PROJECT : WEATHER DASHBOARD

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Introduction

- The Weather Dashboard is a user-friendly web application designed using HTML, CSS, and JavaScript. It provides real-time weather updates for any city by integrating the Open Weather Map API.

- Users can search for a city, and the dashboard dynamically displays temperature, humidity, and wind speed. JavaScript powers the data fetching and updates, while CSS ensures a modern, responsive design.

- This project emphasizes practical skills in API integration and creating interactive user interfaces, showcasing the potential of web technologies in building functional applications

Architecture

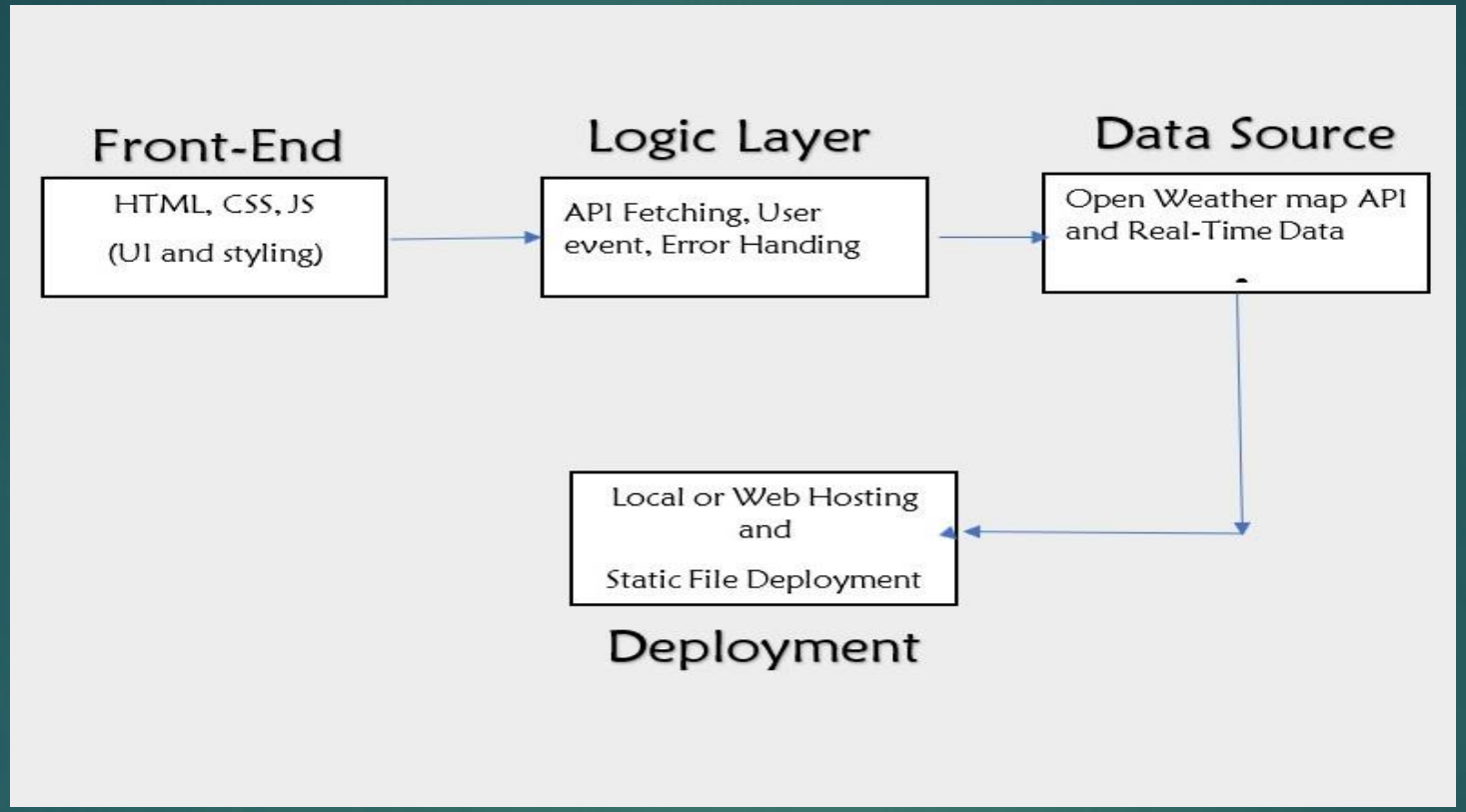

Fig a : Architecture

Project Overview

What is the Weather Dashboard?

1.The Weather Dashboard is a web application that provides real-time weather updates for cities worldwide using the Open WeatherMap API.

2.Built with HTML, CSS, and JavaScript, it offers a responsive design and dynamically displays temperature, humidity, and wind speed based on user input.

Purpose:

- To help users quickly access current weather conditions.
- A practical project to demonstrate the use of web technologies and APIs.

Tools and Technologies Used

HTML: Hypertext Markup Language

- It serves as the backbone of web development, allowing developers to design user-friendly and accessible websites by organizing content in a hierarchical structure.

CSS: Cascading Style Sheets

- For styling and designing a responsive interface.
- It enhances user experience by making web applications responsive and visually appealing across different devices and screen sizes.

JavaScript: For dynamic functionality, including fetching and displaying weather data.

- Its enables communication with APIs, Allowing developers to fetch and manipulating data, making web applications more engaging and functional.

API: Application Programming Interfaces

- Open Weather Map API for accessing weather information.
- API allow different software applications to communicate and exchange data seamlessly, enabling integration between systems.

Project Workflow

User Input: User enters the city name.

Data Fetching: JavaScript fetches data from the Open Weather Map API.

Data Processing: Extract relevant weather details (temperature, humidity, wind speed).

Display: Update the UI with the fetched data.

