Database Systems

Restaurant Management Database

Joseph Severe

Salem State University

Abstract

A new restaurant named Farmer's restaurant wants to implement a management system. A management system that allows them to view their inventory and daily invoices instead of entering them manually onto a physical report or spreadsheet. This is for them to keep track of expenses and allows them to be audited by financial reports. They want to maintain their database which keeps a tab on the customer spending and learn more about their demographic both online including their physical location. The importance and relevance are to pull valuable information to make adequate business decisions for the company's future.

Objective: Allowing customers to peruse the menu with the swipe of a finger and making the user design user-friendly and easy to navigate. This management system will also increase the process of ordering food for the customer and ingredients for the business balancing the supply and demand chain. The restaurant wants to be able to win customer trust by putting in their personal information to order food and build their brand through security. They'd like to use search tools to query and analyze data to understand their customer better and find valuable information based on that.

Data Types (Used in entities):

Integer (INT) - Ranges from -2147483648 to 2147483648.

Decimal (FLOAT) - Can contain any decimal number precisely to 23 digits.

String (VARCHAR) - Can contain any alphanumeric string from a length of 0 - 255 characters/numbers.

Calendar Date (DATE) - Contains a calendar date in the format of YYYY-MM-DD

Data Requirements

The database for the restaurant will contain 11 entities:

- Areacode
- Customer
- Cus_order
- Drinks
- Employee
- Executve_Chef
- Ingredients
- Invoice
- Meals
- Payment_tranasaction
- Vendor

The attributes of each entity are as followed:

Areacode:

- Area_code (PRIMARY KEY, INT)
- Location (VARCHAR)

Customer:

- Cus_ID (PRIMARY KEY, INT)
- Cus_name (VARCHAR)
- Cus_online (INT)
- Cus_table (INT)
- area_code (FOREIGN KEY, INT)
- Cus_phone (VARCHAR)
- Cus_address (VARCHAR)

Cus_order

- Cus_OrderID (PRIMARY KEY, INT)
- Cus_ID (FOREIGN KEY, INT)
- Meal_ID (FOREIGN KEY, INT)
- Drink_ID (FOREIGN KEY, INT)
- Emp_ID (FOREIGN KEY, INT)
- Drink_quantity (INT)
- Meal_quantity (INT)
- Order_date (DATE)
- Prepared_by (FOREIGN KEY, INT)

Drinks

- Drink_ID (PRIMARY KEY, INT)
- Drink_item (VARCHAR)
- Drink_price (DECIMAL)
- Drink_availability (INT)

Employee

- Emp_ID (PRIMARY KEY, INT)
- Emp_name (VARCHAR)
- Emp_job (VARCHAR)
- Emp_StartDate (DATE)
- area_code (FOREIGN KEY, INT)
- Emp_phone (VARCHAR)
- Emp_address (VARCHAR)
- Emp_Salary (INT)

Executive_Chef

- Chef_ID (PRIMARY KEY, INT)
- Chef_name (VARCHAR)
- Chef_address (VARCHAR)
- Chef_phone (VARCHAR)

Ingredients

- Ingredient_ID (PRIMARY KEY, INT)
- Ingredient_name (VARCHAR)
- Ingredient_quantity (INT)
- Amount_needed (INT)
- Ingredient_cost (DECIMAL)
- Vednor_ID (FOREIGN KEY, INT)

Invoice

- Inv_ID (PRIMARY KEY, INT)
- Cus_OrderID (FOREIGN KEY, INT)
- Inv_price (DECIMAL)

Meals

- Meal_ID (PRIMARY KEY, INT)
- Meal_Item (VARCHAR)
- Meal_price (DECIMAL)
- Meal_availability (INT)

Payment_transaction

- Pay_ORDER (PRIMARY KEY, INT)
- Pay_name (VARCHAR)
- Pay_type (VARCHAR)

- Inv_ID (FOREIGN KEY, INT)

Vendor

- Vendor_ID (PRIMARY KEY, INT)
- Vendor_name (VARCHAR)
- Vednor_address (VARCHAR)
- Vendor_phone (VARCHAR)
- Chef_ID (FOREIGN KEY, INT)

The reasoning for the entities:

My reasoning for choosing 11 entities is because I wanted to consider every aspect of the restaurant industry. Especially for a new restaurant starting out. I observed both the physical and the online aspects of the business when customers are making transactions. The table for customer orders allows Employees to generate an invoice and from that, a customer or many customers can pay that invoice through a payment transaction. There are certain tables that contain attributes that connect tables together.

Business Rules:

Each Customer can have one or many Orders (1:M or 1:1)

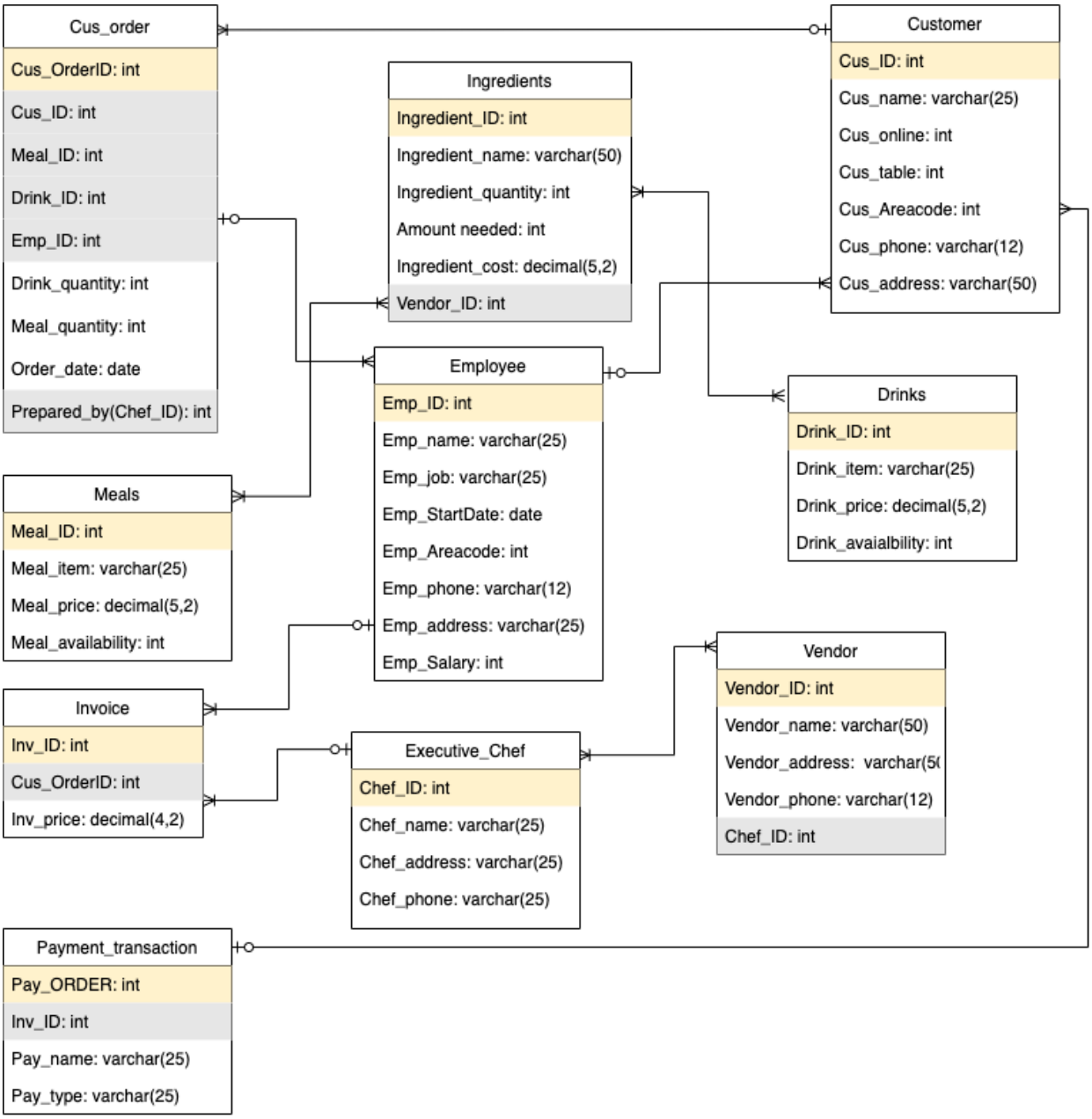
Each online Customer must have an Employee(Delivery Driver) with the same area code (1:1)

