📌 Project Title

Weather App using Python Tkinter & OpenWeather API

📖 Overview

- This project is a graphical desktop application that allows users to select an Indian state and fetch real-time weather updates. It retrieves data such as temperature, climate condition, weather description, and pressure using OpenWeatherMap API, and displays them through a clean Tkinter-based interface.

- The purpose of this project is to demonstrate real-world application development by integrating GUI, API handling, and data parsing.

✨ Features (Functional Requirements)

✓ User-interactive GUI to select any Indian state

✓ Fetches and displays:

Weather condition

- Detailed weather description
- Temperature converted to °C from Kelvin

Atmospheric pressure

✓ Real-time data retrieval from the internet

✓ Clear input → Output workflow

✓ Error-free user interaction

🛡 Non-Functional Requirements

NFR	Description
Usability	Simple dropdown-based state selection
Performance	API response processed instantly
Reliability	Uses valid REST API service
Maintainability	Clean modular code structure
Error Handling	Safe parsing of JSON values

💻 Technologies Used

- Python
- Tkinter (GUI)
- Requests library (API Calls)
- OpenWeatherMap API

🔧 How to Install & Run

1️⃣ Clone the repository

git clone <your-repo-link>

cd weather-app

2️⃣ Install dependencies

pip install requests

3️⃣ Run the application

python weather_app.py

🧪 Testing Instructions

- Launch the app
- Choose any state from the dropdown → Click “Done”
- Verify weather data is updated accurately
- Test different states to validate reliability of data fetching

📌 Folder Structure

- Weather-App/
- |— weather_app.py
- |— README.md
- |— assets/ (screenshots)

🔮 Future Enhancements

- Add humidity, wind speed & sunrise/sunset info
- Enable search by city instead of state list
- Add icons based on weather conditions
- Offline fallback using cached data

👤 Author

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