Weather App - PM Accelerator Assessment

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A Python desktop weather application built for the PM Accelerator AI Engineer Intern technical assessment.

Demo Video

Watch the demo: https://drive.google.com/file/d/1intYFa8JP4NAkh_0qpkO-52a0BCiQrIE/view?usp=sharing

Features

Assessment 1

- Search weather by city, zip code, coordinates, or landmarks
- Display current weather (temperature, humidity, wind, pressure)
- 5-day weather forecast
- Real-time API integration with OpenWeatherMap

Assessment 2

- **CRUD Operations** on SQLite database
  - CREATE: Save all weather searches
  - READ: View search history
  - UPDATE: Edit saved records
  - DELETE: Remove records
- **Data Validation**
  - Date range validation
  - Location verification via geocoding
- **Data Export** to JSON, CSV, XML, and Markdown formats

Installation

Requirements

- Python 3.7+
- pip

Setup

1. Clone this repository:

```bash
git clone https://github.com/YOUR-USERNAME/weather-app-pm-accelerator.git
cd weather-app-pm-accelerator
```

2. Install dependencies:

```bash
pip install -r requirements.txt
```

3. Get a free API key from OpenWeatherMap

4. Add your API key to line 18 of `weatherapp.py`:

```python
API_KEY = "your_api_key_here"
```

Usage

Run the application:

```bash
python weatherapp.py
```

Using the App

1. **Search Weather**: Enter a location (city, zip code, or coordinates) and date range
2. **View Results**: Check Current Weather and 5-Day Forecast tabs
3. **Manage History**: Go to Saved Searches tab to view, edit, or delete records
4. **Export Data**: Click export buttons to save data in various formats

Date Format

Dates should be entered in **YYYY-MM-DD** format (e.g., 2025-11-12)

Tech Stack

- **Language:** Python 3
- **GUI:** tkinter
- **Database:** SQLite

- **APIs:**
  - OpenWeatherMap (weather data)
  - Nominatim/geopy (geocoding)

Project Structure

```
weather-app-pm-accelerator/
├── weatherapp.py          # Main application
├── requirements.txt       # Python dependencies
├── README.md              # This file
└── weather_data.db        # SQLite database (auto-created on first run)
```

Features Implemented

Core Features

- ✅ Multiple location input formats (city, zip, coordinates, landmarks)
- ✅ Current weather display with detailed information
- ✅ 5-day weather forecast
- ✅ Date range selection and validation
- ✅ Location validation and geocoding

Database (CRUD)

- ✅ CREATE - Automatically save all weather searches
- ✅ READ - View all saved search history in a table
- ✅ UPDATE - Edit location and date range of saved records
- ✅ DELETE - Remove records from database

Data Export

- ✅ Export to JSON format
- ✅ Export to CSV format (Excel-compatible)
- ✅ Export to XML format
- ✅ Export to Markdown format

Additional Features

- ✅ Error handling for invalid inputs
- ✅ Loading indicators during API calls
- ✅ PM Accelerator information button

Assessment Completion

- ✅ **Tech Assessment 1** - Complete
- ✅ **Tech Assessment 2** - Complete (including optional sections)

About PM Accelerator

This project was created for the PM Accelerator AI Engineer Intern technical assessment.

The Product Manager Accelerator Program is designed to support PM professionals through every stage of their career. From students looking for entry-level jobs to Directors looking to take on a leadership role, the program has helped hundreds of students fulfill their career aspirations.

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