Each Meal can have one or many ingredients (1:M)

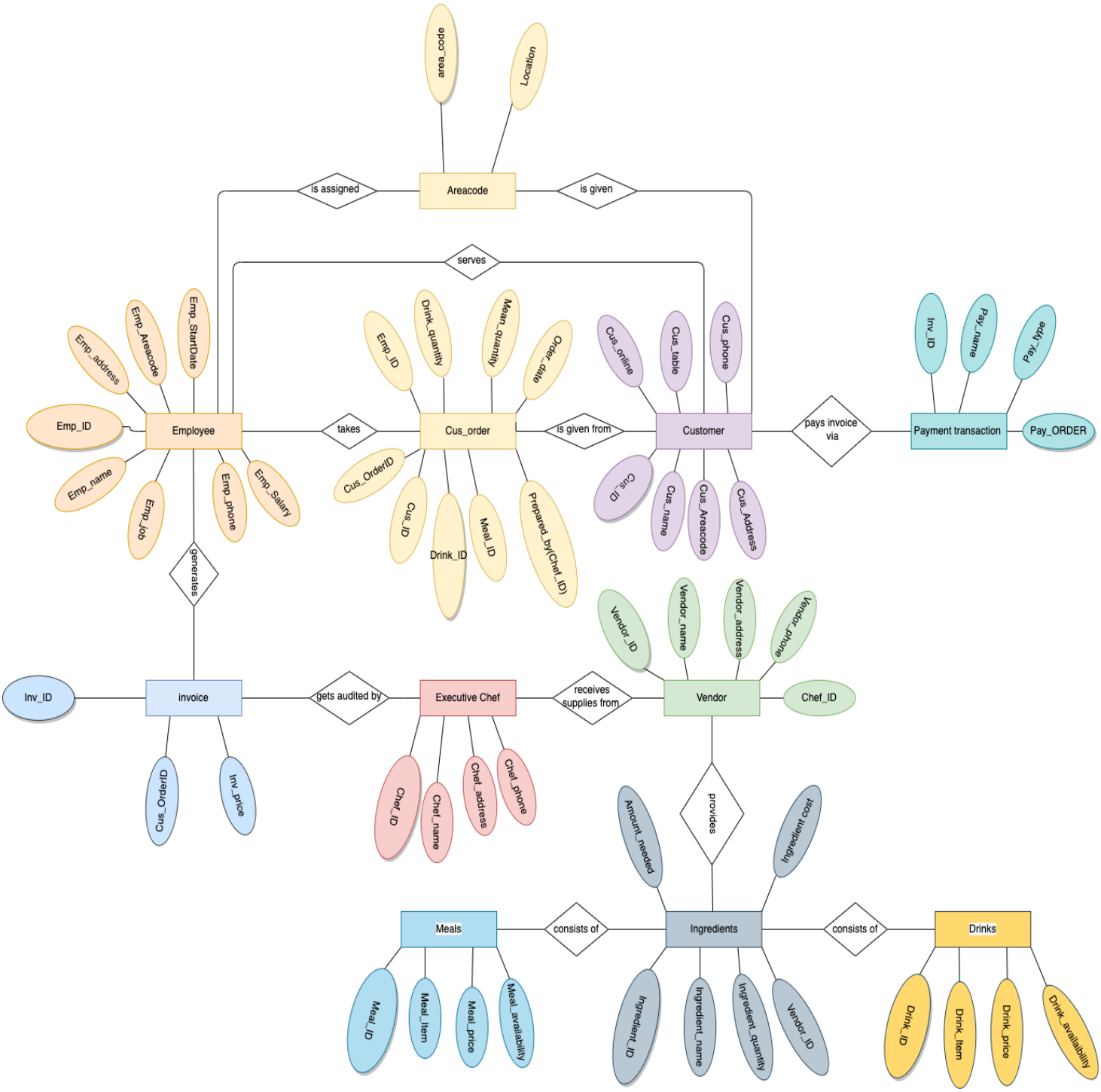
Each Drink can have one or many ingredients (1:M)

Each executive chef has a collaboration with one or many vendors (1:M)

