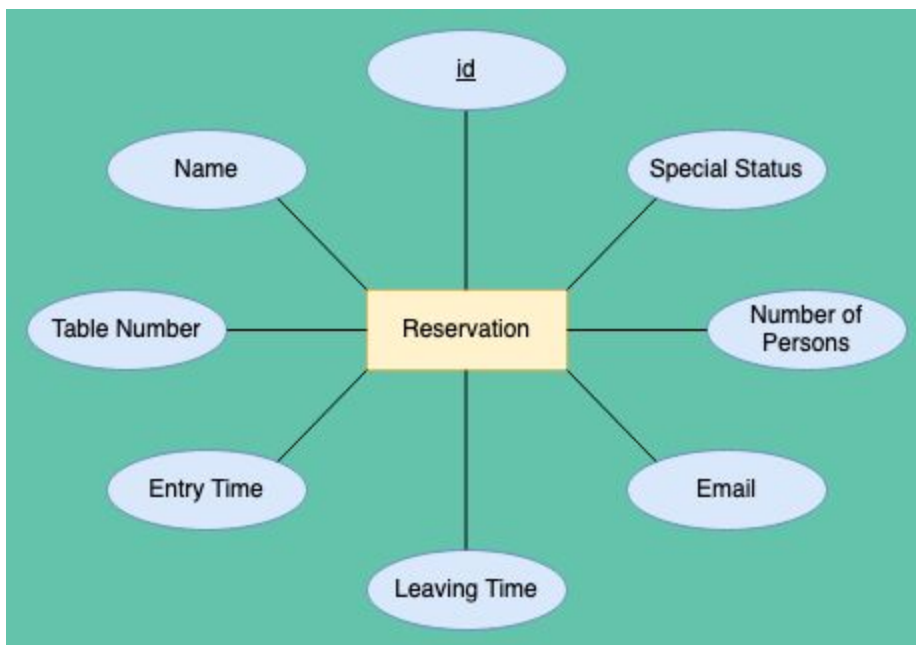DBMS Lab Assignment - 02
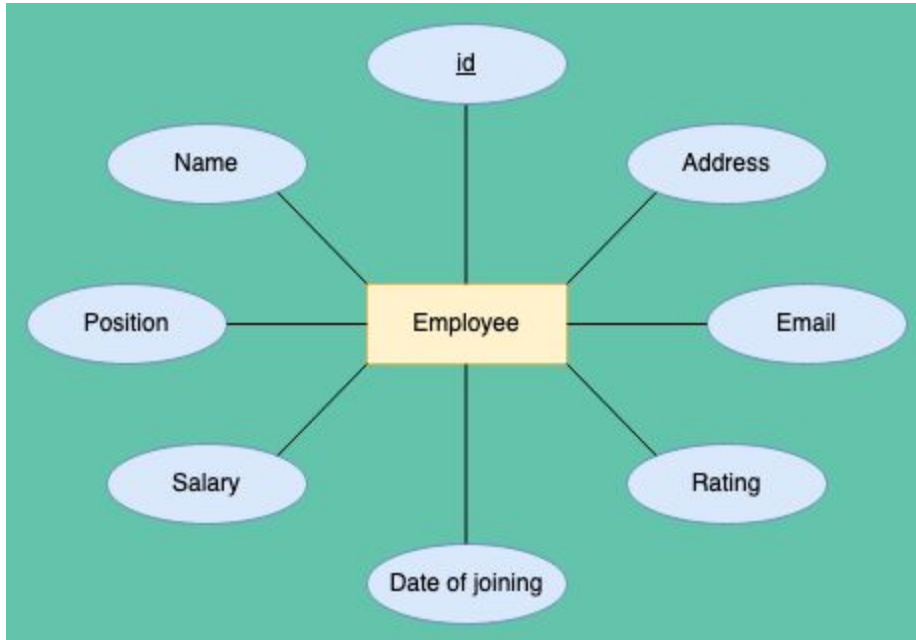
Name: V. Sai Vipul Mohan
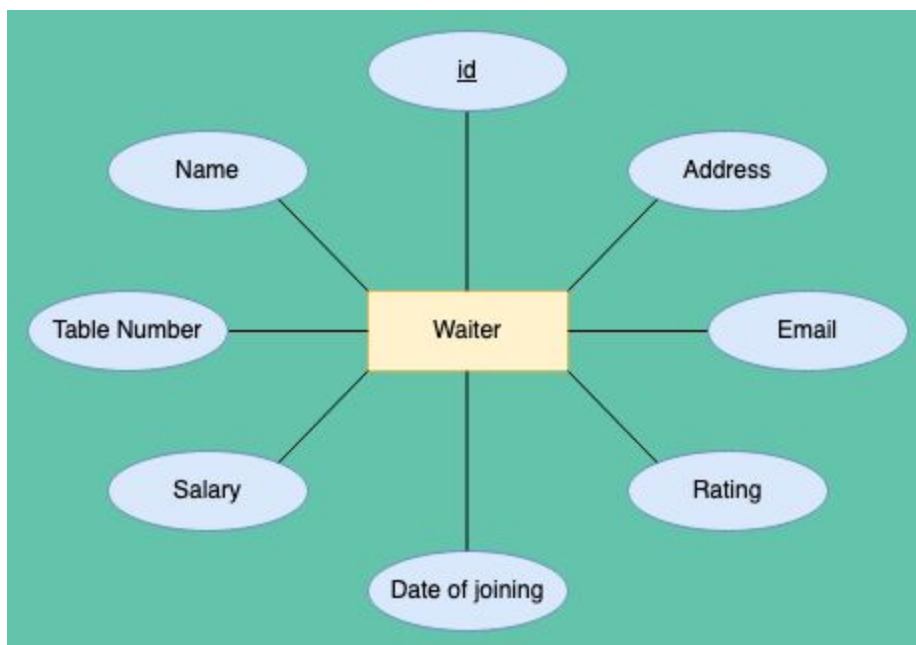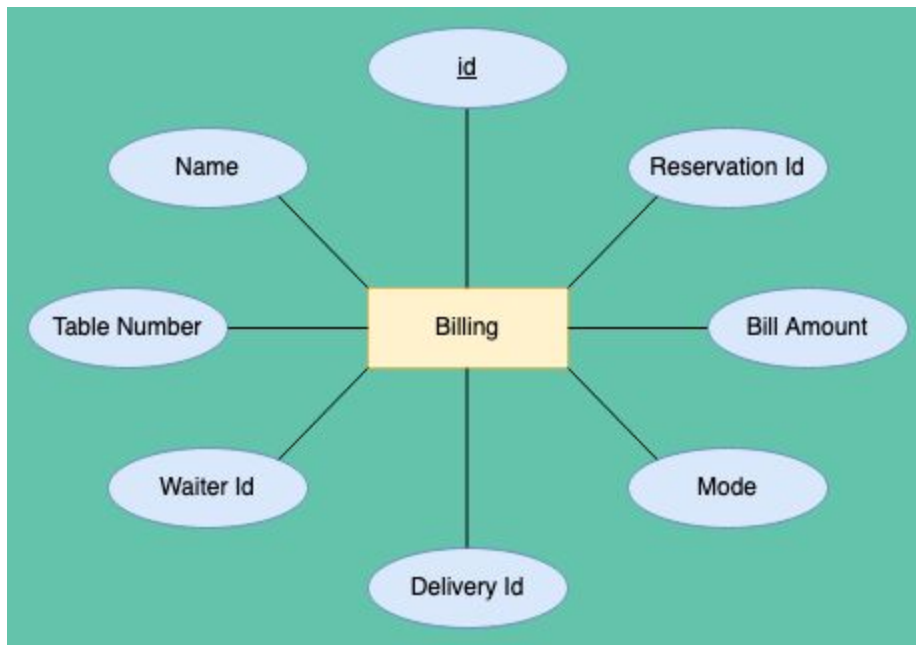Roll.no: 111801045

1. Entity Sets and Relationship Sets:
   Entity Sets:

Billing

- id
- Name
- Reservation Id
- Table Number
- Bill Amount
- Waiter Id
- Mode
- Delivery Id

Waiter

- id
- Name
- Address
- Table Number
- Email
- Salary
- Rating
- Date of joining
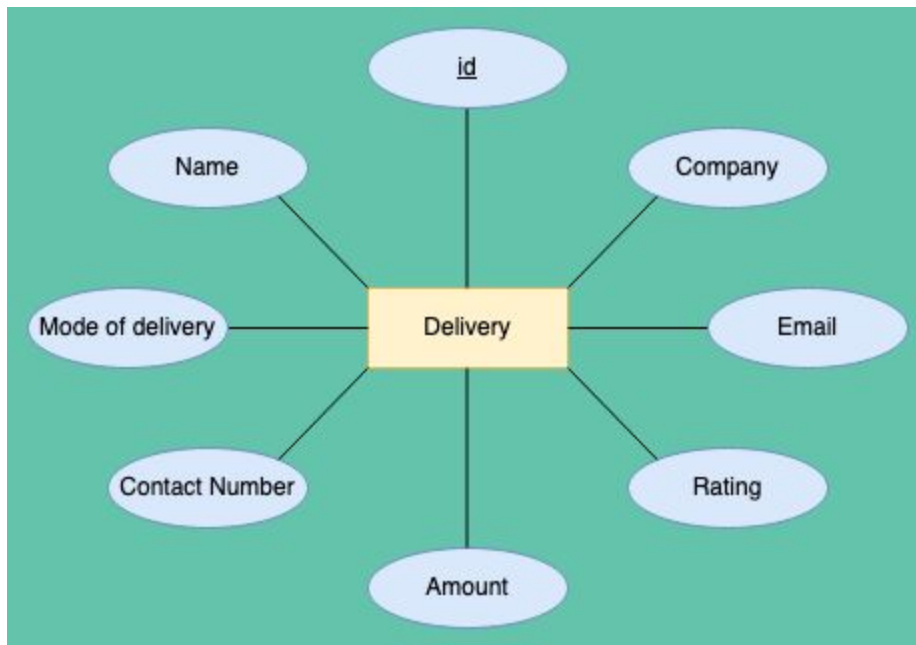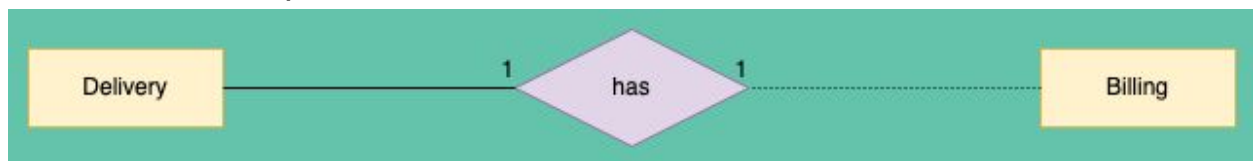
Relationship Sets:

Delivery **has** Billing: one-to-one relationship, mandatory participation of Delivery in the relationship and optional participation of Billing in the relationship.(Every Delivery has Billing but not vice versa)
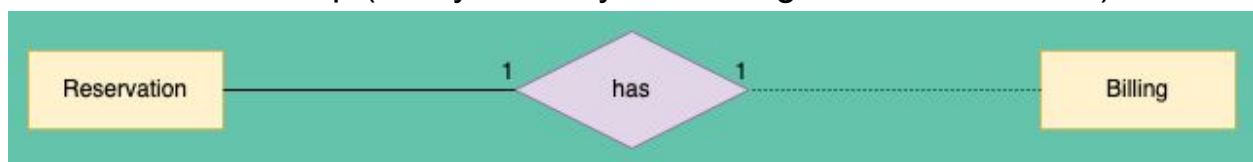
Reservations **has** Billing: one-to-one relationship, mandatory participation of Reservation in the relationship and optional participation of Billing in the relationship.(Every reservations has Billing but not vice versa)

Employee **belongs to** Waiter: one-to-one relationship, optional participation of Employee in the relationship and mandatory participation of Waiter in the relationship.

Waiter **attends** Reservation: one-to-many relationship, mandatory participation of Waiter and Reservation in the relationship. (Single Waiter can attend multiple Reservations)

2. ER Diagram:
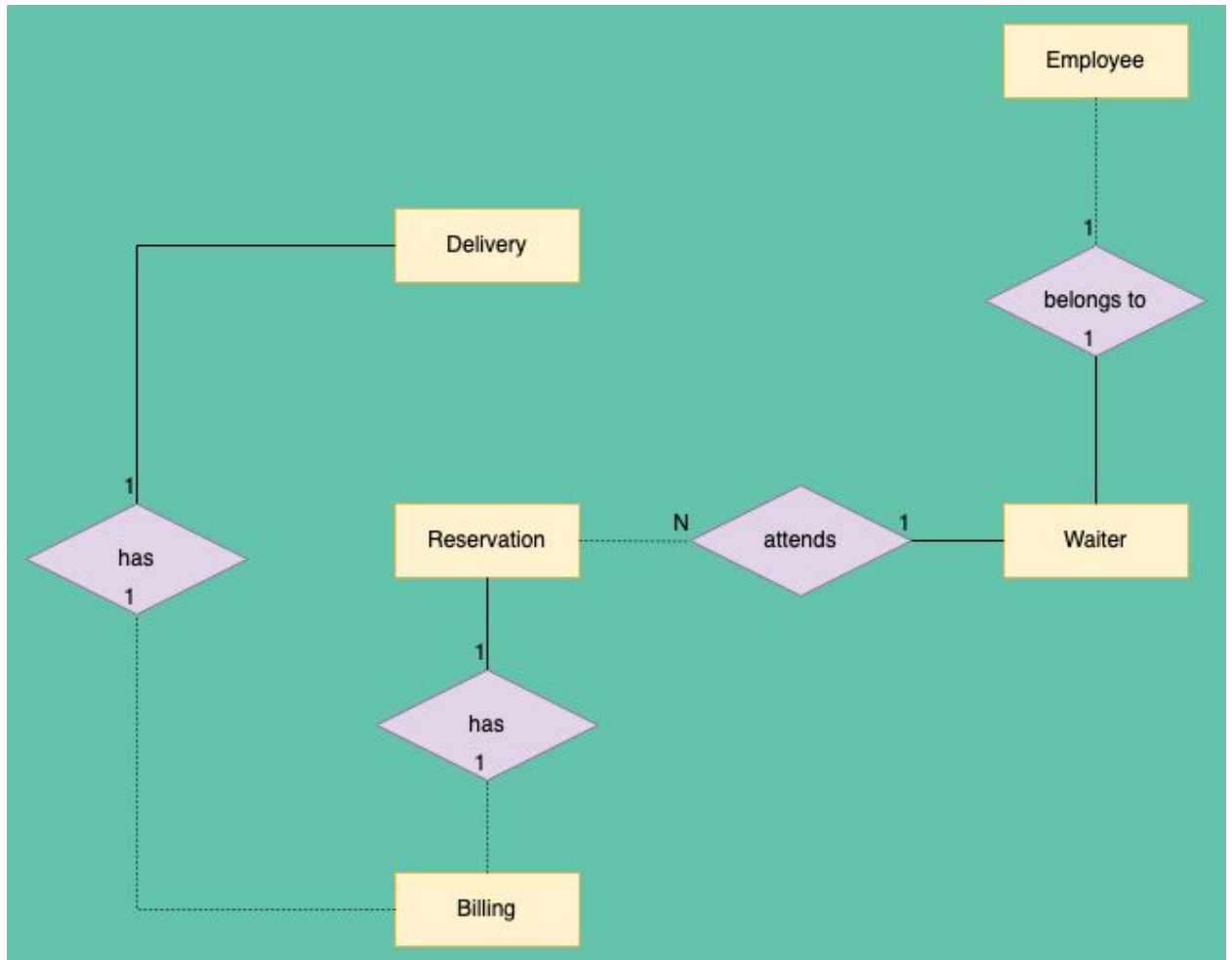
3. Use MariaDB
   a. Create a database Restaurant

```
MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| hospital           |
| information_schema |
| mysql              |
| performance_schema |
| test               |
+--------------------+
5 rows in set (0.004 sec)

MariaDB [(none)]> create database restaurant;
Query OK, 1 row affected (0.001 sec)

MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| hospital           |
| information_schema |
| mysql              |
| performance_schema |
| restaurant         |
| test               |
+--------------------+
6 rows in set (0.001 sec)

MariaDB [(none)]>
```

b. Create all the required tables

```
                     T #1                  ..ding/projects (zsh)              #1                    mariadb (mariadb)                 #2    +
    -> salary float,
    -> date_of_joining datetime,
    -> rating float,
    -> email varchar(50),
    -> address varchar(100));
ERROR 1046 (3D000): No database selected
MariaDB [(none)]> use database restaurant;
ERROR 1049 (42000): Unknown database 'database'
MariaDB [(none)]> use restaurant;
Database changed
MariaDB [restaurant]> create table Employee(
    -> id varchar(255) primary key,
    -> name varchar(50),
    -> position varchar(50),
    -> salary float,
    -> date_of_joining datetime,
    -> rating float,
    -> email varchar(50),
    -> address varchar(100));
