

Online Restaurant Booking Platform

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A. Requirements Document

Project Description

The online restaurant booking platform will allow customers to search, view information, and make reservations at restaurants. Customers can filter restaurants by location, cuisine, budget, etc. and view restaurant details including menu, reviews, location. Customers can create accounts to make and manage reservations online.

The system will also allow restaurant owners/staff to manage their business information and availability. They can add menu items, update hours of operation, view and respond to customer reviews, and monitor upcoming reservations.

Business Rules

- Customers must create an account to make reservations
- Reservations require date, time, party size, and contact information
- Customers can write one review per restaurant
- Reviews require rating (1-5 stars) and optional comment
- Restaurants can add/update menu items with name, description, price
- Menu items can be categorized by cuisine type
- Restaurants set available reservation times/dates

Nouns:

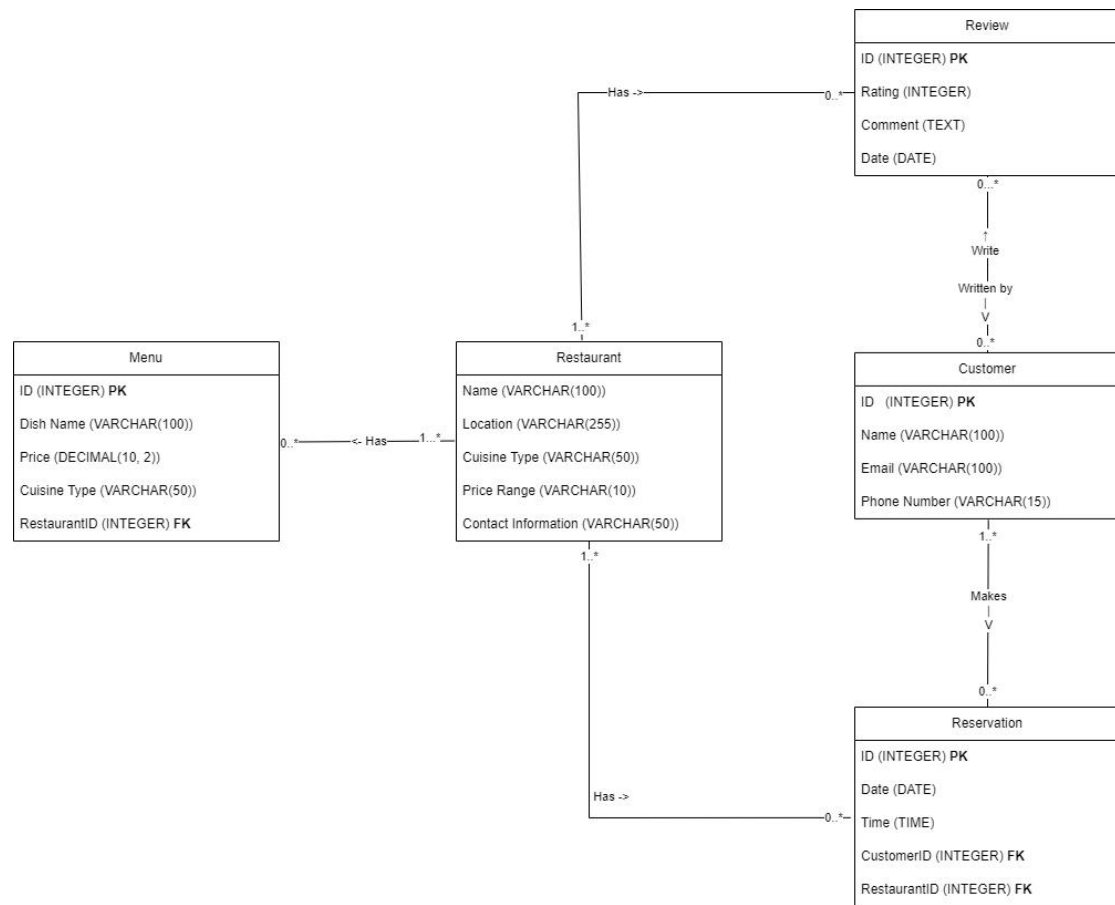
Customer, Restaurant, Reservation, Review, Menu, Menu Item, Account

