

# Internship Task 1: API Integration and Data Visualization

## Project Title:

### Weather Dashboard Using Flask and OpenWeatherMap API

## Overview:

This project demonstrates the use of public API(OpenWeatherMap) to collect real time weather data and create informative visualizations using Python. The goal of this project is to build a user-friendly dashboard that displays current weather and 5-day forecast trends for selected Indian cities.

## Objectives:

1. Integrate OpenWeatherMap API to fetch live weather data
2. Use Python to process and visualize data
3. Create visual dashboards for current and forecast weather
4. Build a web interface using Flask
5. Allow downloading of charts for offline usage or reporting

## Tools & Technologies:

- Python 3.4
- Flask(for the web server)
- Matplotlib(for plotting)
- HTML/CSS(for front end)
- GitHub(for source control and sharing)

## API Used:

### OpenWeatherMap API

Endpoint: [api.openweathermap.org](https://api.openweathermap.org/)

Data fetched:

- Current weather(temperature, pressure, humidity, etc.)
- 5 day/ 3 hour forecast

**Dashboard Features:**

- Visual representation of current weather for 5 cities: Dehi, Mumbai, Bangalore, Kolkata, Chennai
- Line Chart of 5- day forecast
- Combined dashboard showing summary for all cities
- Web interface with download buttons for each chart

**Outcome:**

- Fully Functional Weather Dashboard
- Uploaded and hosted on GitHub
- Ready for real world use or extension

