Weather App - Code Explanation

1. Importing Necessary Libraries

- requests: Fetches weather data from an online API.

- tkinter: Creates the GUI interface.

- messagebox: Displays pop-up error messages.

- geopy.Nominatim: Converts a city name into latitude and longitude.

2. Function to Get Coordinates of a City

- Uses Nominatim (Geopy) to convert a city name into latitude and longitude.

- If the city is found, returns (latitude, longitude).

- If the city is not found, returns (None, None).

3. Function to Fetch Weather Data

- Fetches the city name entered by the user.

- Calls get_coordinates(city) to get latitude and longitude.

- If the city is invalid, it displays an error message.

- Sends an HTTP request to Open-Meteo API.

- Extracts temperature, wind speed, and weather condition code from JSON response.

- Displays the weather details in the GUI.

4. Creating the Tkinter GUI

- Creates a GUI window with a title and background color.

- Provides an entry box for city input.

- Adds a button to fetch weather data.

- Displays weather details using a label.

How It Works:

1. User enters a city name and clicks 'Get Weather'.

2. The program converts the city name into latitude and longitude.

3. Sends a request to Open-Meteo API to get weather data.

4. Displays temperature, wind speed, and condition code.

Possible Enhancements:

- Add better error handling for API failures.

- Display detailed weather conditions instead of a code.

- Improve UI design with better fonts, spacing, and icons.