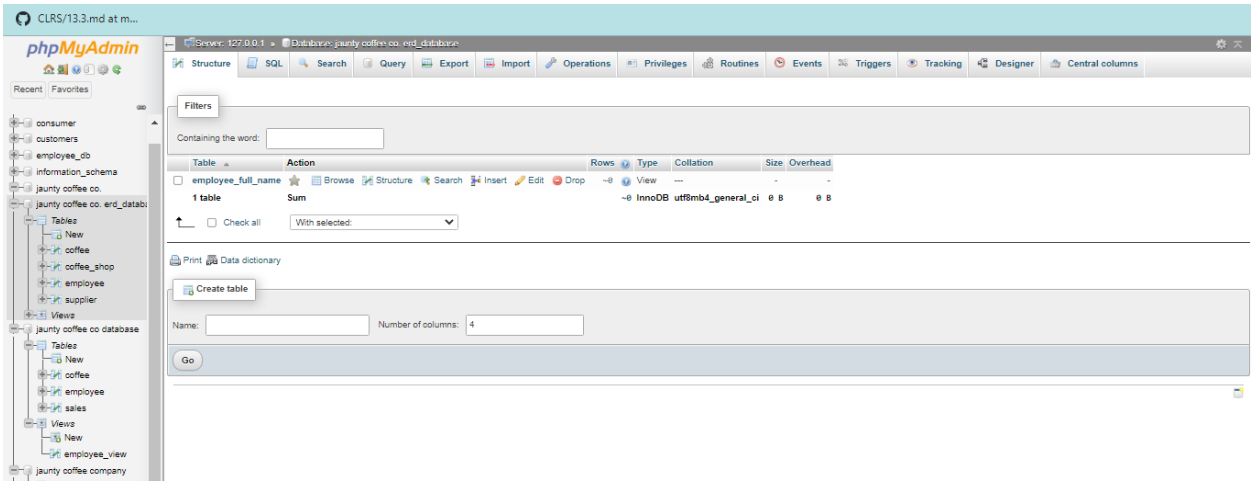
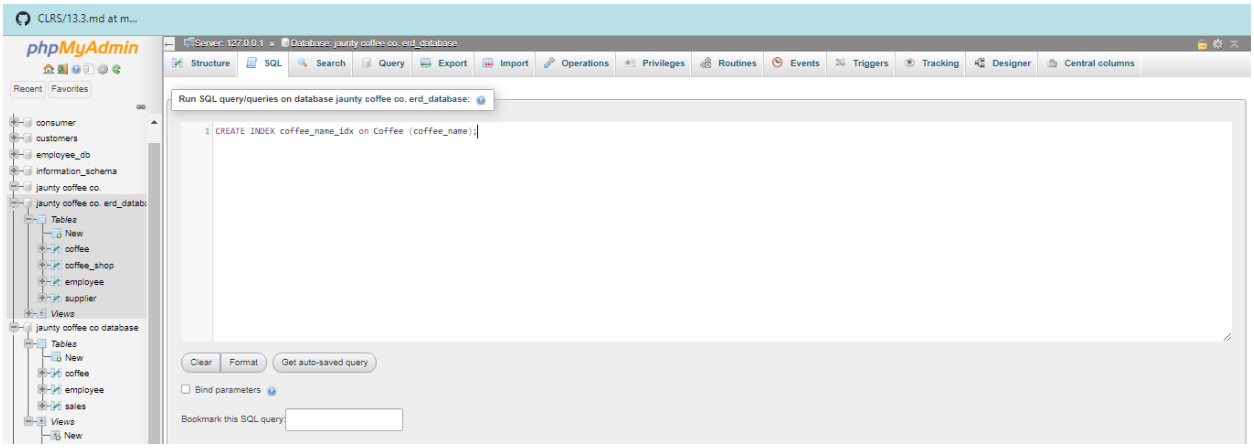




