

Weather Forecast Application

This project allows users to view the weather forecast for a specific location using real-time data. The application fetches weather information based on either a location name or latitude and longitude. Users can also use their current location for accurate results.

Prerequisites

Ensure you have the following installed on your system:

- **Visual Studio Code**
 - **Visual Studio Community Edition** (with .NET support)
 - **Node.js** (version 18.20.4)
 - **npm** (version 9.8.1)
 - **Browser** (latest version of Chrome, Firefox, or Edge)
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How to Run the Project

1. Frontend (WeatherFrontend)

1. Open **WeatherFrontend** in **VS Code**.
2. In VS Code, open the terminal and run the following command to install the dependencies:

```
npm install
```
3. After installation, restart VS Code.
4. Open the terminal again and start the frontend by typing:

```
npm start
```
5. The frontend will run on <http://localhost:4200/>. Open this link in your browser.

2. Backend (WeatherForecast)

1. Open **WeatherForecast** in **Visual Studio Community**.
2. Run the backend application by pressing **Ctrl + F5** or selecting **Run** in Visual Studio.
3. Ensure both the frontend and backend are running for full functionality.

3. Access the Application

In your browser, go to the following URL:

<http://localhost:4200/>

When prompted, **allow location access** for a smooth experience.

Features

- Enter a **location name** and the app will fetch the **longitude and latitude** using the OpenStreetMap API:

`https://nominatim.openstreetmap.org/search?format=json&q=${encodeURIComponent(locationName)}`

Note: If the location name is not correctly entered, the API will return approximate results. No validation is done on location names.

- **Latitude and Longitude** can also be directly entered for weather lookup.

Bonus Features

1. **Change the forecast location** manually.
2. **Use the viewer's current location** to get an accurate forecast.
3. **Toggle between daily and hourly forecast** views.
4. Display the viewer's **local time zone** in the forecast.
5. **Responsive and attractive design** using SKY UX.
6. The application is **mobile-friendly** and adapts to various screen sizes.

Important Notes

1. The application fetches the user's location via the browser's Geolocation API for accurate weather data.
2. The free **OpenStreetMap API** is used to convert location names to latitude and longitude.
3. No location name validation is implemented due to the use of a free API.

Day Forecast		Weekly Forecast	
Latitude: 28.6851072 Longitude: 77.3357968 Your Region Timezone: Asia/Calcutta	Latitude: 28.6851 Longitude: 77.33575 Location: <input type="text"/> <input type="button" value="Search"/>	<input type="button" value="Search"/>	
Today		Today	
Weather: ☀️		Saturday	
Max Temp: 26.3°C Min Temp: 23.8°C		Sunday	
Max Apparent Temp: 31.4°C Min Apparent Temp: 27.6°C Relative Average Humidity: 92.50%		Monday	
Precipitation Hours: 7 Max Precipitation Probability: 78% Total Precipitation: 4.9 mm		Tuesday	
Sunrise: 6:04 AM Sunset: 6:28 PM		Wednesday	
Weather Code: 80		Thursday	
Hourly Forecast			
Time: 12:00 AM Temperature: 24.1°C Weather Code: 80	Time: 01:00 AM Temperature: 24.1°C Weather Code: 80	Time: 02:00 AM Temperature: 24.2°C Weather Code: 3	Time: 03:00 AM Temperature: 24.1°C Weather Code: 3
Time: 04:00 AM Temperature: 24.2°C Weather Code: 3	Time: 05:00 AM Temperature: 24°C Weather Code: 3	Time: 06:00 AM Temperature: 23.9°C Weather Code: 80	Time: 07:00 AM Temperature: 23.9°C Weather Code: 80