Verbs:

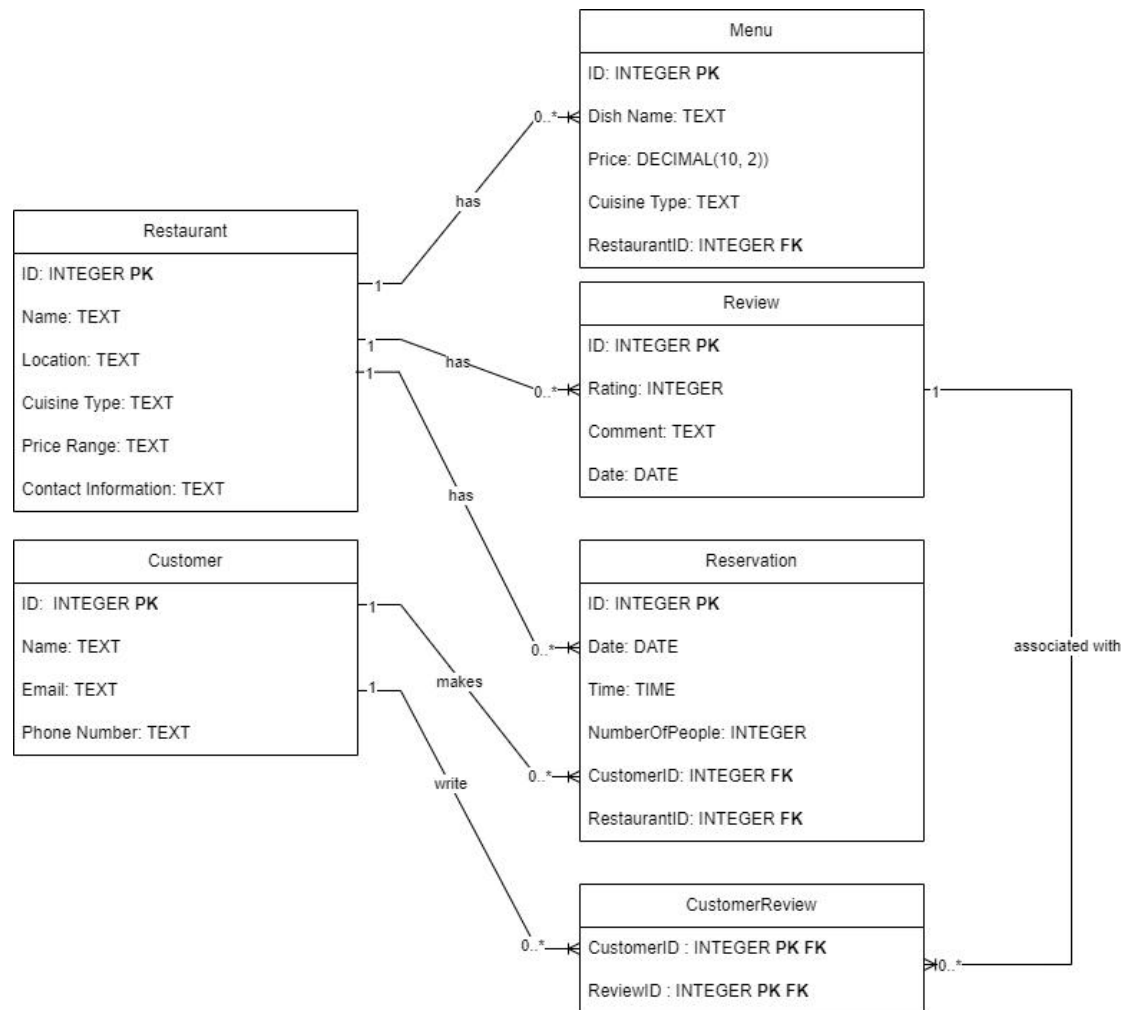
Search, View, Filter, Create, Make, Manage, Add, Update, Monitor, Set

This covers a high-level description of the online restaurant booking platform, key business rules, and identifies some initial nouns and verbs that will inform the data model. Let me know if you would like me to expand or modify this draft task 1 document in any way.