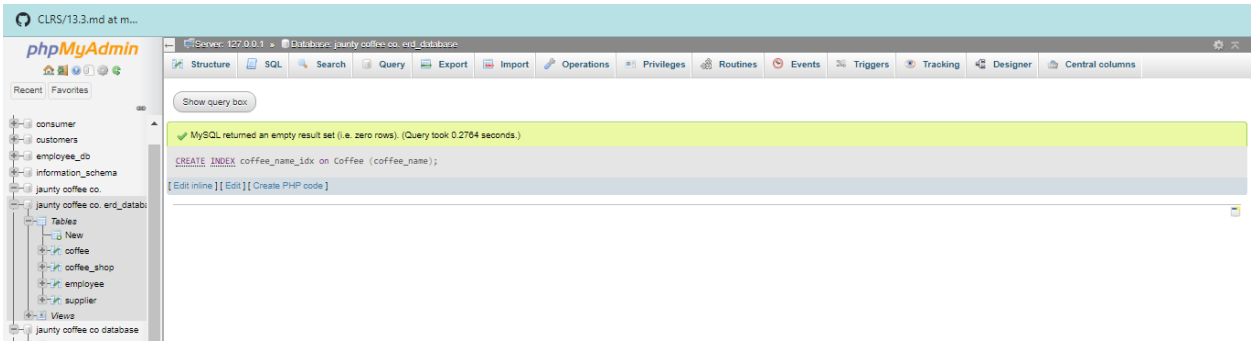
Task 4: Develop SQL code to create an index on the coffee_name field by doing the following:

a. Provide the SQL code you wrote to create your index on the coffee_name field from the "Coffee" table.

CREATE INDEX coffee_name_idx on Coffee (coffee_name);



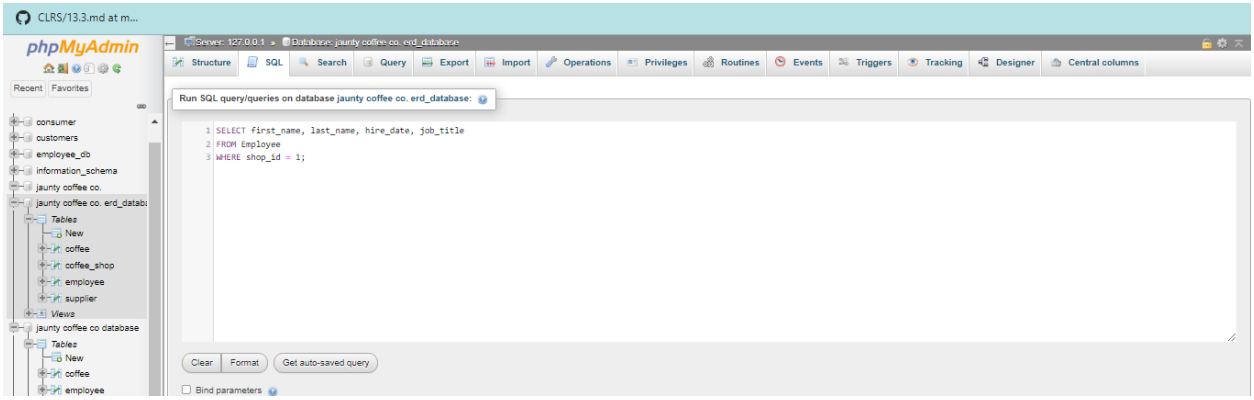
c. Demonstrate that you tested your code by providing a screenshot showing your SQL commands and the database server's response.