Key Features

Real-time Data: Fetches up-to-date weather information.

Search Functionality: Allows users to search for any city.

Interactive UI: Highlights temperature, humidity, and wind speed dynamically.

Output

Home Page :

- Home page displays the GUI of Weather Dashboard

- As shown in the Fig b
  It Contains ℃ city and Humidity in % and wind speed in km/h

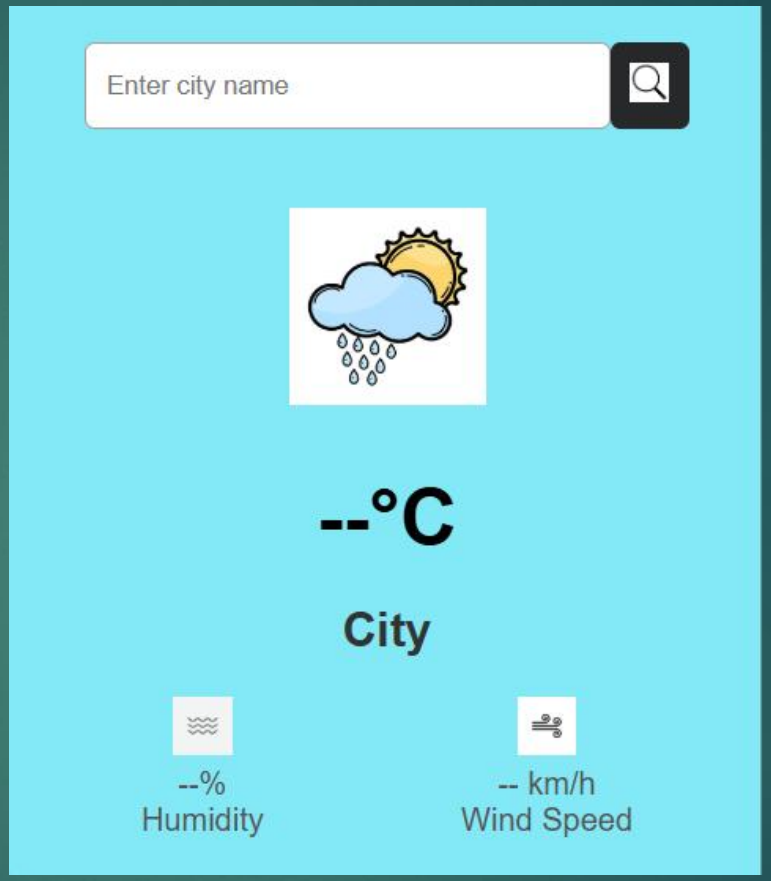

Fig b : Home page

Output

Result Page :

- When we enter City name in the search box on that time Our Weather Dashboard Result page displays the city temperature , humidity in % and wind speed in km/h.
- Example : Shows in Fig c

  Pune 21°C

  Humidity 65%

  Wind speed 0.85kmh

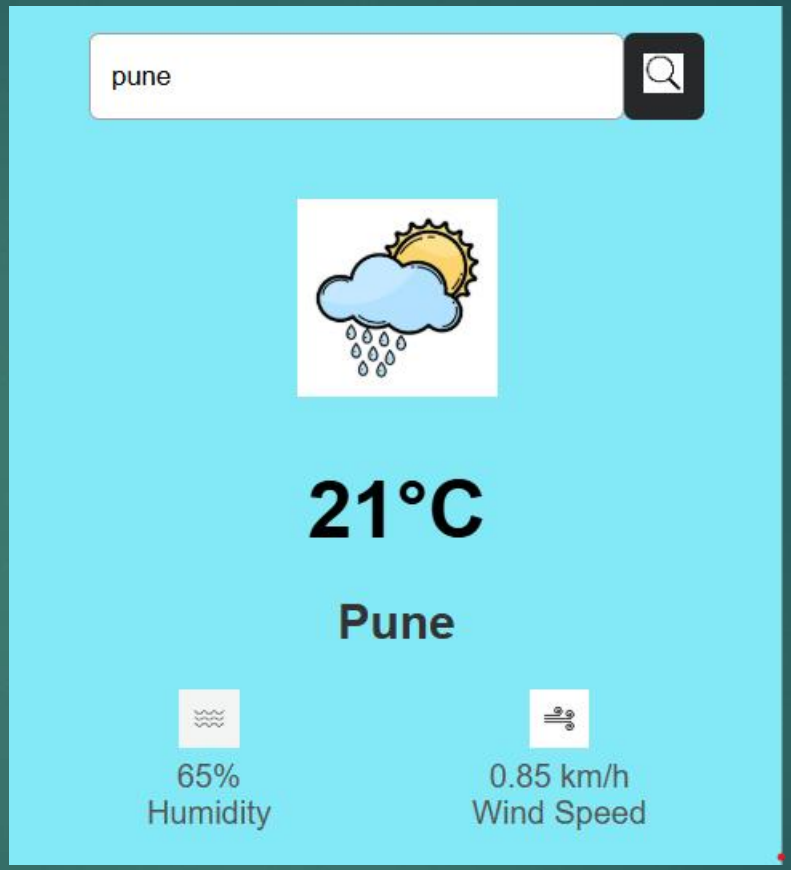

Fig c : Result Page

Conclusion

- The Weather Dashboard project showcases the practical application of HTML, CSS, and JavaScript in building an interactive and dynamic web application. By integrating the Open Weather Map API, the project demonstrates the importance of API usage in providing real-time data and enhancing user experience.

- This project highlights the value of combining technical skills with creative design to develop functional, responsive, and user-friendly tools. It serves as a stepping stone for mastering web development and exploring advanced features, emphasizing the potential of modern web technologies in solving real-world problems.

Thank You