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DATE:15/09/2025

Completed the project named as phase 2

NAME :Live Weather Dashboard

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Live Weather Dashboard – System Design

Tech Stack Selection

- Frontend: React.js, TailwindCSS/Bootstrap, Axios/Fetch API, Recharts - Backend (Optional): Node.js + Express (for proxy & caching) - API Provider: OpenWeatherMap API / WeatherAPI.com - Deployment: Vercel / Netlify (Frontend), Render / Heroku (Backend)

UI Structure

---------- | Weather Dashboard | ---------- | Search Bar (Enter city name) | [Search Button] | ---------- ---------- | Current Weather Card: | | - City Name, Country | | - Temperature (°C/°F) | | - Weather Condition + Icon | | - Humidity, Wind Speed, Pressure | ---------- ---------- | Forecast Section (Next 5 Days) | | - Cards with Date, Temp, Condition | ---------- --- | Charts / Graphs | | - Temperature Trend (line chart) | | - Humidity & Wind Speed (bar chart) | ---------- ----------

API Schema Design

Endpoint: GET https://api.openweathermap.org/data/2.5/weather?q={city}&appid;={API_KEY} GET https://api.openweathermap.org/data/2.5/forecast?q={city}&appid;={API_KEY} Example Response (simplified): { "city": {"name": "Chennai","country": "IN"}, "list": [{ "dt_txt": "2025-09-15 12:00:00", "main": {"temp": 303.15,"humidity": 78,"pressure": 1005}, "weather": [{"description": "light rain","icon": "10d"}], "wind": {"speed": 4.5} }] }

Data Handling Approach

1. Frontendcalls API with cityname input
2. API response parsed → Extract fields: City, Temp, Condition, Humidity, Wind, Pressure
3. State management with React useState/useEffect
4. Data mapped to UI Components (cards, charts)
5. Error handling with fallback UI
6. Optional caching in localStorage

Component / Module Diagram

[App] | |-- [SearchBar Component] |-- [CurrentWeatherCard] |-- [ForecastList] | |-- [ForecastCard] | |-- [Charts] |-- [TemperatureChart] |-- [HumidityWindChart]

Basic Flow Diagram

UserInput (CityName)
↓
[SearchBar Component]
↓
API Call → Weather API
↓
JSON Response
↓
[Data Parser / State Update]
↓
UI Components Update
↓
User sees Weather Cards + Forecast + Charts