Query OK, 0 rows affected (0.035 sec)

MariaDB [restaurant]> show tables;
+-----------------------+
| Tables_in_restaurant  |
+-----------------------+
| Employee              |
+-----------------------+
1 row in set (0.000 sec)

MariaDB [restaurant]>
```

```
MariaDB [restaurant]> show tables;
+----------------------+
| Tables_in_restaurant |
+----------------------+
| Employee             |
+----------------------+
1 row in set (0.000 sec)

MariaDB [restaurant]> create table Reservation(
    -> id varchar(255) primary key,
    -> name varchar(50),
    -> table_number int,
    -> entry_time datetime,
    -> leaving_time datetime,
    -> email varchar(50),
    -> number_of_persons int,
    -> special_status boolean);
Query OK, 0 rows affected (0.027 sec)

MariaDB [restaurant]> show tables;
+----------------------+
| Tables_in_restaurant |
+----------------------+
| Employee             |
| Reservation          |
+----------------------+
2 rows in set (0.001 sec)

MariaDB [restaurant]>
```

```
+----------------------+
| Tables_in_restaurant |
+----------------------+
| Employee             |
| Reservation          |
+----------------------+
2 rows in set (0.001 sec)

MariaDB [restaurant]> create table Billing(
    -> id varchar(255) primary key,
    -> name varchar(50),
    -> table_number int,
    -> waiter_id varchar(255),
    -> delivery_id varchar(255),
    -> mode varchar(20),
    -> bill_amount float,
    -> reservation_id varchar(255));
Query OK, 0 rows affected (0.024 sec)

MariaDB [restaurant]> show tables;
+----------------------+
| Tables_in_restaurant |
+----------------------+
| Billing              |
| Employee             |
| Reservation          |
+----------------------+
3 rows in set (0.000 sec)

MariaDB [restaurant]>
```

```
+--------------------------+
| Billing                  |
| Employee                 |
| Reservation              |
+--------------------------+
3 rows in set (0.001 sec)

MariaDB [restaurant]> create table Waiter(
    -> id varchar(255) primary key,
    -> name varchar(50),
    -> table_number int,
    -> salary float,
    -> date_of_joining datetime,
    -> rating float,
    -> email varchar(50),
    -> address varchar(100));
Query OK, 0 rows affected (0.035 sec)

MariaDB [restaurant]> show tables;
+----------------------+
| Tables_in_restaurant |
+----------------------+
| Billing              |
| Employee             |
| Reservation          |
| Waiter               |
+----------------------+
4 rows in set (0.001 sec)

MariaDB [restaurant]>
```

```
| Employee            |
| Reservation         |
| Waiter              |
+---------------------+
4 rows in set (0.001 sec)

MariaDB [restaurant]> create table Delivery(
    -> id varchar(255) primary key,
    -> name varchar(50),
    -> mode_of_delivery boolean,
    -> contact_number varchar(20),
    -> amount float,
    -> rating float,