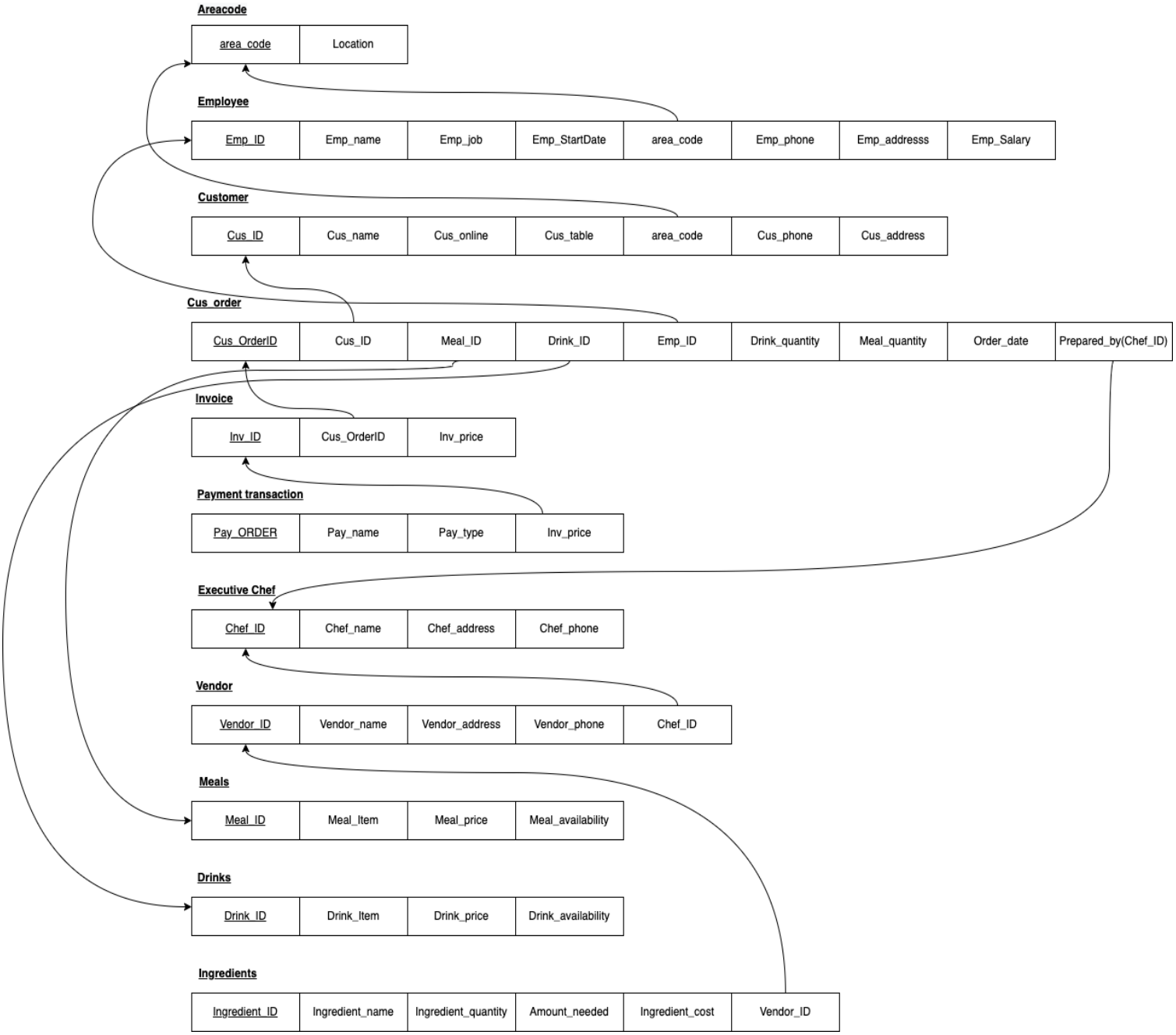
Entity Relation Diagram: Logical



Conceptual


area_code
Location
Areacode
is assigned
is given
serves
Emp_address
Emp_Areacode
Emp_StartDate
Emp_ID
Emp_name
Emp_job
Emp_phone
Emp_Salary
Employee
takes
generates
Emp_ID
Drink_quantity
Mean_quantity
Order_date
Cus_OrderID
Cus_ID
Drink_ID
Meal_ID
Prepared_by(Chef_ID)
Cus_order
is given from
Cus_online
Cus_table
Cus_phone
Cus_ID
Cus_name
Cus_Areacode
Cus_Address
Customer
pays invoice via
Inv_ID
Pay_name
Pay_type
Payment transaction
Pay_ORDER
Inv_ID
invoice
gets audited by
Cus_OrderID
Inv_price
Executive Chef
receives supplies from
Chef_ID
Chef_name
Chef_address
Chef_phone
Vendor_ID
Vendor_name
Vendor_address
Vendor_phone
Vendor
Chef_ID
provides
Amount_needed
Ingredient_cost
Meals
consists of
Ingredients
consists of
Drinks
Meal_ID
Meal_Item
Meal_price
Meal_availability
Ingredient_ID
Ingredient_name
Ingredient_quantity
Vendor_ID
Drink_ID
Drink_Item
Drink_price
Drink_availability

Schema Diagram



Creating Database using MySQL

Creation & Use of Database:

```
CREATE DATABASE db_josephs_C263;
USE db_josephs_C263;
```

Creation of Areacode Table:

```
CREATE TABLE Areacode (
area_code INT NOT NULL,
Location VARCHAR(25) NOT NULL,
PRIMARY KEY(area_code));
```

Creation of Customer Table:

```
CREATE TABLE Customer (
Cus_ID INT AUTO_INCREMENT NOT NULL,
Cus_name VARCHAR(25) DEFAULT NULL,
Cus_online INT NOT NULL,
Cus_table INT DEFAULT NULL,
area_code  INT NOT NULL,
Cus_phone VARCHAR(12) NOT NULL,
Cus_address VARCHAR(12) NOT NULL,
PRIMARY KEY(Cus_ID),
FOREIGN KEY(area_code) references Areacode(area_code));
```

Creation of Cus_order Table:

```
CREATE TABLE Cus_order (
Cus_OrderID INT AUTO_INCREMENT NOT NULL,
Cus_ID INT NOT NULL,
Meal_ID INT(3) NOT NULL,
Drink_ID INT(3) NOT NULL,
Emp_ID INT NOT NULL,
Drink_quantity INT,
```

```
Meal_quantity INT,
Order_date DATE NOT NULL,
Prepared_by INT NOT NULL,
PRIMARY KEY(Cus_OrderID),
FOREIGN KEY (Meal_ID) references Meals (Meal_ID),
FOREIGN KEY (Drink_ID) references Drinks (Drink_ID),
FOREIGN KEY (Emp_ID) references Employee (Emp_ID)
FOREIGN KEY (Prepared_by) references Executive_Chef(Chef_ID));
```

Creation of Drinks Table:

```
CREATE TABLE Drinks(
Drink_ID INT NOT NULL,
Drink_Item VARCHAR(25) NOT NULL,
Drink_price DECIMAL(5,2) NOT NULL,
Drink_availability INT DEFAULT NULL,
PRIMARY KEY(Drink_ID));
```

Creation of Employee Table:

```
CREATE TABLE Employee(
Emp_ID INT NOT NULL,
Emp_name VARCHAR(25) NOT NULL,
Emp_job VARCHAR(25) NOT NULL,
Emp_StartDate DATE,
area_code INT NOT NULL,
Emp_phone VARCHAR(25) DEFAULT NULL,
Emp_address VARCHAR(25) DEFAULT NULL,
Emp_Salary INT NOT NULL,
PRIMARY KEY(Emp_ID),
FOREIGN KEY(area_code) references Employee (area_code));
```

Creation of Executive_Chef Table:

```
CREATE TABLE Executive_Chef(
Chef_ID INT NOT NULL,
Chef_name VARCHAR(25) NOT NULL,
```

```
Chef_address VARCHAR(25) DEFAULT NULL,
Chef_phone VARCHAR(12) NOT NULL,
PRIMARY KEY(Chef_ID));
```

Creation of Ingredients Table:

```
CREATE TABLE Ingredients(
Ingredient_ID INT NOT NULL,
Ingredient_name VARCHAR(50) NOT NULL,
Ingredient_quantity INT NOT NULL,
Amount_needed INT NOT NULL,
Ingredient_cost DECIMAL(5,2) NOT NULL,
Vendor_ID INT NOT NULL,
PRIMARY KEY(Ingredient_ID),
FOREIGN KEY(Vendor_ID) references Vendor (Vendor_ID));
```

Creation of Invoice Table:

```
CREATE TABLE Invoice(
Inv_ID INT NOT NULL,
Cus_OrderID INT AUTO_INCREMENT NOT NULL,
Inv_price DECIMAL(4,2),
PRIMARY KEY(Inv_ID),
FOREIGN KEY(Cus_OrderID) references Cus_order (Cus_OrderID));
```

Creation of Meals Table:

```
CREATE TABLE Meals(
Meal_ID INT(3) NOT NULL,
Meal_Item  VARCHAR(25) NOT NULL,
Meal_price DECIMAL(5,2) NOT NULL,
Meal_availability INT DEFAULT NULL,
PRIMARY KEY(Meal_ID));
```

Creation of Payment_transaction Table:

```
CREATE TABLE Payment_transaction(
Pay_ORDER INT AUTO_INCREMENT NOT NULL,
Pay_name VARCHAR(25) NOT NULL,
Pay_type VARCHAR(25) NOT NULL,
Inv_ID INT NOT NULL,
PRIMARY KEY(Pay_ORDER),
FOREIGN KEY(Inv_ID) references Invoice (Inv_ID));
```