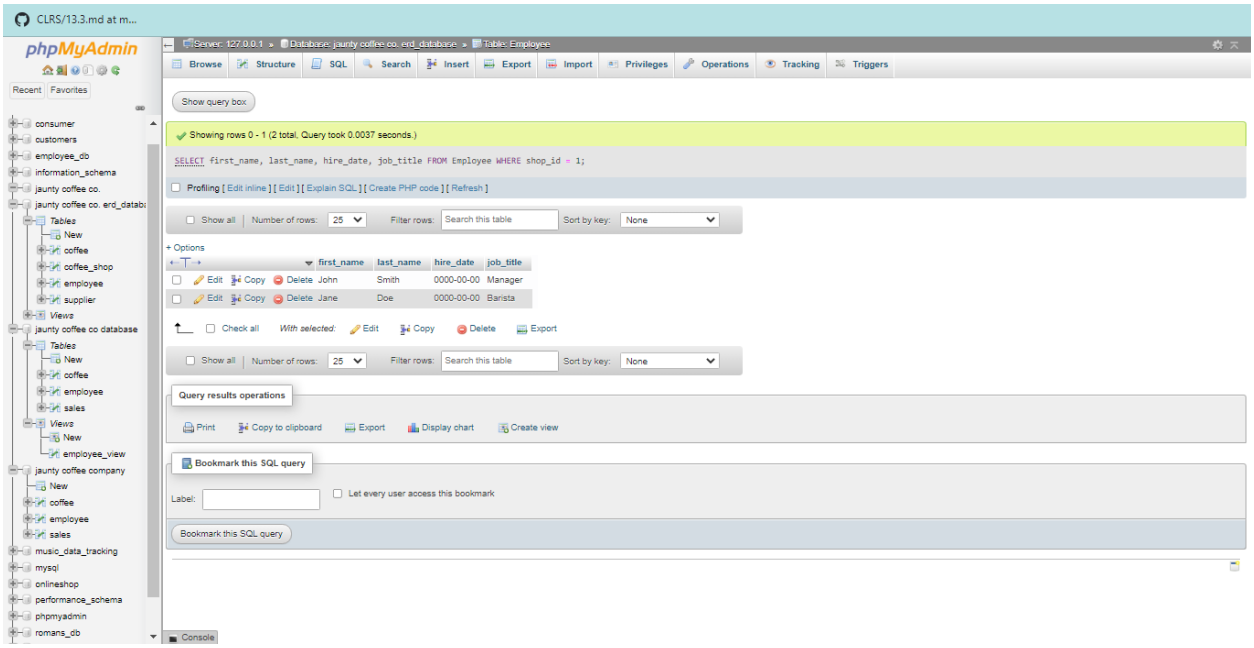
Task 5: Develop SQL code to create a SFW (SELECT–FROM–WHERE) query for any of your tables or views by doing the following:

a. Provide the SQL code you wrote to create your SFW query.

```
SELECT first_name, last_name, hire_date, job_title
FROM Employee
WHERE shop_id = 1;
```



b. Demonstrate that you tested your code by providing a screenshot showing your SQL commands and the database server's response.

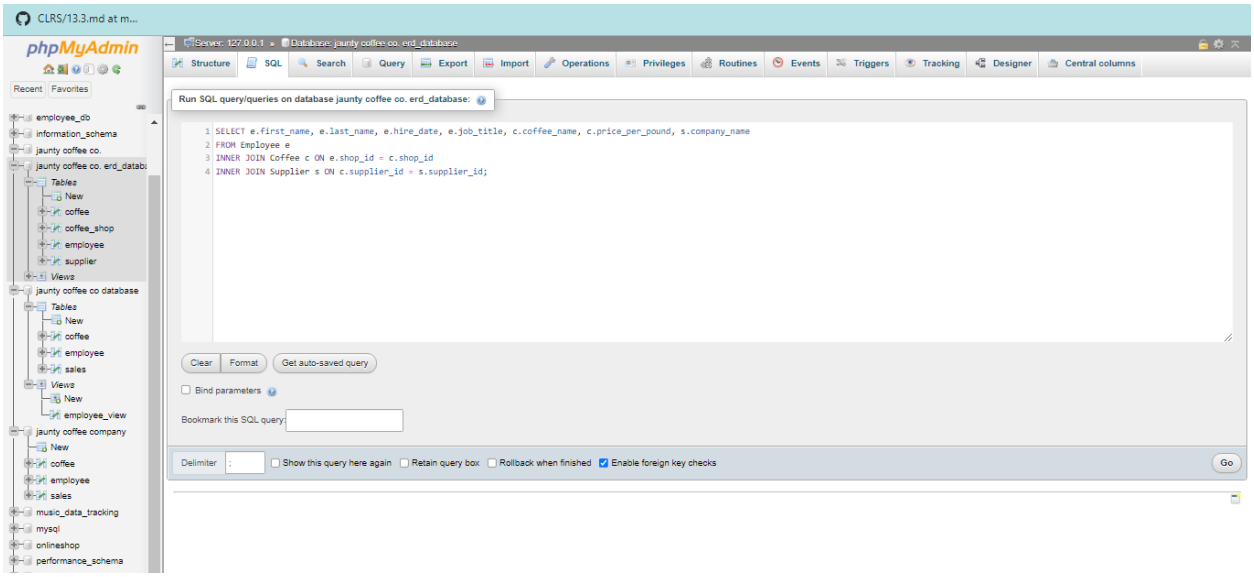


Task 6: Develop SQL code to create a query by doing the following:

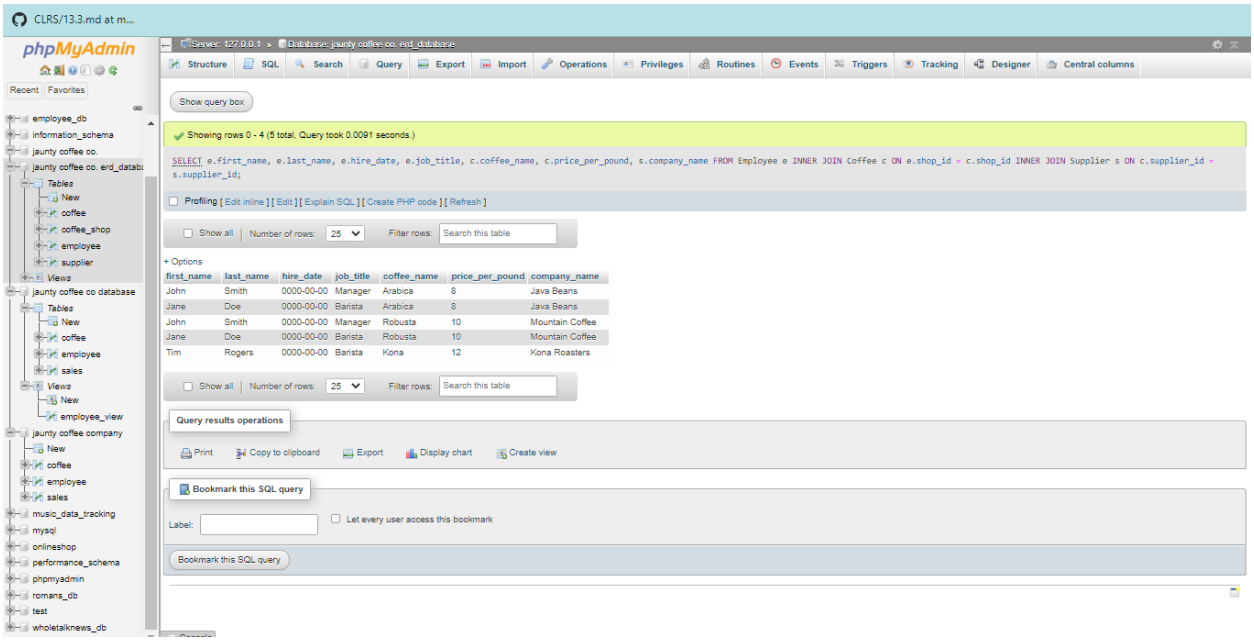
a. Provide the SQL code you wrote to create your table joins query. The query should join together three different tables and include attributes from all three tables in its output.

```
SELECT e.first_name, e.last_name, e.hire_date, e.job_title, c.coffee_name,
c.price_per_pound, s.company_name
FROM Employee e
INNER JOIN Coffee c ON e.shop_id = c.shop_id
```

```
INNER JOIN Supplier s ON c.supplier_id = s.supplier_id;
```



b. Demonstrate that you tested your code by providing a screenshot showing your SQL commands and the database server's response.