    -> email varchar(50),
    -> company varchar(50));
Query OK, 0 rows affected (0.031 sec)

MariaDB [restaurant]> show tables;
+----------------------+
| Tables_in_restaurant |
+----------------------+
| Billing              |
| Delivery             |
| Employee             |
| Reservation          |
| Waiter               |
+----------------------+
5 rows in set (0.001 sec)

MariaDB [restaurant]>
```

```
| Reservation              |
| Waiter                   |
| delivery_to_billing      |
| employee_to_waiter       |
| reservation_to_billing   |
+--------------------------+
8 rows in set (0.001 sec)

MariaDB [restaurant]> create table waiter_to_reservation(
    -> waiter_id varchar(255) not null,
    -> reservation_id varchar(255));
Query OK, 0 rows affected (0.031 sec)

MariaDB [restaurant]> show tables;
+--------------------------+
| Tables_in_restaurant     |
+--------------------------+
| Billing                  |
| Delivery                 |
| Employee                 |
| Reservation              |
| Waiter                   |
| delivery_to_billing      |
| employee_to_waiter       |
| reservation_to_billing   |
| waiter_to_reservation    |
+--------------------------+
9 rows in set (0.001 sec)

MariaDB [restaurant]> ▊
```

```
MariaDB [restaurant]> drop table delivery_to_billing;
Query OK, 0 rows affected (0.007 sec)

MariaDB [restaurant]> drop table employee_to_waiter;
Query OK, 0 rows affected (0.004 sec)

MariaDB [restaurant]> drop table reservation_to_billing;
Query OK, 0 rows affected (0.006 sec)

MariaDB [restaurant]> create table delivery_to_billing(
    -> delivery_id varchar(255) primary key not null,
    -> billing_id varchar(255));
Query OK, 0 rows affected (0.029 sec)

MariaDB [restaurant]> show tables;
+------------------------+
| Tables_in_restaurant   |
+------------------------+
| Billing                |
| Delivery               |
| Employee               |
| Reservation            |
| Waiter                 |
| delivery_to_billing    |
| waiter_to_reservation  |
+------------------------+
7 rows in set (0.001 sec)

MariaDB [restaurant]>
```

```
| Delivery            |
| Employee            |
| Reservation         |
| Waiter              |
| delivery_to_billing |
| waiter_to_reservation |
+-------------------------+
7 rows in set (0.001 sec)

MariaDB [restaurant]> create table employee_to_waiter(
    -> employee_id varchar(255),
    -> waiter_id varchar(255) primary key not null);
Query OK, 0 rows affected (0.022 sec)

MariaDB [restaurant]> show tables;
+-------------------------+
| Tables_in_restaurant    |
+-------------------------+
| Billing                 |
| Delivery                |
| Employee                |
| Reservation             |
| Waiter                  |
| delivery_to_billing     |
| employee_to_waiter      |
| waiter_to_reservation   |
+-------------------------+