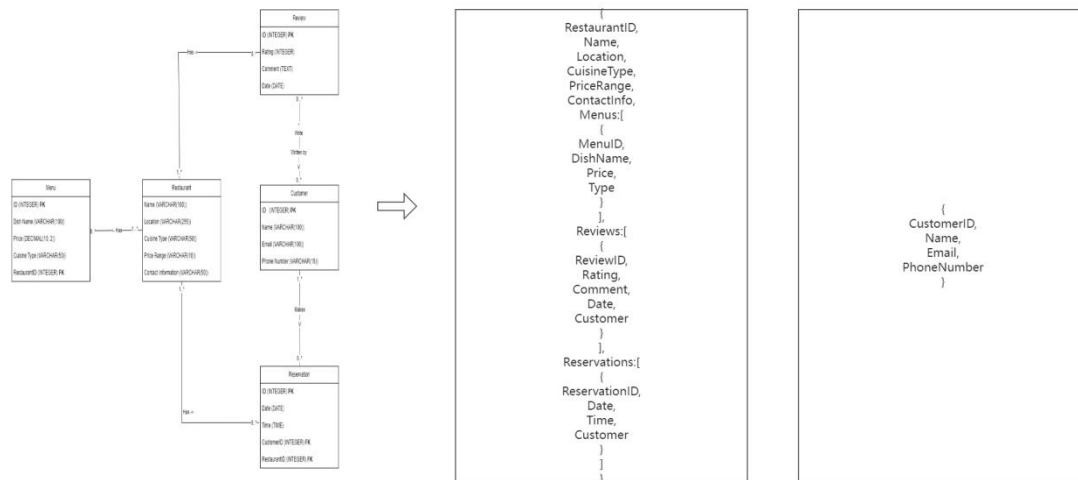
B. UML Class Diagram



C. ERD



D. Hierarchical tables



E. Json examples for the main collections

Restaurants:

```

{
  "RestaurantID": 1,
  "Name": "Lee Ltd",
  "Location": "Unit 5196 Box 3034, DPO AP 65654",
  "CuisineType": "Chinese",
  "PriceRange": "$",
  "ContactInfo": "647.745.6154x50558",
  "Menus": [
    {
      "MenuID": 101,
      "DishName": "right",
      "Price": 27.94,
      "Type": "Chinese"
    },
    {
      "MenuID": 102,
      "DishName": "Gongbaojiding",
      "Price": 15.32,
      "Type": "Chinese"
    }
  ],
  "Reservations": [
    {

```

```

    "ReservationID": 10001,
    "Date": "2021-02-23",
    "Time": "00:22:27",
    "Customer": {
      "CustomerID": 1001
    }
  },
  {
    "ReservationID": 10002,
    "Date": "2022-03-11",
    "Time": "10:33:33",
    "Customer": {
      "CustomerID": 1004
    }
  }
]
},
{
  RestaurantID: 2,
  Name: "Taylor-Lopez",
  Location: "2989 Brian Inlet Apt. 846, Danachester, CO 08758",
  CuisineType: "American",
  PriceRange: "$",
  ContactInfo: "+1-373-555-8240x3163",
  Menus:[
    {
      MenuID: 104,
      DishName: "fish",
      Price: 50.33,
      Type: "American"
    },
    {
      MenuID: 105,
      DishName: "chips",
      Price: 2.12,
      Type: "American"
    }
  ],
  Reviews:[
    {
      ReviewID: 11,
      Rating: 5,

