PBEL Virtual Internship

Project Title: Weather App

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Declaration

I, hereby declare that this project report titled “WEATHER APPLICATION” is a result of my own work carried out during the IBM PBEL Virtual Internship. The project is original, and no part of it has been copied or submitted elsewhere for any other course or internship.

Acknowledgement

I would like to express my heartfelt gratitude to my Project guide, Mr. Deepanshu Kumar for their valuable support, guidance, and encouragement throughout the project. Their constructive feedback and constant motivation helped me complete this internship successfully. I also extend my sincere thanks to the IBM PBEL team for offering this incredible opportunity to gain practical experience. My appreciation also goes to my college, United Institute of Technology , and my peers who supported me during the course of this internship.

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1. Introduction

The **Current Weather Application** is a lightweight and efficient tool designed to provide users with **real-time weather updates** for their current location. Unlike complex weather platforms that offer extended forecasts and radar maps, this application is built with simplicity in mind—offering only the **essential current weather details** needed for everyday decision-making.

The app retrieves live weather data from a trusted weather API and displays it in a clean, easy-to-read interface. It shows the current **temperature**, **weather condition** (like sunny, cloudy, rainy), **humidity**, **wind speed**, and **location**. Users can instantly check the current conditions without unnecessary distractions or complicated features.

This application is especially useful for:

- People on the way who need a quick weather check.
- Minimalist users who prefer simple interfaces.
- Integration in other systems where only current weather is needed (e.g., smart home dashboards).

2. Technologies Involved

The following technologies and tools are used to build this project:

1. HTML5

- Used to build the **structure** of the web page.
- Elements used: div, input, button, img, p, h1, etc.
- Semantic use for layout: container, search-box, weather-body.

2. CSS3

- Used for styling the web app (fonts, colors, spacing, responsiveness).
- File: style.css

3. JavaScript

- Controls the **application logic and interactivity**.
- Used to:
  - Fetch current weather data from the **OpenWeatherMap API**.
  - Show/hide weather info and error messages.
- File: `script.js`

4. OpenWeatherMap API

- Public weather API service used to fetch **real-time weather data**.
- API key and endpoint used to query weather by city name.

5. Assets (Images)

- Local image assets used to visually represent weather types:
  - cloud.png, clear.png, rain.png, snow.png, mist.png
  - 404.png for error display

3. Problem Faced

1. Understanding API Integration

- **Problem:** Difficulty in connecting the OpenWeatherMap API, generating API keys, and forming the correct request URL.
- **Why:** The URL format must include query parameters (q=city, units=metric, appid=APIKEY), and a small mistake results in failed fetches.
- **Solution:** Use sample API URLs from documentation and test in browser before integrating.

2. Incorrect Temperature Display

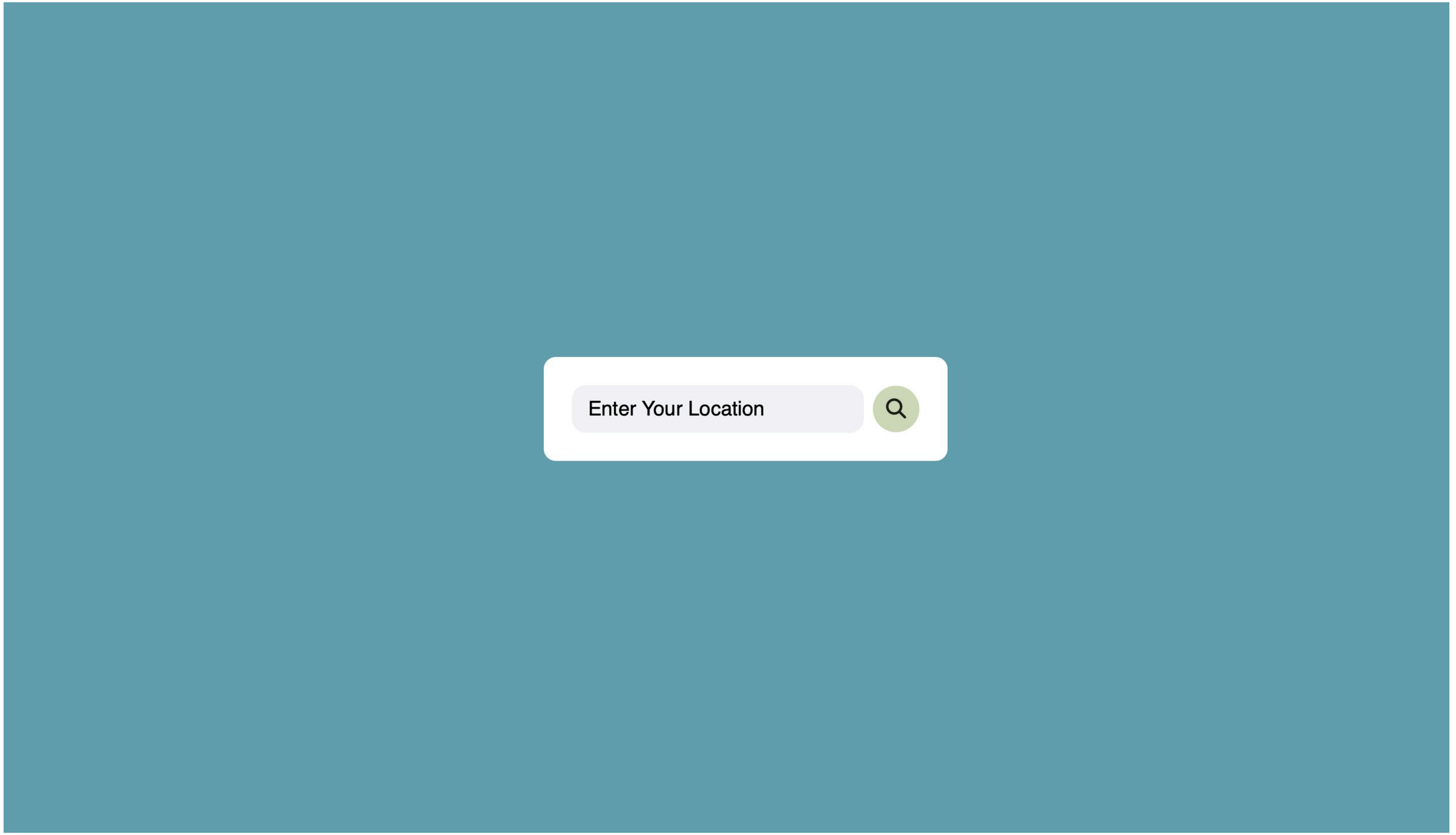
- **Problem:** Initially displaying temperature in **Kelvin** instead of **Celsius**.
- **Why:** OpenWeatherMap returns Kelvin by default unless units=metric is specified.
- **Solution:** Add &units=metric in the API URL to get Celsius.

3. Handling API Errors (Invalid City Input)

- **Problem:** App crashes or does nothing if user types an invalid city name.
- **Why:** The API returns a 404 error which wasn’t properly caught.
- **Solution:** Check for weather_data.cod === 404 and show an appropriate error message or section (.location-not-found).

4.Output Screenshot

Home Page



Lucknow

28°C

Broken Clouds

91%
Humidity

3.39Km/H
Wind Speed

Map

Sorry, Location not found!!!

Antarctica

-43°C

Overcast Clouds

98%
Humidity

5.57Km/H
Wind Speed