8 rows in set (0.001 sec)

MariaDB [restaurant]>
```

```
| Delivery            |
| Employee            |
| Reservation         |
| Waiter              |
| delivery_to_billing |
| employee_to_waiter  |
+---------------------+
7 rows in set (0.001 sec)

MariaDB [restaurant]> create table reservation_to_billing(
    -> reservation_id varchar(255) not null,
    -> billing_id varchar(255));
Query OK, 0 rows affected (0.028 sec)

MariaDB [restaurant]> show tables;
+-----------------------+
| Tables_in_restaurant  |
+-----------------------+
| Billing               |
| Delivery              |
| Employee              |
| Reservation           |
| Waiter                |
| delivery_to_billing   |
| employee_to_waiter    |
| reservation_to_billing|
+-----------------------+
8 rows in set (0.001 sec)

MariaDB [restaurant]>
```

c. Show all tables in the database

```
+------------------------+
| Billing                |
| Delivery               |
| Employee               |
| Reservation            |
| Waiter                 |
| delivery_to_billing    |
| employee_to_waiter     |
| reservation_to_billing |
| waiter_to_reservation  |
+------------------------+
9 rows in set (0.004 sec)

MariaDB [restaurant]> show tables;
+------------------------+
| Tables_in_restaurant   |
+------------------------+
| Billing                |
| Delivery               |
| Employee               |
| Reservation            |
| Waiter                 |
| delivery_to_billing    |
| employee_to_waiter     |
| reservation_to_billing |
| waiter_to_reservation  |
+------------------------+
9 rows in set (0.003 sec)

MariaDB [restaurant]>
```

d. Show structure of the tables created in question 3(b)

```
MariaDB [restaurant]> show tables;
+-----------------------+
| Tables_in_restaurant |
+-----------------------+
| Billing               |
| Delivery              |
| Employee              |
| Reservation           |
| Waiter                |
+-----------------------+
5 rows in set (0.001 sec)

MariaDB [restaurant]>
MariaDB [restaurant]>
MariaDB [restaurant]> describe Billing;
+-----------------+---------------+------+-----+---------+-------+
| Field           | Type          | Null | Key | Default | Extra |
+-----------------+---------------+------+-----+---------+-------+
| id              | varchar(255)  | NO   | PRI | NULL    |       |
| name            | varchar(50)   | YES  |     | NULL    |       |
| table_number    | int(11)       | YES  |     | NULL    |       |
| waiter_id       | varchar(255)  | YES  |     | NULL    |       |
| delivery_id     | varchar(255)  | YES  |     | NULL    |       |
| mode            | varchar(20)   | YES  |     | NULL    |       |
| bill_amount     | float         | YES  |     | NULL    |       |
| reservation_id  | varchar(255)  | YES  |     | NULL    |       |
+-----------------+---------------+------+-----+---------+-------+