```

```

        Comment:"Health everybody open. What grow some collection
number. People Congress writer political each total partner.",
        Date:"2021-08-05",
        Customer: {
            CustomerID: 1004
        }
    },
    Reservations:[
        {
            ReservationID: 10005,
            Date: "2022-12-05",
            Time: "09:10:25",
            Customer: {
                CustomerID: 1005
            }
        }
    ]
}

```

Customer:

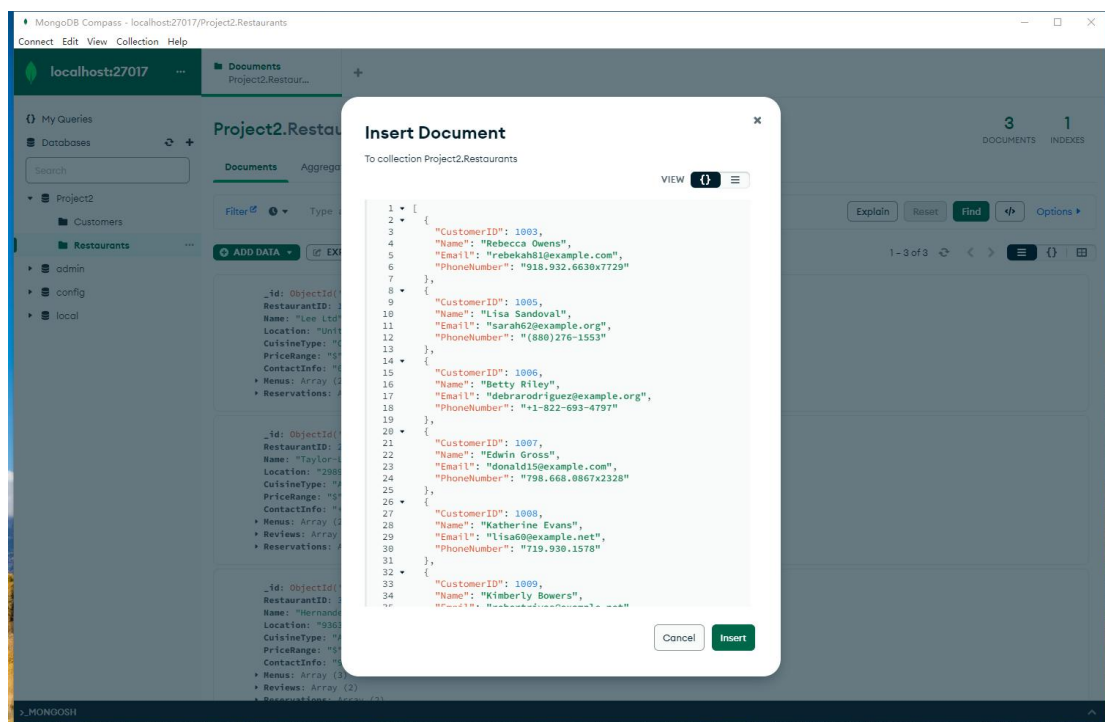
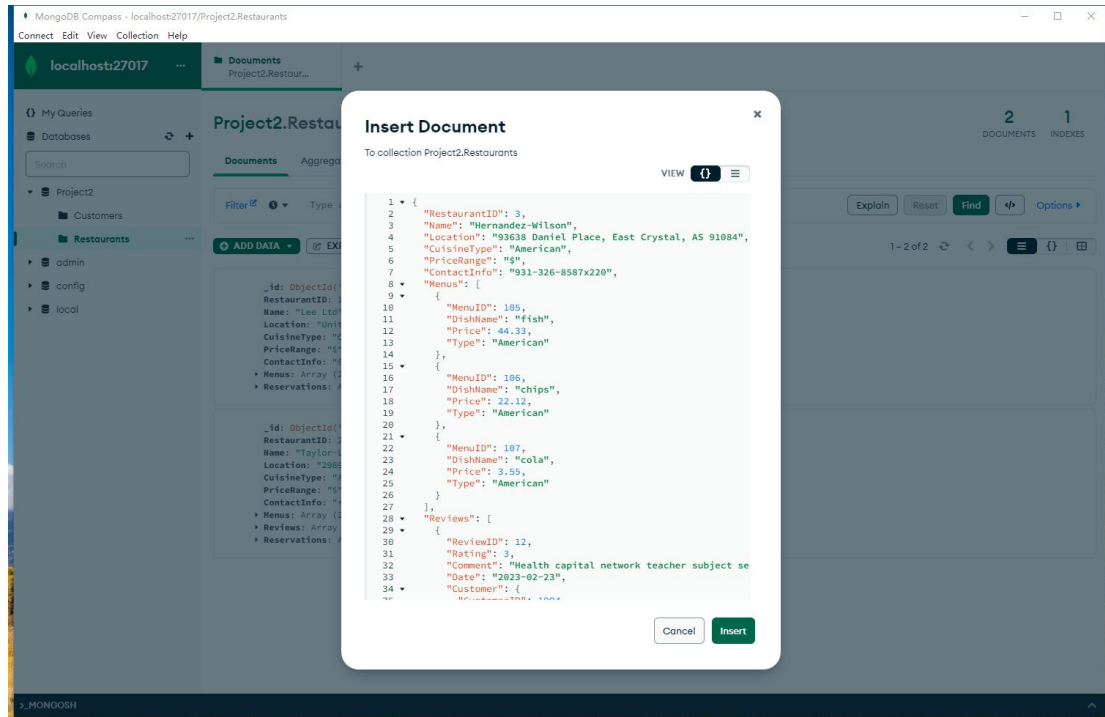
```

{
    CustomerID: 1001,
    Name: "Angela Wheeler",
    Email: "crawfordcarl@example.com",
    PhoneNumber: "001-383-300-2860x8799"
},
{
    CustomerID: 1002,
    Name: "Jennifer Tucker",
    Email: "carl31@example.org",
    PhoneNumber: "(714)223-7899x444"
},
{
    CustomerID: 1004,
    Name: "Courtney Ramirez",
    Email: "ellischristine@example.net",
    PhoneNumber: "+1-245-944-9136x510"
}