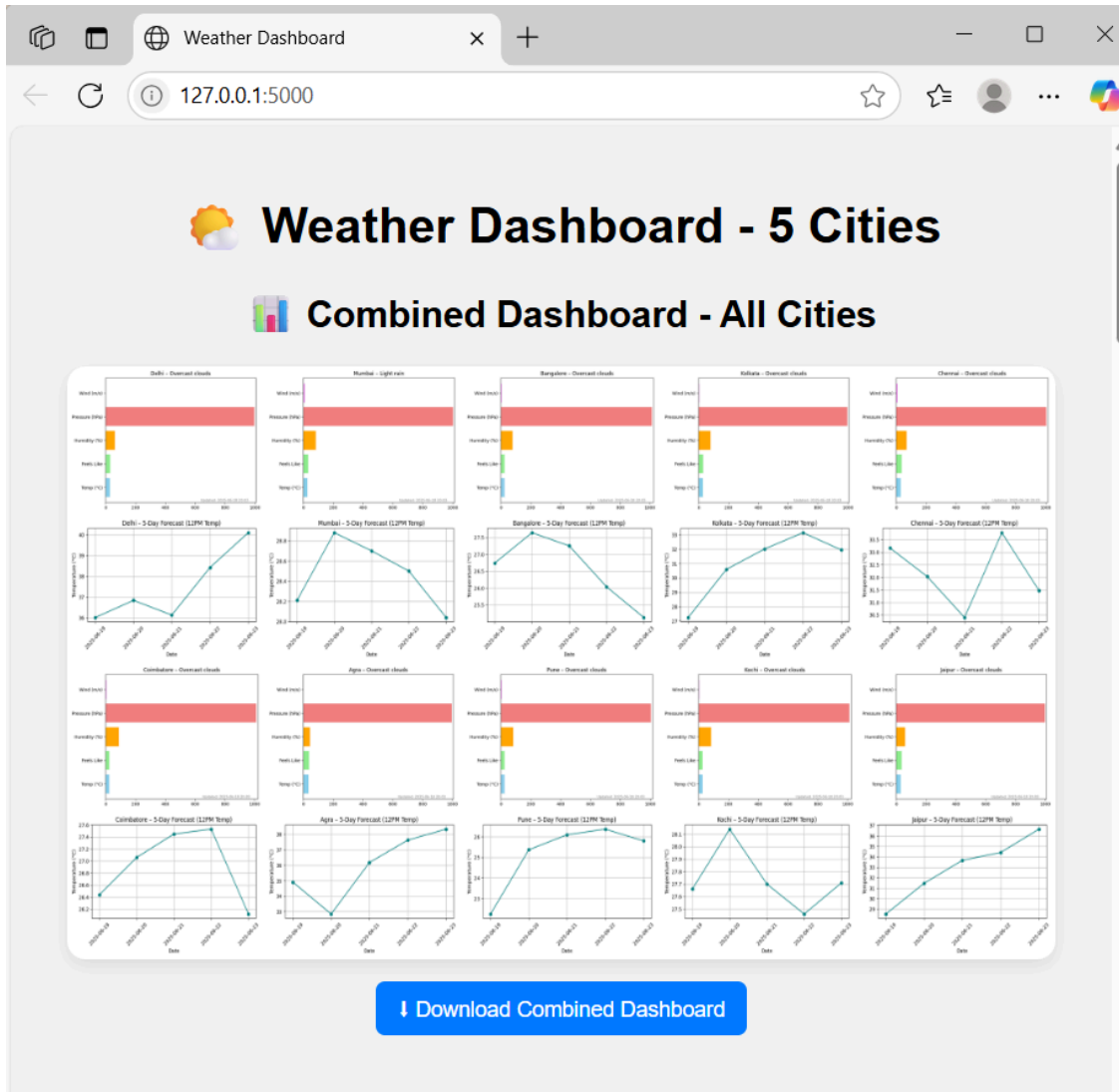
**GitHub Repository:**

[https://github.com/chrysl7076/weather\\_dashboard](https://github.com/chrysl7076/weather_dashboard)