8 rows in set (0.008 sec)

MariaDB [restaurant]>
```

```
MariaDB [restaurant]> describe Billing;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| id             | varchar(255) | NO   | PRI | NULL    |       |
| name           | varchar(50)  | YES  |     | NULL    |       |
| table_number   | int(11)      | YES  |     | NULL    |       |
| waiter_id      | varchar(255) | YES  |     | NULL    |       |
| delivery_id    | varchar(255) | YES  |     | NULL    |       |
| mode           | varchar(20)  | YES  |     | NULL    |       |
| bill_amount    | float        | YES  |     | NULL    |       |
| reservation_id | varchar(255) | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
8 rows in set (0.008 sec)

MariaDB [restaurant]> describe delivery;
+------------------+--------------+------+-----+---------+-------+
| Field            | Type         | Null | Key | Default | Extra |
+------------------+--------------+------+-----+---------+-------+
| id               | varchar(255) | NO   | PRI | NULL    |       |
| name             | varchar(50)  | YES  |     | NULL    |       |
| mode_of_delivery | tinyint(1)   | YES  |     | NULL    |       |
| contact_number   | varchar(20)  | YES  |     | NULL    |       |
| amount           | float        | YES  |     | NULL    |       |
| rating           | float        | YES  |     | NULL    |       |
| email            | varchar(50)  | YES  |     | NULL    |       |
| company          | varchar(50)  | YES  |     | NULL    |       |
+------------------+--------------+------+-----+---------+-------+
8 rows in set (0.009 sec)
```

```
MariaDB [restaurant]> describe delivery;
+------------------+--------------+------+-----+---------+-------+
| Field            | Type         | Null | Key | Default | Extra |
+------------------+--------------+------+-----+---------+-------+
| id               | varchar(255) | NO   | PRI | NULL    |       |
| name             | varchar(50)  | YES  |     | NULL    |       |
| mode_of_delivery | tinyint(1)   | YES  |     | NULL    |       |
| contact_number   | varchar(20)  | YES  |     | NULL    |       |
| amount           | float        | YES  |     | NULL    |       |
| rating           | float        | YES  |     | NULL    |       |
| email            | varchar(50)  | YES  |     | NULL    |       |
| company          | varchar(50)  | YES  |     | NULL    |       |
+------------------+--------------+------+-----+---------+-------+
8 rows in set (0.009 sec)

MariaDB [restaurant]> describe Employee;
+-----------------+--------------+------+-----+---------+-------+
| Field           | Type         | Null | Key | Default | Extra |
+-----------------+--------------+------+-----+---------+-------+
| id              | varchar(255) | NO   | PRI | NULL    |       |
| name            | varchar(50)  | YES  |     | NULL    |       |