Creation of Vendor Table:

```
CREATE TABLE Vendor(
Vendor_ID INT NOT NULL,
Vendor_name VARCHAR(50) NOT NULL,
Vendor_address VARCHAR(50) NOT NULL,
Vendor_phone VARCHAR(12) NOT NULL,
Chef_ID INT NOT NULL,
PRIMARY KEY(Vednor_ID),
FOREIGN KEY(Chef_ID) references Executive_Chef  (Chef_ID));
```

Test Queries

1. **List of customers with their first and last names**
   SELECT * FROM Customer Cus_name;

```
mysql> SELECT * FROM Customer Cus_name;
+--------+--------------------+------------+-----------+-----------+--------------+--------------------+
| Cus_ID | Cus_name           | Cus_online | Cus_table | area_code | Cus_phone    | Cus_address        |
+--------+--------------------+------------+-----------+-----------+--------------+--------------------+
|      1 | Lane Hansen        |          1 |      NULL |       795 | 795-456-8345 | 451 Union St.      |
|      2 | Dean Morgan        |          0 |        23 |       781 | 781-234-5468 | 23 Hunter Rd.      |
|      3 | Jasper Macdonald   |          1 |      NULL |       765 | 765-876-9054 | 54 Crispus Ave.    |
|      4 | Averi Hodge        |          1 |      NULL |       978 | 978-432-0987 | 34 Layover St.     |
|      5 | Tristin Case       |          0 |        26 |       716 | 716-785-9372 | 20 Nixon St.       |
|      6 | Kali Davis         |          1 |      NULL |       716 | 716-765-9875 | 90 Bowdoin St.     |
|      7 | Cassius Kemp       |          0 |        29 |       978 | 978-654-2356 | 321 Beacon St. #12 |
|      8 | Baylee Jenkins     |          1 |      NULL |       978 | 978-654-2452 | 56 Bodouin St.     |
|      9 | Ignacio Booker     |          0 |        31 |       781 | 781-543-6789 | 83 Garner Ave.     |
|     10 | Kelvin Randolph    |          0 |        32 |       716 | 716-543-2134 | 78 Safe St.        |
|     11 | Chris Berger       |          1 |      NULL |       765 | 765-234-6572 | 34 Walker St.      |
|     12 | Mayra Murphy       |          0 |        29 |       978 | 978-654-324  | 21 Jester Rd.      |
|     13 | Rubi Moreno        |          1 |      NULL |       795 | 795-234-9087 | 86 Dove Lane       |
|     14 | Jeramiah Mcpherson |          0 |        33 |       716 | 716-987-3452 | 45 Curry Rd.       |
|     15 | Derick Crosby      |          1 |      NULL |       978 | 978-093-6527 | 65 Von Lane        |
+--------+--------------------+------------+-----------+-----------+--------------+--------------------+
15 rows in set (0.00 sec)
```

2. **Employee's with the least amount of Salary (From greatest to least)**
   SELECT MIN(Emp_Salary) AS Minimal_Salary, Emp_name, Emp_ID
   FROM Employee
   Group By Emp_ID;

```
mysql>    SELECT MIN(Emp_Salary) AS Minimal_Salary, Emp_name, Emp_ID
    ->      FROM Employee
    ->      Group By Emp_ID;
+----------------+------------------+--------+
| Minimal_Salary | Emp_name         | Emp_ID |
+----------------+------------------+--------+
|         100000 | Isaias Pace      |    121 |
|          60000 | James Serrano    |    140 |
|          68000 | Piper Jensen     |    212 |
|          35000 | Quintin Olson    |    243 |
|          44000 | Melany Howard    |    321 |
|          31000 | Garrett Warner   |    380 |
|          35000 | Rashad Blackburn |    423 |
|          41000 | Rhianna Carlson  |    478 |
|          47000 | Ibrahim Murray   |    520 |
|          40000 | Zachary Cowan    |    589 |
|          29000 | Jacqueline Salas |    623 |
|          35000 | Logan Whitaker   |    670 |
|          45000 | Ahmed Shields    |    705 |
|          55000 | Yael Tanner      |    710 |
|          40000 | Dominick Foley   |    735 |
|          42000 | Junior Saunders  |    745 |
+----------------+------------------+--------+
16 rows in set (0.00 sec)
```

3. List of Customers purchasing food online & in-person

a. SELECT * FROM Customer Cus_name WHERE Cus_online = 1; (online)

```
mysql> SELECT * FROM Customer Cus_name WHERE Cus_online = 1;
+--------+-----------------+------------+-----------+-----------+--------------+-----------------+
| Cus_ID | Cus_name        | Cus_online | Cus_table | area_code | Cus_phone    | Cus_address     |
+--------+-----------------+------------+-----------+-----------+--------------+-----------------+
|      1 | Lane Hansen     |          1 |      NULL |       795 | 795-456-8345 | 451 Union St.   |
|      3 | Jasper Macdonald|          1 |      NULL |       765 | 765-876-9054 | 54 Crispus Ave. |
|      4 | Averi Hodge     |          1 |      NULL |       978 | 978-432-0987 | 34 Layover St.  |
|      6 | Kali Davis      |          1 |      NULL |       716 | 716-765-9875 | 90 Bowdoin St.  |
|      8 | Baylee Jenkins  |          1 |      NULL |       978 | 978-654-2452 | 56 Bodouin St.  |
|     11 | Chris Berger    |          1 |      NULL |       765 | 765-234-6572 | 34 Walker St.   |
|     13 | Rubi Moreno     |          1 |      NULL |       795 | 795-234-9087 | 86 Dove Lane    |
|     15 | Derick Crosby   |          1 |      NULL |       978 | 978-093-6527 | 65 Von Lane     |
+--------+-----------------+------------+-----------+-----------+--------------+-----------------+
8 rows in set (0.00 sec)
```

b. SELECT * FROM Customer Cus_name WHERE Cus_online = 0; (in-person)

```
mysql>  SELECT * FROM Customer Cus_name WHERE Cus_online = 0;
+--------+-------------------+------------+-----------+-----------+--------------+--------------------+
| Cus_ID | Cus_name          | Cus_online | Cus_table | area_code | Cus_phone    | Cus_address        |
+--------+-------------------+------------+-----------+-----------+--------------+--------------------+
|      2 | Dean Morgan       |          0 |        23 |       781 | 781-234-5468 | 23 Hunter Rd.      |
|      5 | Tristin Case      |          0 |        26 |       716 | 716-785-9372 | 20 Nixon St.       |
|      7 | Cassius Kemp      |          0 |        29 |       978 | 978-654-2356 | 321 Beacon St. #12 |
|      9 | Ignacio Booker    |          0 |        31 |       781 | 781-543-6789 | 83 Garner Ave.     |
|     10 | Kelvin Randolph   |          0 |        32 |       716 | 716-543-2134 | 78 Safe St.        |
|     12 | Mayra Murphy      |          0 |        29 |       978 | 978-654-324  | 21 Jester Rd.      |
|     14 | Jeramiah Mcpherson|          0 |        33 |       716 | 716-987-3452 | 45 Curry Rd.       |
+--------+-------------------+------------+-----------+-----------+--------------+--------------------+
7 rows in set (0.00 sec)
```