```

F. Populate the tables with data

Use compass to populate data(see restaurants.json and customers.json)



G. Five queries

Query 1: Contain and aggregation

```
db.restaurants.find( {  
  
  $and: [  
  
    { CuisineType: { $eq: "Chinese" } },  
  
    { Menu:{$size:2} }  
  
  ]  
  
});
```

The screenshot shows the MongoDB Compass interface for a database named 'project2' and a collection named 'Restaurants'. The 'Documents' tab is active. A query is entered in the filter field: `{ $and: [{ CuisineType: { $eq: "Chinese" } }, { Menu: { $size: 2 } }] }`. The results pane shows 10 documents and 1 index. The first document is expanded, showing the following fields: `_id` (ObjectId), `RestaurantID` (1), `Name` ("Lee Ltd"), `Location` ("Unit 5196 Box 3834, DPO AP 65654"), `CuisineType` ("Chinese"), `PriceRange` ("\$"), `ContactInfo` ("647.745.6154x50558"), `Menu` (Array), and `Reservations` (Array).

Query 2: Contain a complex search

```
db.restaurants.find( {  
  
  $or:[  
  
    {  
  
      $and: [  
  
        { CuisineType: { $eq: "American" } },
```

```

    { $or: [ {Reviews:{$size:2}}, {Reviews:{$size:1}}] }
  ]
},
{
  Reviews: {$elemMatch: {Rating: 1}}
}
]

});

```

project2.Restaurants 10 DOCUMENTS 1 INDEXES

Documents Aggregations Schema Explain Plan Indexes Validation

Filter

```

{
  $or: [
    {
      Reviews: { $size: 2 }
    },
    {
      Reviews: { $size: 1 }
    }
  ],
  $elemMatch: {
    Rating: 1
  }
}