| position        | varchar(50)  | YES  |     | NULL    |       |
| salary          | float        | YES  |     | NULL    |       |
| date_of_joining | datetime     | YES  |     | NULL    |       |
| rating          | float        | YES  |     | NULL    |       |
| email           | varchar(50)  | YES  |     | NULL    |       |
| address         | varchar(100) | YES  |     | NULL    |       |
+-----------------+--------------+------+-----+---------+-------+
8 rows in set (0.006 sec)
```

```
+-----------------+--------------+------+-----+---------+-------+
| id              | varchar(255) | NO   | PRI | NULL    |       |
| name            | varchar(50)  | YES  |     | NULL    |       |
| position        | varchar(50)  | YES  |     | NULL    |       |
| salary          | float        | YES  |     | NULL    |       |
| date_of_joining | datetime     | YES  |     | NULL    |       |
| rating          | float        | YES  |     | NULL    |       |
| email           | varchar(50)  | YES  |     | NULL    |       |
| address         | varchar(100) | YES  |     | NULL    |       |
+-----------------+--------------+------+-----+---------+-------+
8 rows in set (0.006 sec)

MariaDB [restaurant]>
MariaDB [restaurant]>
MariaDB [restaurant]> describe Reservation;
+-------------------+--------------+------+-----+---------+-------+
| Field             | Type         | Null | Key | Default | Extra |
+-------------------+--------------+------+-----+---------+-------+
| id                | varchar(255) | NO   | PRI | NULL    |       |
| name              | varchar(50)  | YES  |     | NULL    |       |
| table_number      | int(11)      | YES  |     | NULL    |       |
| entry_time        | datetime     | YES  |     | NULL    |       |
| leaving_time      | datetime     | YES  |     | NULL    |       |
| email             | varchar(50)  | YES  |     | NULL    |       |
| number_of_persons | int(11)      | YES  |     | NULL    |       |
| special_status    | tinyint(1)   | YES  |     | NULL    |       |
+-------------------+--------------+------+-----+---------+-------+
8 rows in set (0.008 sec)

MariaDB [restaurant]>
```

```
+--------------------+--------------+------+-----+---------+-------+
| Field              | Type         | Null | Key | Default | Extra |
+--------------------+--------------+------+-----+---------+-------+
| id                 | varchar(255) | NO   | PRI | NULL    |       |
| name               | varchar(50)  | YES  |     | NULL    |       |
| table_number       | int(11)      | YES  |     | NULL    |       |
| entry_time         | datetime     | YES  |     | NULL    |       |
| leaving_time       | datetime     | YES  |     | NULL    |       |
| email              | varchar(50)  | YES  |     | NULL    |       |
| number_of_persons  | int(11)      | YES  |     | NULL    |       |
| special_status     | tinyint(1)   | YES  |     | NULL    |       |