4. List of employees with their hiring data and counting the date

SELECT Emp_ID, Emp_name, Emp_StartDate FROM Employee WHERE Emp_StartDate = '2022-04-08';

```
mysql> SELECT Emp_ID, Emp_name, Emp_StartDate FROM Employee WHERE     Emp_StartDate = '2022-04-08';
+--------+-----------------+---------------+
| Emp_ID | Emp_name        | Emp_StartDate |
+--------+-----------------+---------------+
|    121 | Isaias Pace     | 2022-04-08    |
|    140 | James Serrano   | 2022-04-08    |
|    243 | Quintin Olson   | 2022-04-08    |
|    423 | Rashad Blackburn| 2022-04-08    |
|    520 | Ibrahim Murray  | 2022-04-08    |
+--------+-----------------+---------------+
5 rows in set (0.00 sec)
```

5. List of available meals

SELECT Meal_ID, Meal_Item FROM Meals Where Meal_availability > 0;

```
mysql>   SELECT Meal_ID, Meal_Item FROM Meals Where Meal_availability > 0;
+---------+------------------------+
| Meal_ID | Meal_Item              |
+---------+------------------------+
|     101 | Silver Dollar Pancakes |
|     103 | Buttermilk Pancakes    |
|     124 | Belgian Waffles        |
|     129 | French Toast           |
|     135 | Blueberry Pancakes     |
|     145 | Hearty Breakfast       |
|     203 | American Grits         |
|     211 | Biscuits & Gravy       |
|     223 | Frying Pan Special     |
|     231 | Chicken Fried Steak    |
|     245 | Eggs Benedict          |
|     321 | Scrambled Eggs         |
|     332 | Mini French Toast      |
|     421 | Blueberry Muffin       |
|     445 | Bagel and Cream Cheese |
|     463 | Fruit                  |
|     470 | Yogurt                 |
|     480 | Oats                   |
|     504 | Veggie Omelet          |
|     510 | Cheese Omelet          |
|     534 | Western Omelet         |
|     540 | Senior Omelet          |
|     550 | Cheese Omelet w/Ham    |
+---------+------------------------+
23 rows in set (0.00 sec)
```

6. List of available drinks

SELECT Meal_ID, Meal_Item FROM Meals Where Meal_availability < 1;

```
mysql> SELECT Meal_ID, Meal_Item FROM Meals Where Meal_availability < 1;
+---------+-----------+
| Meal_ID | Meal_Item |
+---------+-----------+
|     450 | Granola   |
+---------+-----------+
1 row in set (0.00 sec)
```

7. List of employees with their salary

SELECT Emp_ID, Emp_name, Emp_job, Emp_Salary FROM Employee;

```
mysql>     SELECT Emp_ID, Emp_name, Emp_job, Emp_Salary FROM Employee;
+--------+-----------------+--------------------+------------+
| Emp_ID | Emp_name        | Emp_job            | Emp_Salary |
+--------+-----------------+--------------------+------------+
|    121 | Isaias Pace     | Restaurant Manager |     100000 |
|    140 | James Serrano   | Chef               |      60000 |
|    212 | Piper Jensen    | Sous Chef          |      68000 |
|    243 | Quintin Olson   | Waitress           |      35000 |
|    321 | Melany Howard   | Delivery driver    |      44000 |
|    380 | Garrett Warner  | Delivery driver    |      31000 |
|    423 | Rashad Blackburn| Sanitation Worker  |      35000 |
|    478 | Rhianna Carlson | Delivery driver    |      41000 |
|    520 | Ibrahim Murray  | Waitress           |      47000 |
|    589 | Zachary Cowan   | Delivery driver    |      40000 |
|    623 | Jacqueline Salas| Sanitation Worker  |      29000 |
|    670 | Logan Whitaker  | Delivery driver    |      35000 |
|    705 | Ahmed Shields   | Chef               |      45000 |
|    710 | Yael Tanner     | Sous Chef          |      55000 |
|    735 | Dominick Foley  | Chef               |      40000 |
|    745 | Junior Saunders | Chef               |      42000 |
+--------+-----------------+--------------------+------------+
16 rows in set (0.00 sec)
```

8. List of ingredients and quantity from each vendor (Important for inventory control)

```
Select
Vendor.Vendor_ID,
Vendor.Vendor_name,
Ingredients.Ingredient_ID,
Ingredients.Ingredient_name,
Ingredients.Ingredient_quantity,
Ingredients.Amount_needed

 From Vendor
 Join Ingredients
 On Vendor.Vendor_ID = Ingredients.Vendor_ID;
```

```
mysql> Select  Vendor.Vendor_ID, Vendor.Vendor_name, Ingredients.Ingredient_ID, Ingredients.Ingredient_name, Ingredients.Ingredient_quantity,      Ingredients.Amount_neede
d  From Vendor Join Ingredients On Vendor.Vendor_ID = Ingredients.Vendor_ID;
+-----------+------------------------+---------------+-----------------------------------+---------------------+---------------+
| Vendor_ID | Vendor_name            | Ingredient_ID | Ingredient_name                   | Ingredient_quantity | Amount_needed |
+-----------+------------------------+---------------+-----------------------------------+---------------------+---------------+
|       121 | General Mills          |           204 | Bisquick box of 96 0z (2 oz)      |                   3 |             5 |
|       121 | General Mills          |           302 | Granola pack (120 ct)             |                   0 |             2 |
|       121 | General Mills          |           315 | Yogurt (24 ct)                    |                   5 |             6 |
|       129 | Boston Organic         |           135 | Organic Sugar (24 oz bags)        |                  16 |            12 |
|       129 | Boston Organic         |           137 | Blueberries (8oz)                 |                  15 |            15 |
|       129 | Boston Organic         |           305 | Four Fruits (Per 1lb)             |                  12 |            25 |
|       135 | Mystic Coffee Roaster  |           139 | Coffee (Per 8oz)                  |                 100 |            80 |
|       150 | New England Tea & Coffee |         140 | Black Tea (Per 8oz)               |                 100 |           100 |
|       150 | New England Tea & Coffee |         145 | Green Tea (Per 8oz)               |                 100 |           100 |
|       205 | Ocean Spray            |           216 | Orange Juice (8oz)                |                  14 |            13 |
|       205 | Ocean Spray            |           218 | Apple Juice (8 oz)                |                  12 |            11 |
|       205 | Ocean Spray            |           220 | Cranberry Juice (8 oz)            |                  12 |            12 |
|       211 | Quaker Oats            |           203 | Quaker 5-min Grits 24 oz box (2 oz) |                20 |            15 |
|       222 | One Mighty Mills       |           126 | Flour (Per 4 oz)                  |                  10 |            12 |
|       232 | Heinz                  |           206 | Gravy (24 oz)                     |                  20 |            15 |
|       245 | Farmfoods Market       |           213 | Steak (8 oz)                      |                 100 |           100 |
|       245 | Farmfoods Market       |           320 | Cheese (24 ct)                    |                   8 |             7 |
|       250 | Organic Valley         |           105 | Carton of Eggs                    |                  20 |            30 |
|       250 | Organic Valley         |           121 | Butter (Per 1tb)                  |                  80 |           100 |
|       250 | Organic Valley         |           401 | Bell Peppers(1/2 serving)         |                  50 |            60 |
|       250 | Organic Valley         |           410 | Spinach (2 oz)                    |                 100 |           110 |
|       250 | Organic Valley         |           412 | Tomato (2 oz)                     |                 100 |           110 |
|       265 | Sun Sweet              |           223 | Prune Juice (8 0z)                |                  12 |            13 |
|       305 | HP Hood LLC            |           130 | Gallon of Milk                    |                  10 |            10 |
|       305 | HP Hood LLC            |           330 | Hood Cookies & Cream Ice Cream    |                  23 |            30 |
|       305 | HP Hood LLC            |           332 | Caramel Ice Cream                 |                  23 |            32 |
+-----------+------------------------+---------------+-----------------------------------+---------------------+---------------+
26 rows in set (0.00 sec)
```