```

Reset Find More Options

ADD DATA EXPORT COLLECTION 1 - 2 of 2

Document 1:

```

_id: ObjectId('655f444650e31860daf8ba76')
RestaurantID: 2
Name: "Taylor-Lopez"
Location: "2989 Brian Inlet Apt. 846, Danachester, CO 80758"
CuisineType: "American"
PriceRange: "$"
ContactInfo: "+1-373-555-8240x3163"
Menus: Array
Reviews: Array
Reservations: Array

```

Document 2:

```

_id: ObjectId('655f444650e31860daf8ba77')
RestaurantID: 3
Name: "Hernandez-Wilson"
Location: "93638 Daniel Place, East Crystal, AS 91084"
CuisineType: "American"
PriceRange: "$"
ContactInfo: "931-326-8587x220"
Menus: Array
Reviews: Array
Reservations: Array

```

Query 3: Counting documents for an specific user

```

db.Restaurants.find( {
  "Reservations": {

```

```

    $elemMatch:{
      "Customer": {
        "CustomerID": 1005
      }
    }
  }
} ).count();

```

Project2.Restaurants 17 DOCUMENTS 1 INDEXES

Documents Aggregations Schema Indexes Validation

Filter { "Reservations": { \$elemMatch:{ "Customer": { "CustomerID": 1005 } } } } [Generate query](#) [Explain](#) [Reset](#) [Find](#) [Options](#)

[+ ADD DATA](#) [EXPORT DATA](#) 1 - 2 of 2

```

_id: ObjectId('655eec1bd15cb3bc787e2ac2')
RestaurantID: 2
Name: "Taylor-Lopez"
Location: "2989 Brian Inlet Apt. 846, Danachester, CO 80758"
CuisineType: "American"
PriceRange: "$"
ContactInfo: "+1-373-555-8240x3163"
Menus: Array (2)
Reviews: Array (1)
Reservations: Array (1)

```

```

_id: ObjectId('655ff3a7a623a3e30cf4172b')
RestaurantID: 9
Name: "Williams, Murphy and Hardy"
Location: "3006 Edward Green Apt. 288, Joelmouth, FL 61630"
CuisineType: "Indian"
PriceRange: "$$$"
ContactInfo: "(705)210-4966"
Menus: Array (2)
Reviews: Array (2)
Reservations: Array (2)

```

Query 4: Updating a document based on a query parameter

```

db.Restaurants.updateOne(
  {
    "RestaurantID": 10,
  },

```

```
{
  $push: {
    "Menus": {
      "MenuID": 120,
      "DishName": "fish",
      "Price": 13.33,
      "Type": "Indian"
    }
  }
}
);
```

>_MONGOSH

```
> db.Restaurants.updateOne(  
  {  
    "RestaurantID": 10,  
  },  
  {  
    $push: {  
      "Menus": {  
        "MenuID": 120,  
        "DishName": "fish",  
        "Price": 13.33,  
        "Type": "Indian"  
      }  
    }  
  }  
)  
< {  
  acknowledged: true,  
  insertedId: null,  
  matchedCount: 1,  
  modifiedCount: 1,  
  upsertedCount: 0  
}  
Project2>
```

Query 5: Use \$group

```
db.Restaurants.aggregate([  
  {  
    "$unwind": "$Reviews"  
  },  
  {  
    $group : {
```

```

        _id:{
            "Name" : "$Name"
        },
        avg_age : {$avg : "$Reviews.Rating"}
    }
}

]);

```

```

>_MONGOSH
    $unwind : $reviews
  },
  {
    $group : {
      _id: {
        "Name" : "$Name"
      },
      avg_age : {$avg : "$Reviews.Rating"}
    }
  }
])
< {
  _id: {
    Name: 'Taylor-Lopez'
  },
  avg_age: 5
}
{
  _id: {
    Name: 'Johnson Ltd'
  },
  avg_age: 4.5
}