+--------------------+--------------+------+-----+---------+-------+
8 rows in set (0.008 sec)

MariaDB [restaurant]> describe Waiter;
+-----------------+--------------+------+-----+---------+-------+
| Field           | Type         | Null | Key | Default | Extra |
+-----------------+--------------+------+-----+---------+-------+
| id              | varchar(255) | NO   | PRI | NULL    |       |
| name            | varchar(50)  | YES  |     | NULL    |       |
| table_number    | int(11)      | YES  |     | NULL    |       |
| salary          | float        | YES  |     | NULL    |       |
| date_of_joining | datetime     | YES  |     | NULL    |       |
| rating          | float        | YES  |     | NULL    |       |
| email           | varchar(50)  | YES  |     | NULL    |       |
| address         | varchar(100) | YES  |     | NULL    |       |
+-----------------+--------------+------+-----+---------+-------+
8 rows in set (0.008 sec)

MariaDB [restaurant]>
```

```
| waiter_to_reservation  |
+---------------------------+
9 rows in set (0.004 sec)

MariaDB [restaurant]> show tables;
+---------------------------+
| Tables_in_restaurant      |
+---------------------------+
| Billing                   |
| Delivery                  |
| Employee                  |
| Reservation               |
| Waiter                    |
| delivery_to_billing       |
| employee_to_waiter        |
| reservation_to_billing    |
| waiter_to_reservation     |
+---------------------------+
9 rows in set (0.003 sec)

MariaDB [restaurant]> describe delivery_to_billing;
+-------------+--------------+------+-----+---------+-------+
| Field       | Type         | Null | Key | Default | Extra |
+-------------+--------------+------+-----+---------+-------+
| delivery_id | varchar(255) | NO   | PRI | NULL    |       |
| billing_id  | varchar(255) | YES  |     | NULL    |       |
+-------------+--------------+------+-----+---------+-------+
2 rows in set (0.011 sec)

MariaDB [restaurant]>
```

```
| Delivery              |
| Employee              |
| Reservation           |
| Waiter                |
| delivery_to_billing   |
| employee_to_waiter    |
| reservation_to_billing |
| waiter_to_reservation |
+-----------------------+
9 rows in set (0.003 sec)

MariaDB [restaurant]> describe delivery_to_billing;
+-------------+--------------+------+-----+---------+-------+
| Field       | Type         | Null | Key | Default | Extra |
+-------------+--------------+------+-----+---------+-------+
| delivery_id | varchar(255) | NO   | PRI | NULL    |       |
| billing_id  | varchar(255) | YES  |     | NULL    |       |
+-------------+--------------+------+-----+---------+-------+
2 rows in set (0.011 sec)

MariaDB [restaurant]> describe employee_to_waiter;
+-------------+--------------+------+-----+---------+-------+
