**Simple Customer Directory**

**Project Overview:**

This project is a **Customer Directory** application that mimics a simple admin dashboard. It allows users to:

1. **List all customers**.
2. **Add a new customer**.
3. **Delete a customer**.

It consists of a **backend (Node.js + Express.js)** and a **frontend (React)**, with a **MySQL** database. The backend handles the CRUD operations for managing customers, while the frontend allows users to interact with the data.

**Tech Stack:**

**Backend:**

* **Node.js** and **Express.js** for creating the API and managing requests.
* **MySQL** for storing customer data.
* **API Endpoints**:
  + **GET /customers**: Lists all customers.
  + **POST /customers**: Adds a new customer.
  + **DELETE /customers/:id**: Deletes a customer.

**Frontend:**

* **React.js** with hooks for building the user interface.
* **Axios** for making HTTP requests to interact with the backend.

**Features:**

* **Display List of Customers**: Fetches and displays a list of customers from the backend.
* **Add a Customer**: Allows the user to add a new customer with validation (e.g., email, phone, and company name).
* **Delete a Customer**: Provides a button to delete a customer.

**Assumptions:**

* **Auto-incrementing ID**: The **ID** for each customer is auto-generated and cannot be repeated. The ID starts from 1 and increments with each new customer.
* **Data Validation**:
  + The **email** must be valid.
  + **Name**, **company name**, and **phone number** must be provided.
  + The **phone number** must follow the format XXX-XXX-XXXX.
  + The **contract start date** and **contract expiry date** must be in the correct format YYYY-MM-DD.

**How to Run the Backend Locally:**

**Prerequisites:**

* **Node.js** installed on your machine.
* **MySQL** running on your local machine.
* Ensure that you have a **customerdb** database created in MySQL with the customers table.

**Steps to Run the Backend:**

1. **Clone the repository** and navigate to the backend folder:

git clone <repository\_url>

cd backend

1. **Install the dependencies**:

npm install

1. **Set up the database**:
   * Ensure that your database (customerdb) is running, and the customers table is created.
2. **Start the backend**:

node app.js

*The backend should now be running on*[***http://localhost:3001***](http://localhost:3001/)*.*

**How to Run the Frontend Locally:**

**Prerequisites:**

* **Node.js** installed on your machine.

**Steps to Run the Frontend:**

1. **Navigate to the frontend folder**:

cd frontend

1. **Install the dependencies**:

npm install

1. **Start the frontend**:

npm start

*The frontend should now be running on*[***http://localhost:3000***](http://localhost:3000/)*.*

1. **Ensure that the frontend is connected to the backend**:
   * The frontend makes requests to [**http://localhost:3001**](http://localhost:3001/) for customer-related operations.

**Extra Features:**

* **Email Duplicate Check**: Before adding a new customer, the application checks if the email already exists in the database to avoid duplicates.
* **Profile Picture**: Each customer can have a profile picture represented by a URL (e.g., PNG or JPEG image).

**Files Overview:**

* **backend/app.js**: Main backend server file. Handles the API routes for managing customers.
* **backend/database.js**: Handles the database connection and CRUD operations for the customers.
* **frontend/src/CustomerDirectory.js**: The main React component that displays the customer list, and provides forms for adding and deleting customers.