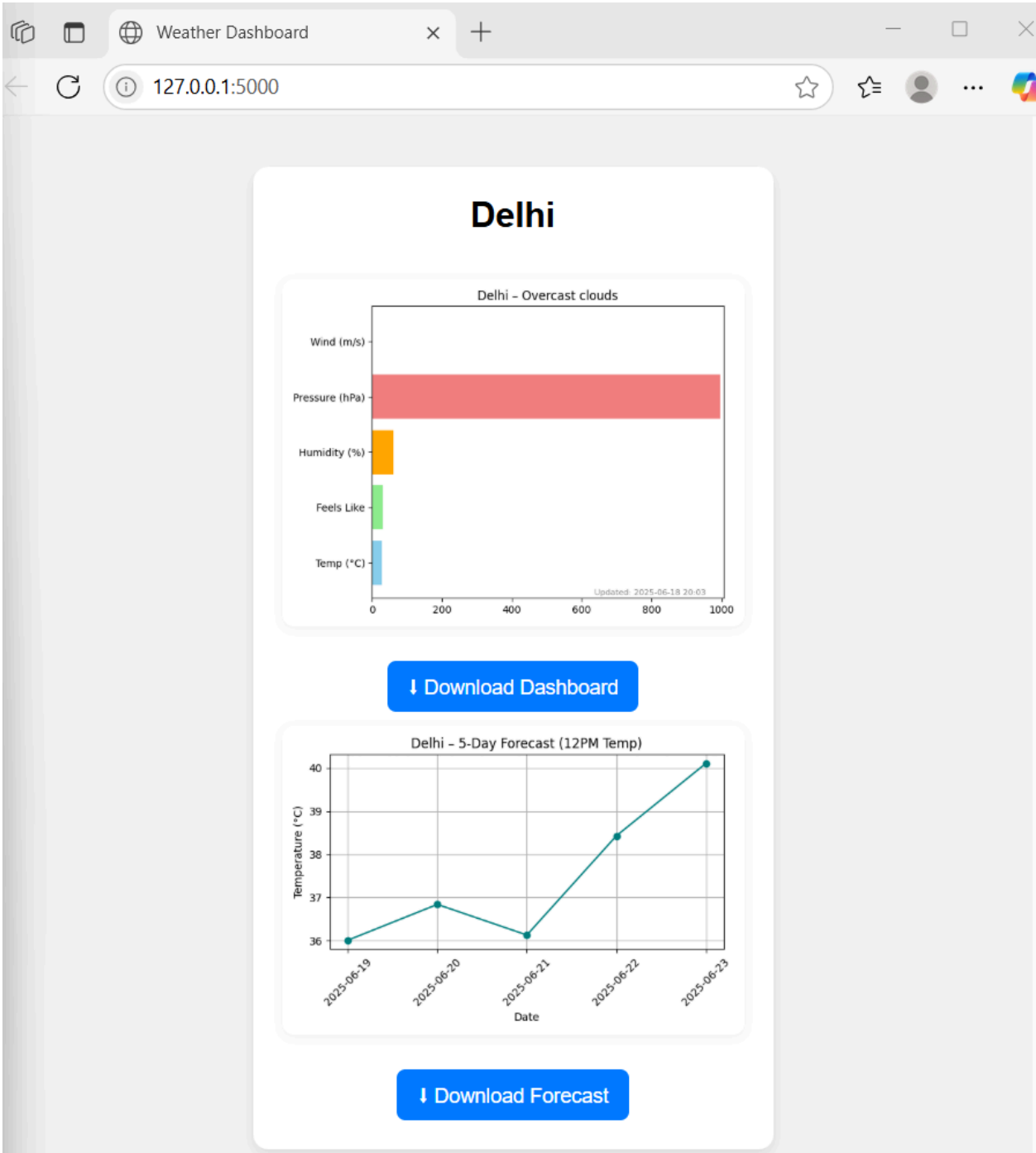
**Sample Visualizations:**

*(On the following pages)*

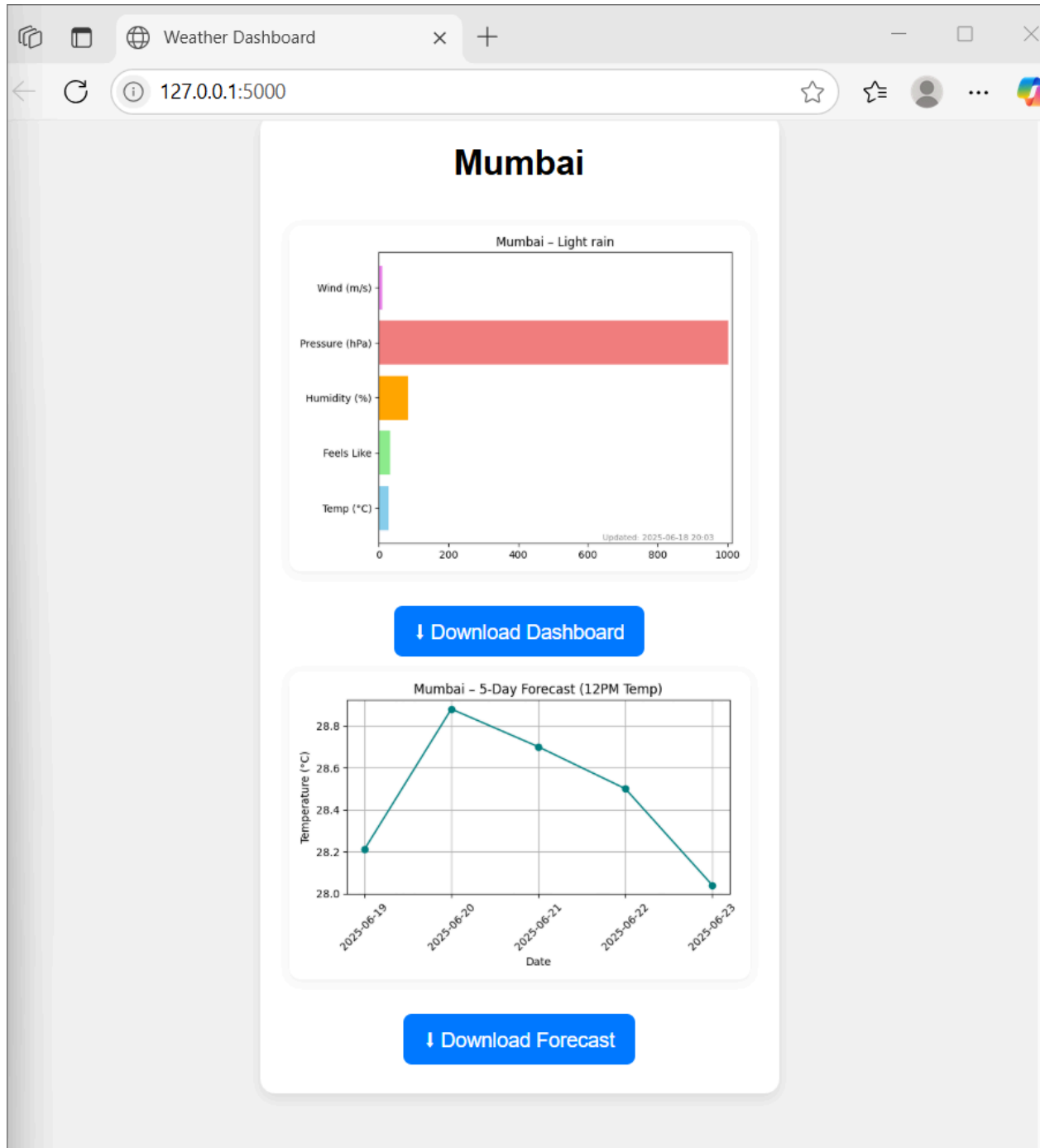