| Field       | Type         | Null | Key | Default | Extra |
+-------------+--------------+------+-----+---------+-------+
| employee_id | varchar(255) | YES  |     | NULL    |       |
| waiter_id   | varchar(255) | NO   | PRI | NULL    |       |
+-------------+--------------+------+-----+---------+-------+
2 rows in set (0.008 sec)

MariaDB [restaurant]> 
```

```
9 rows in set (0.003 sec)

MariaDB [restaurant]> describe delivery_to_billing;
+-------------+--------------+------+-----+---------+-------+
| Field       | Type         | Null | Key | Default | Extra |
+-------------+--------------+------+-----+---------+-------+
| delivery_id | varchar(255) | NO   | PRI | NULL    |       |
| billing_id  | varchar(255) | YES  |     | NULL    |       |
+-------------+--------------+------+-----+---------+-------+
2 rows in set (0.011 sec)

MariaDB [restaurant]> describe employee_to_waiter;
+-------------+--------------+------+-----+---------+-------+
| Field       | Type         | Null | Key | Default | Extra |
+-------------+--------------+------+-----+---------+-------+
| employee_id | varchar(255) | YES  |     | NULL    |       |
| waiter_id   | varchar(255) | NO   | PRI | NULL    |       |
+-------------+--------------+------+-----+---------+-------+
2 rows in set (0.008 sec)

MariaDB [restaurant]> describe reservation_to_billing;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| reservation_id | varchar(255) | NO   | PRI | NULL    |       |
| billing_id     | varchar(255) | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
2 rows in set (0.011 sec)

MariaDB [restaurant]>
```

```
2 rows in set (0.011 sec)

MariaDB [restaurant]> describe employee_to_waiter;
+-------------+--------------+------+-----+---------+-------+
| Field       | Type         | Null | Key | Default | Extra |
+-------------+--------------+------+-----+---------+-------+
| employee_id | varchar(255) | YES  |     | NULL    |       |
| waiter_id   | varchar(255) | NO   | PRI | NULL    |       |
+-------------+--------------+------+-----+---------+-------+
2 rows in set (0.008 sec)

MariaDB [restaurant]> describe reservation_to_billing;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| reservation_id | varchar(255) | NO   | PRI | NULL    |       |
| billing_id     | varchar(255) | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
2 rows in set (0.011 sec)

MariaDB [restaurant]> describe waiter_to_reservation;
+----------------+--------------+------+-----+---------+-------+
| Field          | Type         | Null | Key | Default | Extra |
+----------------+--------------+------+-----+---------+-------+
| waiter_id      | varchar(255) | NO   |     | NULL    |       |
| reservation_id | varchar(255) | YES  |     | NULL    |       |
+----------------+--------------+------+-----+---------+-------+
2 rows in set (0.005 sec)

MariaDB [restaurant]>
```