9. List of customers with their orders (50 orders in total)

```
Select Customer.Cus_name,
Cus_order.Cus_ID,
Cus_order.Cus_OrderID,
Cus_order.Drink_ID,
Cus_order.Meal_ID

FROM Customer
  Join Cus_order
  ON  Customer.Cus_ID = Cus_order.Cus_ID;
```

```
mysql> Select Customer.Cus_name, Cus_order.Cus_ID, Cus_order.Cus_OrderID, Cus_order.Drink_ID, Cus_order.Meal_ID  FROM Customer Join Cus_order  ON  Customer.Cus_ID = Cus_ord
er.Cus_ID;
+--------------------+--------+-------------+----------+---------+
| Cus_name           | Cus_ID | Cus_OrderID | Drink_ID | Meal_ID |
+--------------------+--------+-------------+----------+---------+
| Lane Hansen        |      1 |        1128 |      107 |     103 |
| Lane Hansen        |      1 |        1234 |      301 |     145 |
| Lane Hansen        |      1 |        2341 |      150 |     223 |
| Lane Hansen        |      1 |        3296 |      250 |     332 |
| Lane Hansen        |      1 |        4386 |     NULL |     445 |
| Lane Hansen        |      1 |        5265 |      212 |     540 |
| Dean Morgan        |      2 |        1569 |      107 |     129 |
| Dean Morgan        |      2 |        2248 |      200 |     203 |
| Dean Morgan        |      2 |        2584 |      200 |     231 |
| Dean Morgan        |      2 |        2658 |      150 |     211 |
| Jasper Macdonald   |      3 |        2103 |     NULL |     223 |
| Jasper Macdonald   |      3 |        3298 |      107 |     332 |
| Jasper Macdonald   |      3 |        4234 |     NULL |     421 |
| Averi Hodge        |      4 |        2134 |      225 |     231 |
| Averi Hodge        |      4 |        5254 |      225 |     504 |
| Averi Hodge        |      4 |        5793 |      200 |     540 |
| Tristin Case       |      5 |        1143 |      212 |     145 |
| Tristin Case       |      5 |        2386 |      150 |     223 |
| Tristin Case       |      5 |        3025 |      250 |     332 |
| Kali Davis         |      6 |        1432 |      107 |     129 |
| Kali Davis         |      6 |        4890 |     NULL |     450 |
| Cassius Kemp       |      7 |        1270 |     NULL |     145 |
| Cassius Kemp       |      7 |        2320 |      150 |     211 |
| Cassius Kemp       |      7 |        3093 |     NULL |     332 |
| Baylee Jenkins     |      8 |        2144 |     NULL |     203 |
| Baylee Jenkins     |      8 |        2319 |      200 |     211 |
| Ignacio Booker     |      9 |        3234 |     NULL |     332 |
| Ignacio Booker     |      9 |        3687 |      250 |     332 |
| Ignacio Booker     |      9 |        4032 |     NULL |     463 |
| Kelvin Randolph    |     10 |        1867 |      212 |     135 |
| Kelvin Randolph    |     10 |        2290 |     NULL |     223 |
| Kelvin Randolph    |     10 |        3342 |      212 |     321 |
| Chris Berger       |     11 |        2402 |      125 |     231 |
| Chris Berger       |     11 |        4345 |      107 |     445 |
| Chris Berger       |     11 |        5093 |      225 |     510 |
| Mayra Murphy       |     12 |        2546 |      150 |     211 |
| Mayra Murphy       |     12 |        2980 |     NULL |     223 |
| Mayra Murphy       |     12 |        2992 |      321 |     203 |
| Mayra Murphy       |     12 |        4432 |      225 |     445 |
| Rubi Moreno        |     13 |        4429 |     NULL |     463 |
| Rubi Moreno        |     13 |        4534 |     NULL |     463 |
| Rubi Moreno        |     13 |        5054 |      250 |     504 |
| Jeramiah Mcpherson |     14 |        2443 |     NULL |     203 |
| Jeramiah Mcpherson |     14 |        3789 |      330 |     321 |
| Jeramiah Mcpherson |     14 |        4236 |      200 |     480 |
| Jeramiah Mcpherson |     14 |        4658 |     NULL |     421 |
| Jeramiah Mcpherson |     14 |        5321 |      125 |     540 |
| Jeramiah Mcpherson |     14 |        5873 |      250 |     550 |
| Derick Crosby      |     15 |        1324 |      150 |     124 |
| Derick Crosby      |     15 |        2509 |      212 |     211 |
+--------------------+--------+-------------+----------+---------+
50 rows in set (0.00 sec)
```

10. List of chefs with orders prepared (50 orders in total)

```
SELECT
Executive_Chef.Chef_name,
Cus_order.Cus_OrderID,
Cus_order.Prepared_by

From Executive_Chef
Join Cus_order
ON Executive_Chef.Chef_ID = Cus_order.Prepared_by;
```

```
mysql> SELECT Executive_Chef.Chef_name, Cus_order.Cus_OrderID, Cus_order.Prepared_by From Executive_Chef Join Cus_order ON Executive_Chef.Chef_ID = Cus_order.Prepared_by;
+------------+-------------+-------------+
| Chef_name  | Cus_OrderID | Prepared_by |
+------------+-------------+-------------+
| Jimmy Drun |        1128 |         131 |
| Jimmy Drun |        1432 |         131 |
| Jimmy Drun |        2103 |         131 |
| Jimmy Drun |        2134 |         131 |
| Jimmy Drun |        2248 |         131 |
| Jimmy Drun |        2320 |         131 |
| Jimmy Drun |        2443 |         131 |
| Jimmy Drun |        2584 |         131 |
| Jimmy Drun |        2992 |         131 |
| Jimmy Drun |        3234 |         131 |
| Jimmy Drun |        3342 |         131 |
| Jimmy Drun |        4234 |         131 |
| Jimmy Drun |        4345 |         131 |
| Jimmy Drun |        4534 |         131 |
| Jimmy Drun |        5054 |         131 |
| Jimmy Drun |        5321 |         131 |
| Sasha Drun |        1143 |         151 |
| Sasha Drun |        1234 |         151 |
| Sasha Drun |        1324 |         151 |
| Sasha Drun |        2144 |         151 |
| Sasha Drun |        2290 |         151 |
| Sasha Drun |        2341 |         151 |
| Sasha Drun |        2402 |         151 |
| Sasha Drun |        2509 |         151 |
| Sasha Drun |        2658 |         151 |
| Sasha Drun |        3025 |         151 |
| Sasha Drun |        3296 |         151 |
| Sasha Drun |        3687 |         151 |
| Sasha Drun |        4032 |         151 |
| Sasha Drun |        4386 |         151 |
| Sasha Drun |        4429 |         151 |
| Sasha Drun |        4658 |         151 |
| Sasha Drun |        5093 |         151 |
| Sasha Drun |        5265 |         151 |
| Sasha Drun |        5873 |         151 |
| Jean Pierre |        1270 |         161 |
| Jean Pierre |        1569 |         161 |
| Jean Pierre |        1867 |         161 |
| Jean Pierre |        2319 |         161 |
| Jean Pierre |        2386 |         161 |
| Jean Pierre |        2546 |         161 |
| Jean Pierre |        2980 |         161 |
| Jean Pierre |        3093 |         161 |
| Jean Pierre |        3298 |         161 |
| Jean Pierre |        3789 |         161 |
| Jean Pierre |        4236 |         161 |
| Jean Pierre |        4432 |         161 |
| Jean Pierre |        4890 |         161 |
| Jean Pierre |        5254 |         161 |
| Jean Pierre |        5793 |         161 |
+------------+-------------+-------------+
50 rows in set (0.00 sec)
```