# 1. Combined Dashboard



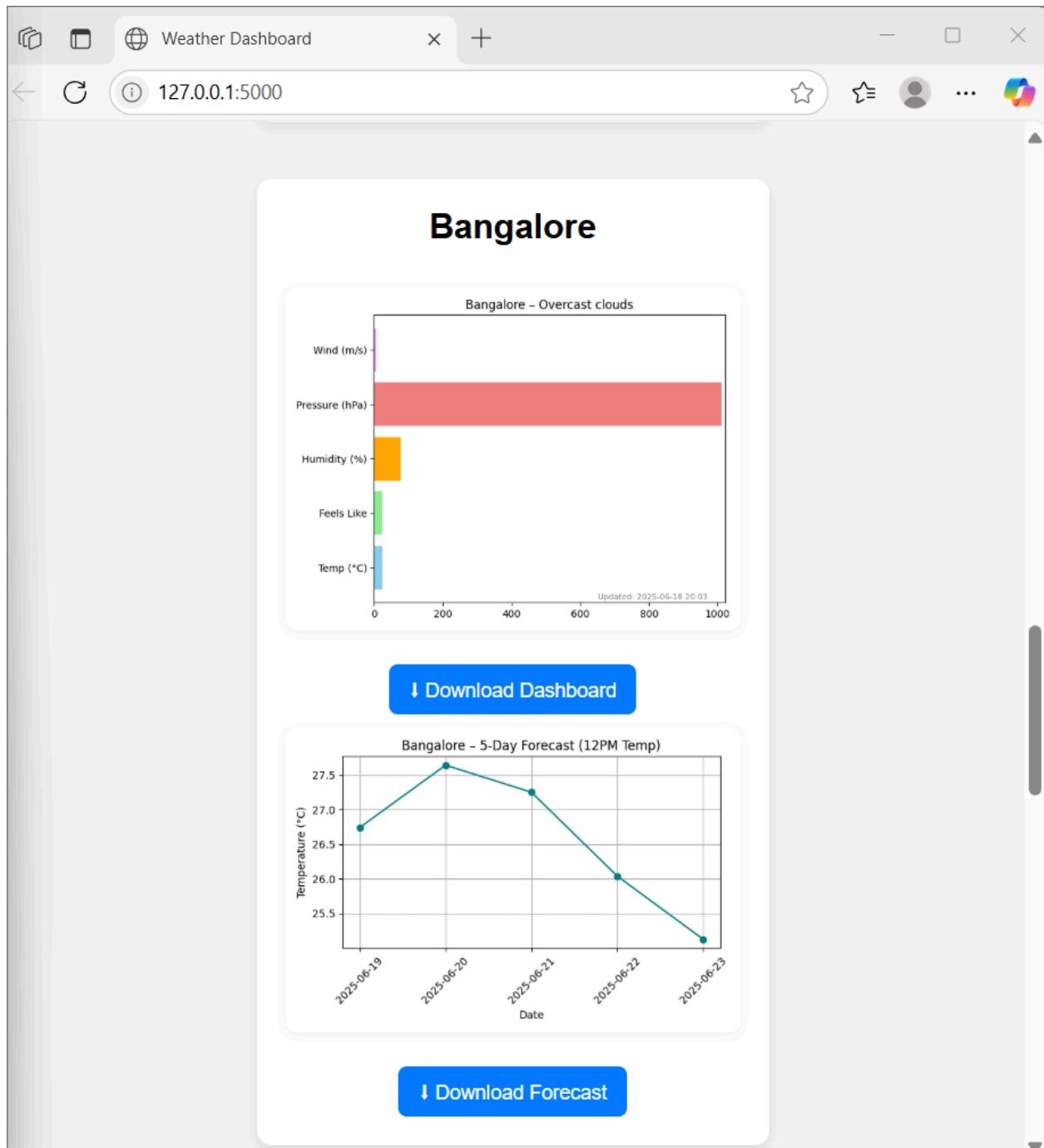
## 2. Delhi Dashboard



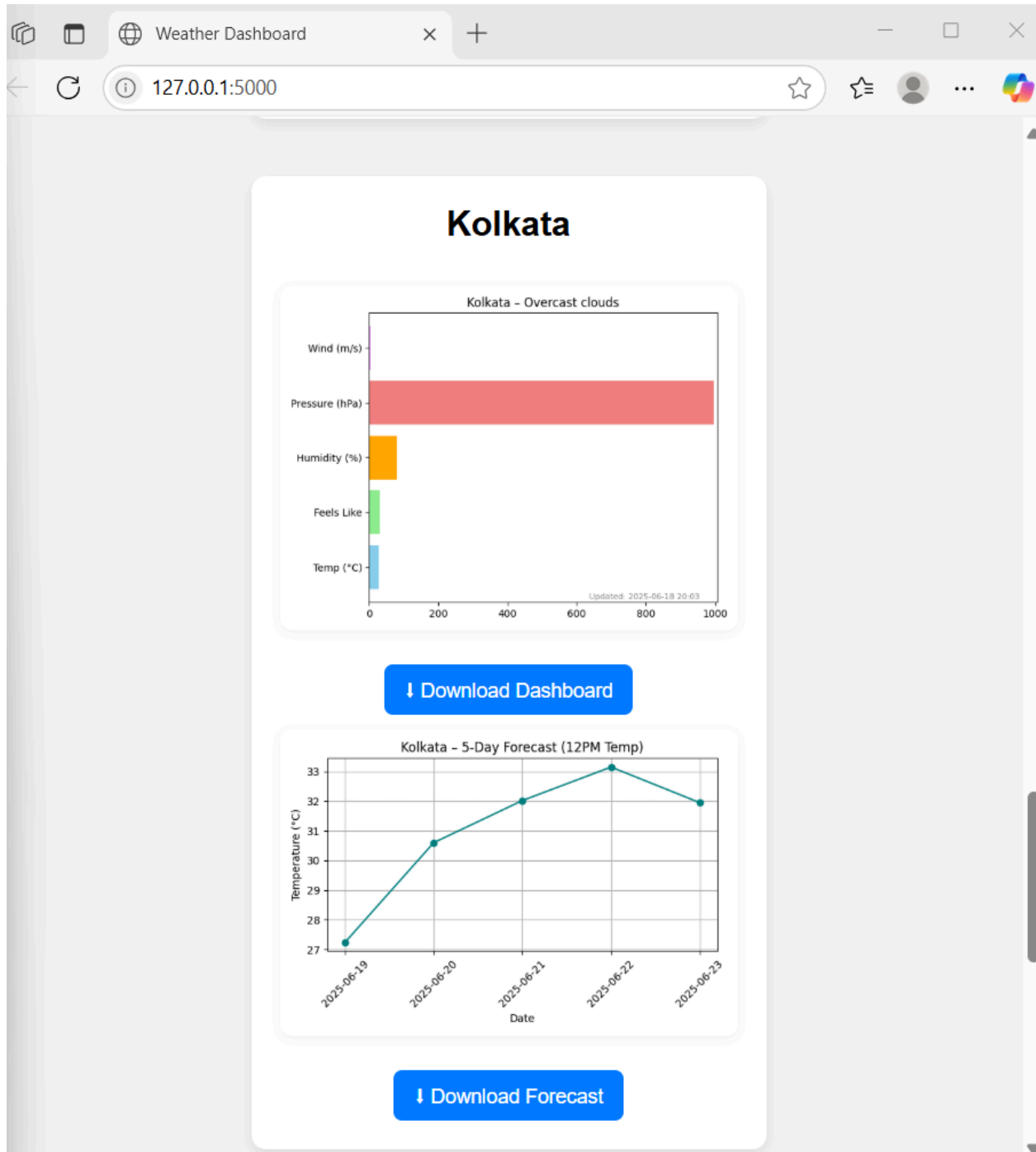
### 3. Mumbai Dashboard



## 4. Bangalore Dashboard



## 5. Kolkata Dashboard



## 6. Chennai Dashboard