```

H. Application Demo

How to run the app

1. Enter the following command in the terminal:

```
cd Application
```

```
node ./app.js
```

2. Open <http://localhost:3000> in your browser.

Default Page:



Welcome to the Restaurant Review App

[View Restaurants](#)

[Add a Restaurant](#)

[View Customers](#)

View all restaurants:



Restaurants

- Lee Ltd - Unit 5196 Box 3034, DPO AP 65654 [Update](#) [Delete](#)
- Taylor-Lopez - 2989 Brian Inlet Apt. 846, Danachester, CO 08758 [Update](#) [Delete](#)
- Hernandez-Wilson - 93638 Daniel Place, East Crystal, AS 91084 [Update](#) [Delete](#)
- Bailey and Sons - 72748 Clark Avenue Apt. 666, Davisshire, NE 11106 [Update](#) [Delete](#)
- Brown-Calderon - 72748 Clark Avenue Apt. 666, Davisshire, NE 11106 [Update](#) [Delete](#)
- Waters-Bennett - 012 Sydney Underpass Suite 222, East Eric, WI 46870 [Update](#) [Delete](#)
- Waters-Bennett - 012 Sydney Underpass Suite 222, East Eric, WI 46870 [Update](#) [Delete](#)
- Edwards-Burton - 216 Pierce Center, East Matthewberg, CO 78907 [Update](#) [Delete](#)
- Williams, Murphy and Hardy - 3006 Edward Green Apt. 288, Joelmouth, FL 61630 [Update](#) [Delete](#)
- Johnson Ltd - 51074 Heather Bridge, Herrerachester, DE 50498 [Update](#) [Delete](#)

[Back to Home](#)

View all customers:

Customers

- Name: Angela Wheeler - Email: crawfordcarl@example.com [Delete](#)
- Name: Jennifer Tucker - Email: carl31@example.org [Delete](#)
- Name: Courtney Ramirez - Email: ellischristine@example.net [Delete](#)
- Name: Rebecca Owens - Email: rebekah81@example.com [Delete](#)
- Name: Lisa Sandoval - Email: sarah62@example.org [Delete](#)
- Name: Betty Riley - Email: debrarodriguez@example.org [Delete](#)
- Name: Edwin Gross - Email: donald15@example.com [Delete](#)
- Name: Katherine Evans - Email: lisa60@example.net [Delete](#)
- Name: Kimberly Bowers - Email: robertrivas@example.net [Delete](#)
- Name: Erica Johnson - Email: david27@example.com [Delete](#)

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Delete a restaurant:

Restaurants

- Lee Ltd - Unit 5196 Box 3034, DPO AP 65654 [Update](#) [Delete](#)
- Taylor-Lopez - 2989 Brian Inlet Apt. 846, Danachester, CO 08758 [Update](#) [Delete](#)
- Hernandez-Wilson - 93638 Daniel Place, East Crystal, AS 91084 [Update](#) [Delete](#)
- Bailey and Sons - 72748 Clark Avenue Apt. 666, Davisshire, NE 11106 [Update](#) [Delete](#)
- Brown-Calderon - 72748 Clark Avenue Apt. 666, Davisshire, NE 11106 [Update](#) [Delete](#)
- Waters-Bennett - 012 Sydney Underpass Suite 222, East Eric, WI 46870 [Update](#) [Delete](#)
- Waters-Bennett - 012 Sydney Underpass Suite 222, East Eric, WI 46870 [Update](#) [Delete](#)
- Edwards-Burton - 216 Pierce Center, East Matthewberg, CO 78907 [Update](#) [Delete](#)
- Williams, Murphy and Hardy - 3006 Edward Green Apt. 288, Joelmouth, FL 61630 [Update](#) [Delete](#)
- Johnson Ltd - 51074 Heather Bridge, Herrerachester, DE 50498 [Update](#) [Delete](#)

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After delete:

Restaurants

- Taylor-Lopez - 2989 Brian Inlet Apt. 846, Danachester, CO 08758 [Update](#) [Delete](#)
- Hernandez-Wilson - 93638 Daniel Place, East Crystal, AS 91084 [Update](#) [Delete](#)
- Bailey and Sons - 72748 Clark Avenue Apt. 666, Davisshire, NE 11106 [Update](#) [Delete](#)
- Brown-Calderon - 72748 Clark Avenue Apt. 666, Davisshire, NE 11106 [Update](#) [Delete](#)
- Waters-Bennett - 012 Sydney Underpass Suite 222, East Eric, WI 46870 [Update](#) [Delete](#)
- Waters-Bennett - 012 Sydney Underpass Suite 222, East Eric, WI 46870 [Update](#) [Delete](#)
- Edwards-Burton - 216 Pierce Center, East Matthewberg, CO 78907 [Update](#) [Delete](#)
- Williams, Murphy and Hardy - 3006 Edward Green Apt. 288, Joelmouth, FL 61630 [Update](#) [Delete](#)
- Johnson Ltd - 51074 Heather Bridge, Herrerachester, DE 50498 [Update](#) [Delete](#)

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Update a restaurant:

Update Restaurant

Name:

Location:

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Update Restaurant

Name:

Location:

[Back to Restaurants](#)

Restaurants

- Taylor-Lopez New - 2989 Brian Inlet Apt. 846, Danachester, CO 08758 [Update](#) [Delete](#)
- Hernandez-Wilson - 93638 Daniel Place, East Crystal, AS 91084 [Update](#) [Delete](#)
- Bailey and Sons - 72748 Clark Avenue Apt. 666, Davisshire, NE 11106 [Update](#) [Delete](#)
- Brown-Calderon - 72748 Clark Avenue Apt. 666, Davisshire, NE 11106 [Update](#) [Delete](#)
- Waters-Bennett - 012 Sydney Underpass Suite 222, East Eric, WI 46870 [Update](#) [Delete](#)
- Waters-Bennett - 012 Sydney Underpass Suite 222, East Eric, WI 46870 [Update](#) [Delete](#)
- Edwards-Burton - 216 Pierce Center, East Matthewberg, CO 78907 [Update](#) [Delete](#)
- Williams, Murphy and Hardy - 3006 Edward Green Apt. 288, Joelmouth, FL 61630 [Update](#) [Delete](#)
- Johnson Ltd - 51074 Heather Bridge, Herrerachester, DE 50498 [Update](#) [Delete](#)

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Add a restaurant:

Add Restaurant

Name:

Location:

Cuisine Type:

Price Range:

Contact Info:

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Restaurants

- Taylor-Lopez New - 2989 Brian Inlet Apt. 846, Danachester, CO 08758 [Update](#) [Delete](#)
- Hernandez-Wilson - 93638 Daniel Place, East Crystal, AS 91084 [Update](#) [Delete](#)
- Bailey and Sons - 72748 Clark Avenue Apt. 666, Davisshire, NE 11106 [Update](#) [Delete](#)
- Brown-Calderon - 72748 Clark Avenue Apt. 666, Davisshire, NE 11106 [Update](#) [Delete](#)
- Waters-Bennett - 012 Sydney Underpass Suite 222, East Eric, WI 46870 [Update](#) [Delete](#)
- Waters-Bennett - 012 Sydney Underpass Suite 222, East Eric, WI 46870 [Update](#) [Delete](#)
- Edwards-Burton - 216 Pierce Center, East Matthewberg, CO 78907 [Update](#) [Delete](#)
- Williams, Murphy and Hardy - 3006 Edward Green Apt. 288, Joelmouth, FL 61630 [Update](#) [Delete](#)
- ~~Johnson Ltd - 51074 Heather Bridge, Horrarchester, DE 50498 [Update](#) [Delete](#)~~
- Taylor-Lopez Old - Wall ST [Update](#) [Delete](#)

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