Full database

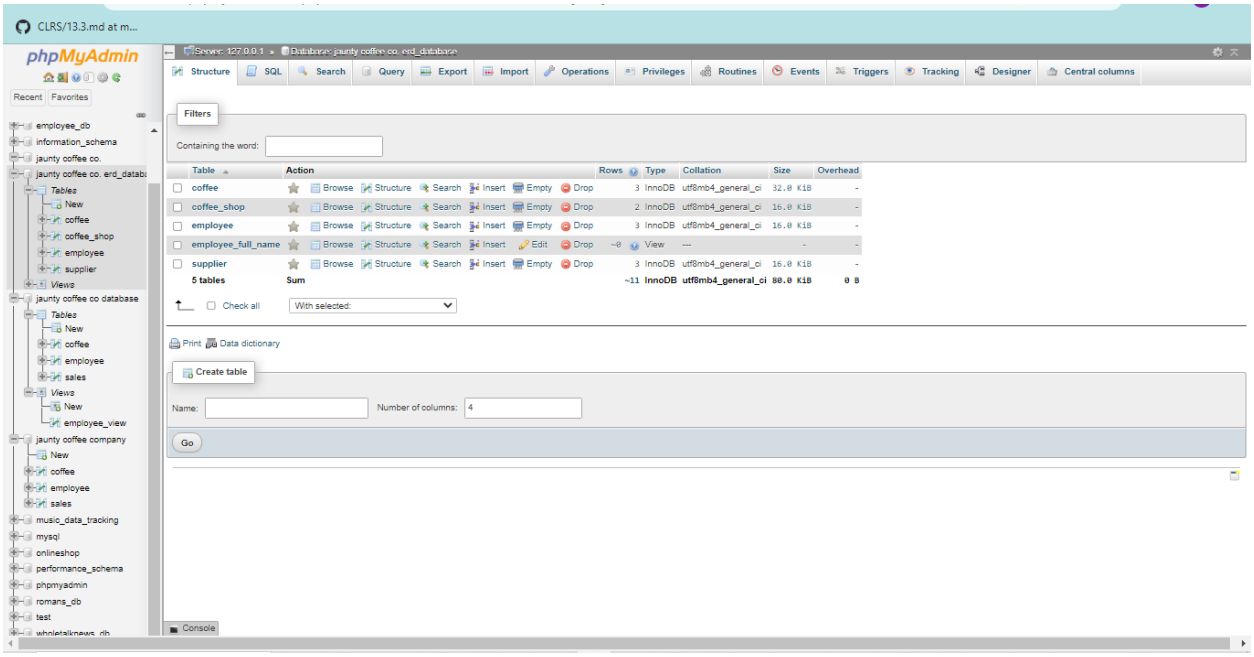


TABLE Employee

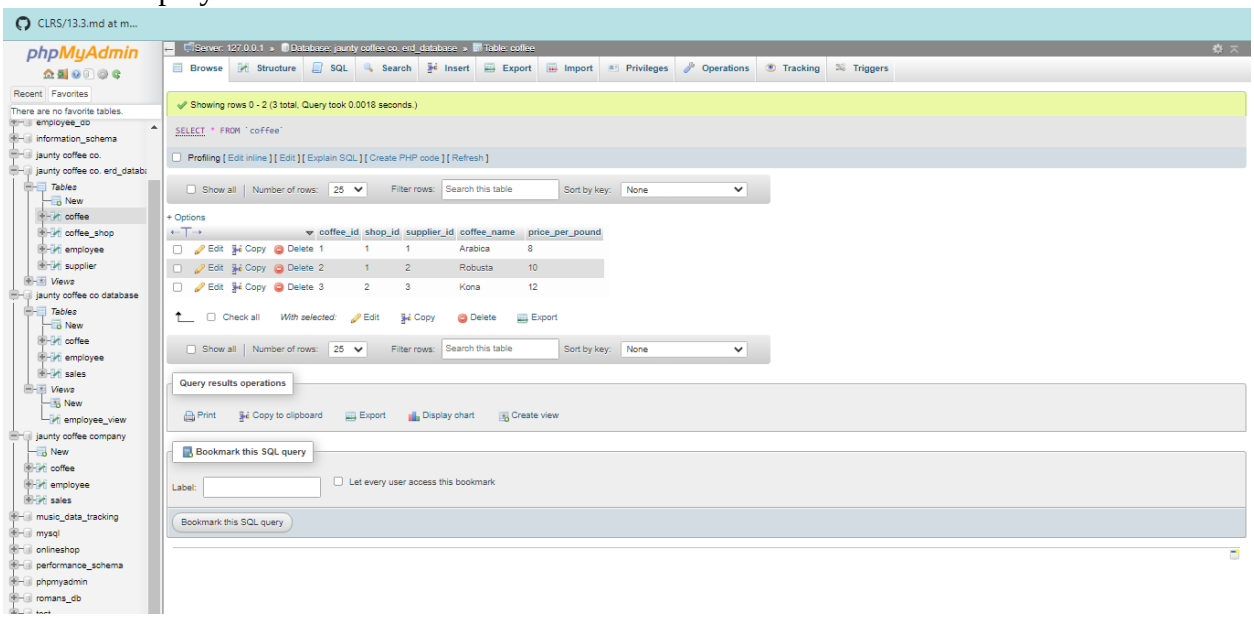


TABLE Coffee_Shop

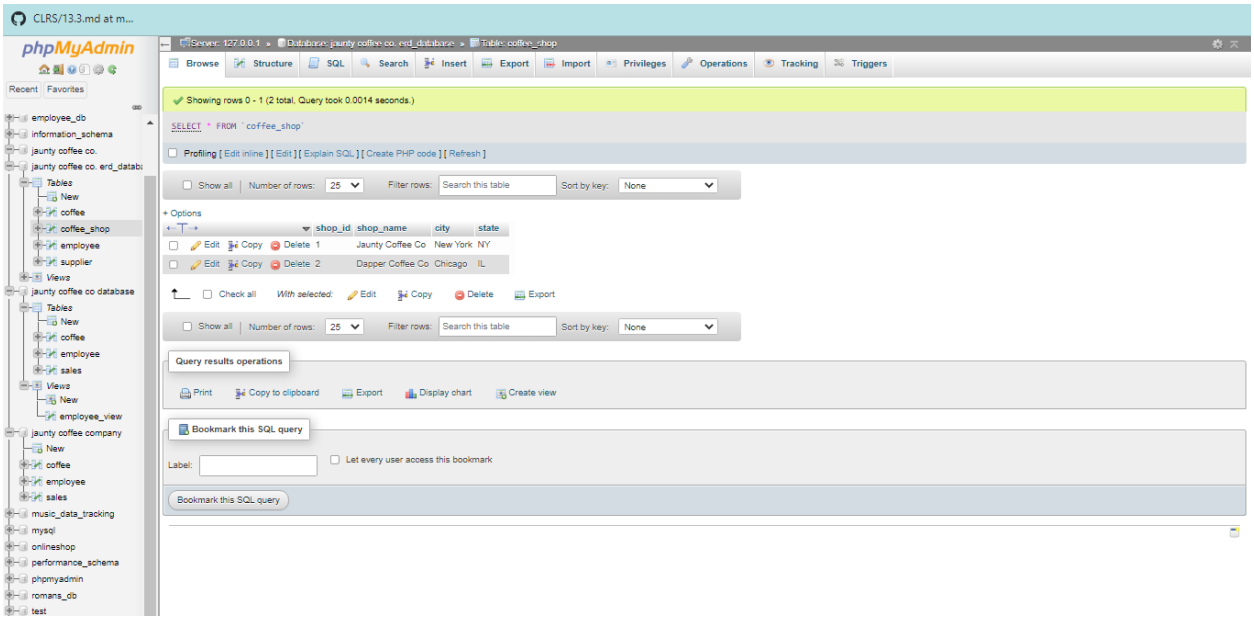


TABLE Coffee

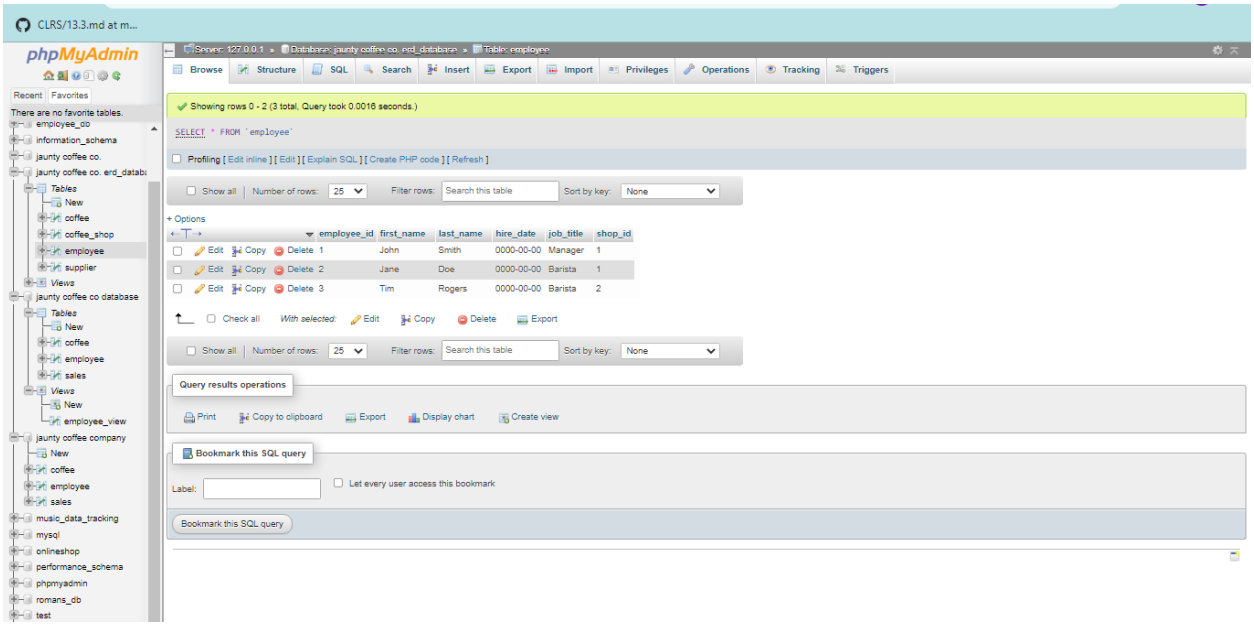
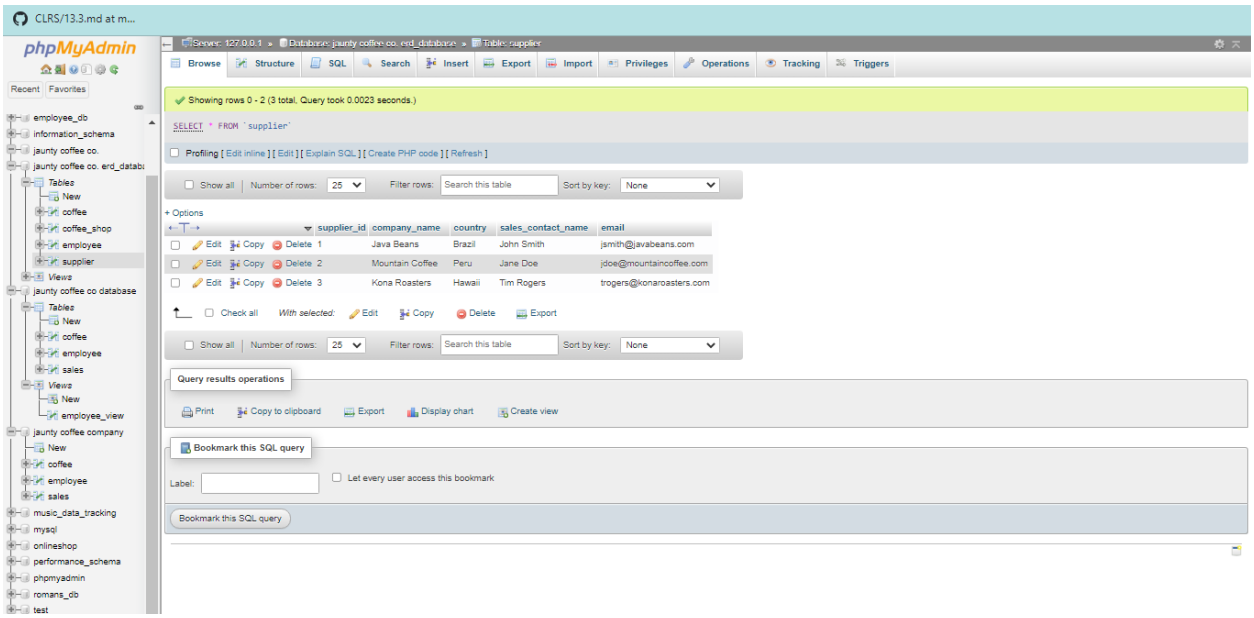


TABLE Supplier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SELECT * FROM `supplier`
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Show all | Number of rows: 25 Filter rows: Search this table Sort by key: None
+ Options
supplier_id company_name country sales_contact_name email
Edit Copy Delete 1 Java Beans Brazil John Smith jsmith@javabeans.com
Edit Copy Delete 2 Mountain Coffee Peru Jane Doe jdoe@mountaincoffee.com
Edit Copy Delete 3 Kona Roasters Hawaii Tim Rogers trogers@konaroasters.com
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