11. List of online Customers with the same area code as ALL Employee workers (Every customer has one area code and there can be one or multiple employees with the same areacode)

```
SELECT
Customer.Cus_ID,
Customer.Cus_name,
Customer.area_code,
Employee.Emp_ID,
Employee.Emp_name,
Employee.area_code

 FROM Customer
 Join Employee
```

```
ON Customer.area_code = Employee.area_code
Where Cus_online =1;
```

```
mysql> SELECT Customer.Cus_ID, Customer.Cus_name, Customer.area_code, Employee.Emp_ID, Employee.Emp_name, Employee.area_code FROM Customer Join Employee ON Customer.area_co
de = Employee.area_code Where Cus_online =1;
+--------+-----------------+-----------+--------+-----------------+-----------+
| Cus_ID | Cus_name        | area_code | Emp_ID | Emp_name        | area_code |
+--------+-----------------+-----------+--------+-----------------+-----------+
|      1 | Lane Hansen     |       795 |    321 | Melany Howard   |       795 |
|      3 | Jasper Macdonald|       765 |    140 | James Serrano   |       765 |
|      3 | Jasper Macdonald|       765 |    380 | Garrett Warner  |       765 |
|      3 | Jasper Macdonald|       765 |    710 | Yael Tanner     |       765 |
|      4 | Averi Hodge     |       978 |    243 | Quintin Olson   |       978 |
|      4 | Averi Hodge     |       978 |    423 | Rashad Blackburn|       978 |
|      4 | Averi Hodge     |       978 |    589 | Zachary Cowan   |       978 |
|      4 | Averi Hodge     |       978 |    735 | Dominick Foley  |       978 |
|      6 | Kali Davis      |       716 |    121 | Isaias Pace     |       716 |
|      6 | Kali Davis      |       716 |    520 | Ibrahim Murray  |       716 |
|      6 | Kali Davis      |       716 |    670 | Logan Whitaker  |       716 |
|      6 | Kali Davis      |       716 |    745 | Junior Saunders |       716 |
|      8 | Baylee Jenkins  |       978 |    243 | Quintin Olson   |       978 |
|      8 | Baylee Jenkins  |       978 |    423 | Rashad Blackburn|       978 |
|      8 | Baylee Jenkins  |       978 |    589 | Zachary Cowan   |       978 |
|      8 | Baylee Jenkins  |       978 |    735 | Dominick Foley  |       978 |
|     11 | Chris Berger    |       765 |    140 | James Serrano   |       765 |
|     11 | Chris Berger    |       765 |    380 | Garrett Warner  |       765 |
|     11 | Chris Berger    |       765 |    710 | Yael Tanner     |       765 |
|     13 | Rubi Moreno     |       795 |    321 | Melany Howard   |       795 |
|     15 | Derick Crosby   |       978 |    243 | Quintin Olson   |       978 |
|     15 | Derick Crosby   |       978 |    423 | Rashad Blackburn|       978 |
|     15 | Derick Crosby   |       978 |    589 | Zachary Cowan   |       978 |
|     15 | Derick Crosby   |       978 |    735 | Dominick Foley  |       978 |
+--------+-----------------+-----------+--------+-----------------+-----------+
24 rows in set (0.00 sec)
```

12. List of in-person Customers with the same area code as ALL Employee worker (Every customer has one area code and there can be one or multiple employees with the same areacode)

```
SELECT
Customer.Cus_ID,
Customer.Cus_name,
Customer.area_code,
Employee.Emp_ID,
Employee.Emp_name,
 Employee.area_code

 FROM Customer
 Join Employee
 ON Customer.area_code = Employee.area_code
 Where Cus_online =0;
```

```
mysql> SELECT Customer.Cus_ID, Customer.Cus_name, Customer.area_code, Employee.Emp_ID, Employee.Emp_name, Employee.area_code  FROM Customer Join Employee ON Customer.area_c
ode = Employee.area_code Where Cus_online =0;
+--------+------------------+-----------+--------+-----------------+-----------+
| Cus_ID | Cus_name         | area_code | Emp_ID | Emp_name        | area_code |
+--------+------------------+-----------+--------+-----------------+-----------+
|      2 | Dean Morgan      |       781 |    212 | Piper Jensen    |       781 |
|      2 | Dean Morgan      |       781 |    478 | Rhianna Carlson |       781 |
|      2 | Dean Morgan      |       781 |    623 | Jacqueline Salas|       781 |
|      2 | Dean Morgan      |       781 |    705 | Ahmed Shields   |       781 |
|      5 | Tristin Case     |       716 |    121 | Isaias Pace     |       716 |
|      5 | Tristin Case     |       716 |    520 | Ibrahim Murray  |       716 |
|      5 | Tristin Case     |       716 |    670 | Logan Whitaker  |       716 |
|      5 | Tristin Case     |       716 |    745 | Junior Saunders |       716 |
|      7 | Cassius Kemp     |       978 |    243 | Quintin Olson   |       978 |
|      7 | Cassius Kemp     |       978 |    423 | Rashad Blackburn|       978 |
|      7 | Cassius Kemp     |       978 |    589 | Zachary Cowan   |       978 |
|      7 | Cassius Kemp     |       978 |    735 | Dominick Foley  |       978 |
|      9 | Ignacio Booker   |       781 |    212 | Piper Jensen    |       781 |
|      9 | Ignacio Booker   |       781 |    478 | Rhianna Carlson |       781 |
|      9 | Ignacio Booker   |       781 |    623 | Jacqueline Salas|       781 |
|      9 | Ignacio Booker   |       781 |    705 | Ahmed Shields   |       781 |
|     10 | Kelvin Randolph  |       716 |    121 | Isaias Pace     |       716 |
|     10 | Kelvin Randolph  |       716 |    520 | Ibrahim Murray  |       716 |
|     10 | Kelvin Randolph  |       716 |    670 | Logan Whitaker  |       716 |
|     10 | Kelvin Randolph  |       716 |    745 | Junior Saunders |       716 |
|     12 | Mayra Murphy     |       978 |    243 | Quintin Olson   |       978 |
|     12 | Mayra Murphy     |       978 |    423 | Rashad Blackburn|       978 |
|     12 | Mayra Murphy     |       978 |    589 | Zachary Cowan   |       978 |
|     12 | Mayra Murphy     |       978 |    735 | Dominick Foley  |       978 |
|     14 | Jeramiah Mcpherson|      716 |    121 | Isaias Pace     |       716 |
|     14 | Jeramiah Mcpherson|      716 |    520 | Ibrahim Murray  |       716 |
|     14 | Jeramiah Mcpherson|      716 |    670 | Logan Whitaker  |       716 |
|     14 | Jeramiah Mcpherson|      716 |    745 | Junior Saunders |       716 |
+--------+------------------+-----------+--------+-----------------+-----------+
28 rows in set (0.00 sec)
```

