🌦 Weather Application – Project Report

1. Introduction

The Weather Application (Skynic) is a smart web-based tool that provides real-time weather updates using the OpenWeatherMap API. The app offers users detailed insights into the current weather, forecasts, and atmospheric conditions in any city across the world.

2. Objectives

- Build a responsive weather dashboard using HTML, CSS, and JavaScript.
- Fetch and display real-time weather data from an external API.
- Make the interface engaging, user-friendly, and visually attractive.
- Provide additional insights such as hourly forecast, 5-day forecast, air quality, sunrise/sunset times, and more.

3. Features

- City Search & Location Access – Users can search for any city worldwide or use their current GPS location.
- Real-Time Weather Data – Displays temperature, feels-like temperature, weather condition (cloudy, sunny, rainy, etc.), humidity, wind speed, pressure, and visibility.
- Sunrise & Sunset Timings – Shows daily sunrise and sunset times for the selected city.
- Air Quality Index – Gives users an idea of the air quality (Good, Moderate, Poor).
- Hourly Forecast – Displays temperature trends, weather condition, and time of the day (e.g., 2 PM, 5 PM, etc.).

- 5-Day Forecast – Extended weather outlook showing temperature, conditions, and rain chances for the next five days.
- Smart Tips & Alerts – For example, a reminder like 'Don’t forget your umbrella if it’s going to rain today!'.
- Attractive UI Dashboard – A modern, colorful, and responsive interface with cards for each weather parameter.
- Unit Toggle – Option to switch between Celsius (°C) and Fahrenheit (°F).
- Powered by OpenWeatherMap API – Reliable and global weather data source.

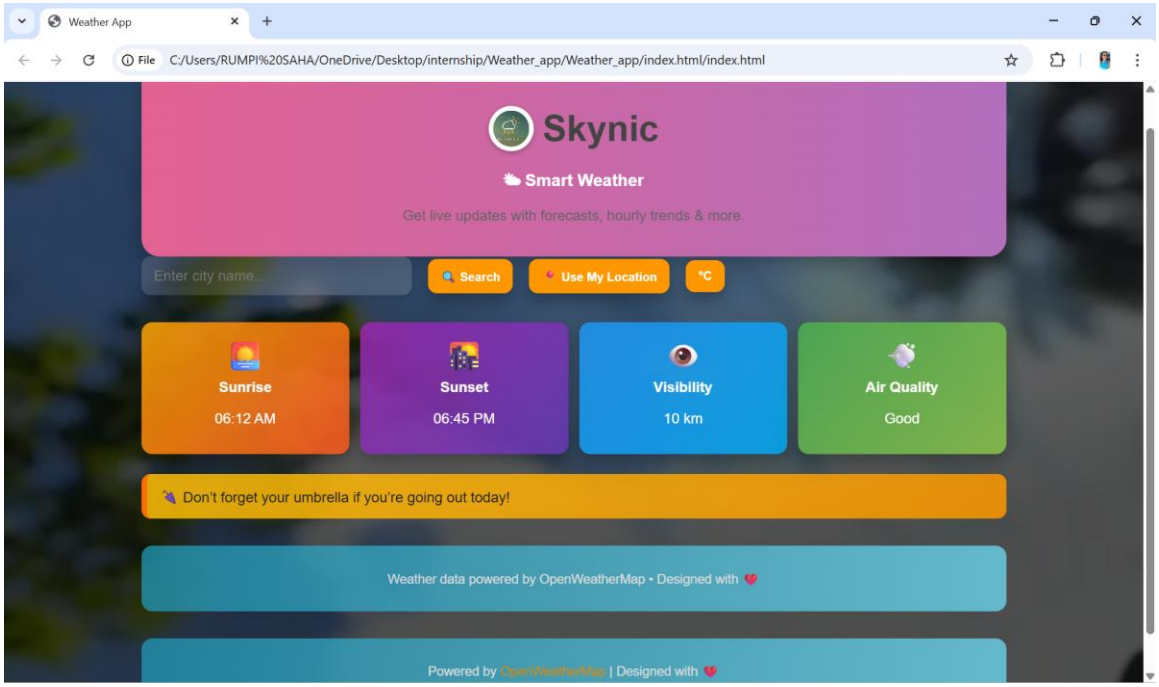
4. Technologies Used

- 🔹 HTML5 – For structuring the web application.
- 🔹 CSS3 – For styling, responsive layout, and dashboard design.
- 🔹 JavaScript (ES6) – For API integration and dynamic updates.
- 🔹 OpenWeatherMap API – To fetch weather and air quality data.

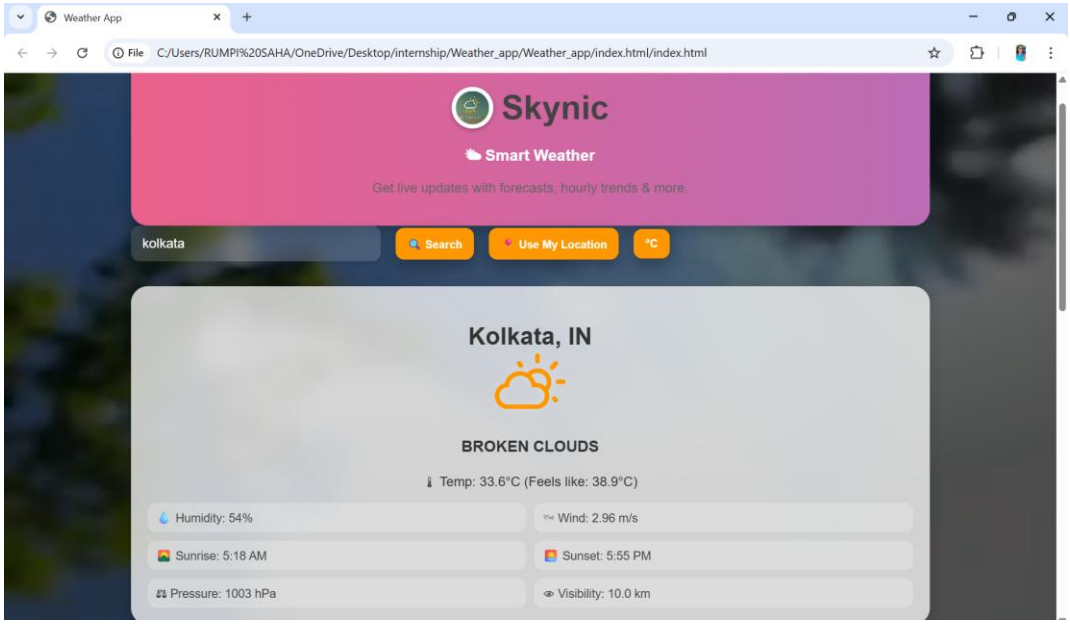
5. Results & Output

Screenshots from the Weather Application dashboard:

- Dashboard (Before Search)



- Weather Data for a City (After Search – Example: Kolkata)



- Hourly & 5-Day Forecast with Extra Information

6. Conclusion

The Weather App successfully meets its objectives by providing a user-friendly dashboard with real-time weather data and forecasts. The additional features like air quality index, sunrise/sunset, and smart tips enhance its usefulness. The project demonstrates the integration of APIs into a frontend application, making it both practical and visually appealing.