

Weather API Project Documentation

Introduction

The Weather API Project is a simple web application built using Node.js and Express.js. It connects to the OpenWeatherMap API to fetch and display real-time weather details for any city worldwide. The project demonstrates how to use APIs, environment variables, and server-side JavaScript development in practice.

Abstraction

This application abstracts the complexity of interacting with the OpenWeatherMap API by providing a simple endpoint that users can access to get weather details. Instead of manually calling the OpenWeatherMap API, users only need to query the local server with the city name, and the server handles the API request, response parsing, and error handling.

Tools Used

1. **Node.js** - JavaScript runtime for server-side execution.
2. **Express.js** - Framework for building web applications and handling routes.
3. **Axios** - HTTP client for making API requests.
4. **OpenWeatherMap API** - External service for fetching real-time weather data.
5. **dotenv** - For managing environment variables securely.

Steps Involved

1. Initialize the Node.js project using *npm init*.
2. Install required dependencies: *npm install express axios dotenv*.
3. Create a *.env* file to store the OpenWeatherMap API key.
4. Write server logic in *main.js* to fetch and return weather data.
5. Run the application using *node main.js* or *nodemon main.js*.
6. Access weather data at *http://localhost:3000/weather/{city}*.
7. Optional: Create a simple *index.html* in the *public/* folder for a front-end interface.

Conclusion

The Weather API Project is an excellent beginner-friendly project to understand the basics of REST APIs, server-side programming, and environment variable management. It provides a solid foundation for building more advanced projects that involve third-party API integration and data handling.