13. List of online Customers with the same area code as Delivery drivers (App users ordering online)

```
SELECT
Customer.Cus_ID,
Customer.Cus_name,
Customer.area_code,
Employee.Emp_ID,
Employee.Emp_name,
Employee.area_code,
Employee.Emp_job

FROM Customer
Join Employee
ON Customer.area_code = Employee.area_code
Where Emp_job like '%Delivery driver%';
```

```
mysql> SELECT Customer.Cus_ID, Customer.Cus_name, Customer.area_code, Employee.Emp_ID, Employee.Emp_name, Employee.area_code, Employee.Emp_job FROM Customer Join Employee O
N Customer.area_code = Employee.area_code Where Emp_job like '%Delivery driver%';
+--------+-------------------+----------+--------+----------------+----------+----------------+
| Cus_ID | Cus_name          | area_code | Emp_ID | Emp_name       | area_code | Emp_job        |
+--------+-------------------+----------+--------+----------------+----------+----------------+
|      1 | Lane Hansen       |       795 |    321 | Melany Howard  |       795 | Delivery driver |
|     13 | Rubi Moreno       |       795 |    321 | Melany Howard  |       795 | Delivery driver |
|      3 | Jasper Macdonald  |       765 |    380 | Garrett Warner |       765 | Delivery driver |
|     11 | Chris Berger      |       765 |    380 | Garrett Warner |       765 | Delivery driver |
|      2 | Dean Morgan       |       781 |    478 | Rhianna Carlson |       781 | Delivery driver |
|      9 | Ignacio Booker    |       781 |    478 | Rhianna Carlson |       781 | Delivery driver |
|      4 | Averi Hodge       |       978 |    589 | Zachary Cowan  |       978 | Delivery driver |
|      7 | Cassius Kemp      |       978 |    589 | Zachary Cowan  |       978 | Delivery driver |
|      8 | Baylee Jenkins    |       978 |    589 | Zachary Cowan  |       978 | Delivery driver |
|     12 | Mayra Murphy      |       978 |    589 | Zachary Cowan  |       978 | Delivery driver |
|     15 | Derick Crosby     |       978 |    589 | Zachary Cowan  |       978 | Delivery driver |
|      5 | Tristin Case      |       716 |    670 | Logan Whitaker |       716 | Delivery driver |
|      6 | Kali Davis        |       716 |    670 | Logan Whitaker |       716 | Delivery driver |
|     10 | Kelvin Randolph   |       716 |    670 | Logan Whitaker |       716 | Delivery driver |
|     14 | Jeramiah Mcpherson |       716 |    670 | Logan Whitaker |       716 | Delivery driver |
+--------+-------------------+----------+--------+----------------+----------+----------------+
15 rows in set (0.01 sec)
```

14. List of payment transaction using Credit Cards which includes Invoice ID

```
SELECT
Payment_transaction.Pay_ORDER,
Payment_transaction.Pay_type,
Invoice.Inv_ID


FROM Payment_transaction
Join Invoice
ON Payment_transaction.Inv_ID = Invoice.Inv_ID

Where Pay_type like '%Credit Card%';
```

15. List of payment transaction using Apple Pay which includes Invoice ID

```
SELECT
Payment_transaction.Pay_ORDER,
Payment_transaction.Pay_type,
Invoice.Inv_ID


FROM Payment_transaction
Join Invoice
ON Payment_transaction.Inv_ID = Invoice.Inv_ID

Where Pay_type like '%Apple Pay%';
```

```
mysql> SELECT Payment_transaction.Pay_ORDER, Payment_transaction.Pay_type, Invoice.Inv_ID FROM Payment_transaction Join Invoice ON Payment_transaction.Inv_ID = Invoice.Inv_
ID  Where Pay_type like '%Apple Pay%';
+-----------+-----------+--------+
| Pay_ORDER | Pay_type  | Inv_ID |
+-----------+-----------+--------+
|         3 | Apple Pay |     12 |
+-----------+-----------+--------+
1 row in set (0.00 sec)
```

16. Connect the Executive Chef's with their Vendors they collaborate with (Can't add
Chef_ID because it's ambiguous with Executive_Chef.Chef_ID)

```
Select
Vendor_ID,
Vendor_name,
Chef_name

FROM Vendor
Join Executive_Chef
ON Vendor.Chef_ID = Executive_Chef.Chef_ID;
```

```
mysql> Select Vendor_ID, Vendor_name, Chef_name FROM Vendor Join Executive_Chef ON Vendor.Chef_ID = Executive_Chef.Chef_ID;
+-----------+--------------------------+-------------+
| Vendor_ID | Vendor_name              | Chef_name   |
+-----------+--------------------------+-------------+
|       129 | Boston Organic           | Jimmy Drun  |
|       205 | Ocean Spray              | Jimmy Drun  |
|       232 | Heinz                    | Jimmy Drun  |
|       250 | Organic Valley           | Jimmy Drun  |
|       121 | General Mills            | Sasha Drun  |
|       150 | New England Tea & Coffee | Sasha Drun  |
|       222 | One Mighty Mills         | Sasha Drun  |
|       265 | Sun Sweet                | Sasha Drun  |
|       305 | HP Hood LLC              | Sasha Drun  |
|       135 | Mystic Coffee Roaster    | Jean Pierre |
|       211 | Quaker Oats              | Jean Pierre |
|       245 | Farmfoods Market         | Jean Pierre |
|       270 | Eat Just                 | Jean Pierre |
+-----------+--------------------------+-------------+
13 rows in set (0.00 sec)
```

17. List all online customers from Boston using Location

```
Select
Areacode.Location,
Areacode.area_code,
Customer.Cus_name,
Customer.Cus_ID

From Customer
Join Areacode
ON Customer.area_code = Areacode.area_code

Where Location like '%Boston%' AND Cus_online =1; (or you can query
Both online and in-person)
```

```
mysql> Select Areacode.Location, Areacode.area_code, Customer.Cus_name, Customer.Cus_ID From Customer Join Areacode ON Customer.area_code = Areacode.area_code  Where Locati
on like '%Boston%' AND Cus_online =1;
+----------+-----------+-----------+--------+
| Location | area_code | Cus_name  | Cus_ID |
+----------+-----------+-----------+--------+
| Boston   |       716 | Kali Davis |      6 |
+----------+-----------+-----------+--------+
1 row in set (0.01 sec)
```

Conclusions

When I was designing my project, I had to consider every section of the business. I thought about what information would I need if I were a small business (restaurant) owner. So, I consider the online and physical aspect of the business. This project allowed me to think logically and pull valuable information from the Customer information. I also joined different tables by creating meaningful relationships between them. All in all, I enjoyed the process and I've learned so much from this class.

References

Bladoszewski, K. (2020, April 21). How to join 3 tables (or more) in SQL.LearnSQL.com. Retrieved April 26, 2022, from https://learnsql.com/blog/how-to-join-3-tables-or-more-in-sql/#:~:text=%20How%20to%20Join%203%20Tables%20%28or%20More%29,look%20at%20the%20schema%20and%20select...%20More%20

SQL: Where Statement.SQL where clause. (n.d.).Retrieved April 26, 2022, from https://www.w3schools.com/SQL/sql_where.asp