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Smart Retail Insights with Weather Integration

Objective 1: Fetch the live weather data from the public API and store it in PostgreSQL

- API used: **Open-Meteo Archive API**
- Python script: `fetch_history.py`
- Successfully fetched last 30 days data for **Nanded**.
- Inserted into PostgreSQL database `smart_retail` in table `weather_data`.

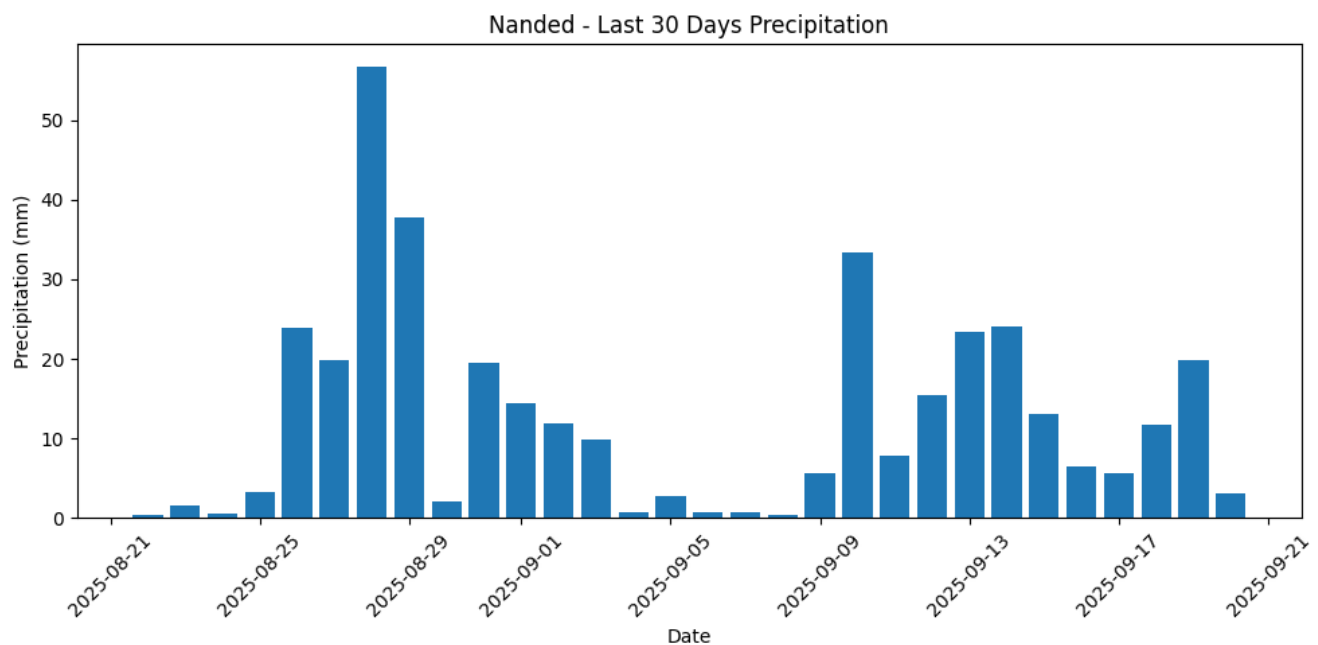
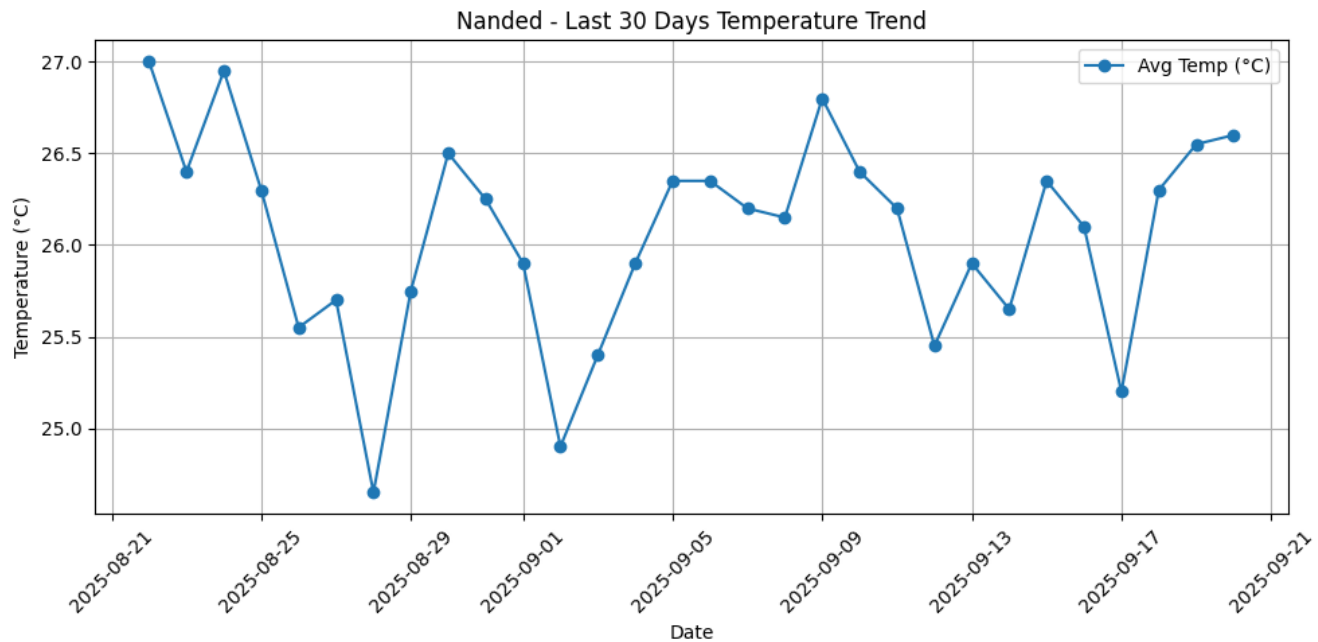
Objective 2: Create Databases in PostgreSQL

- Database Name: `smart_retail`
- Table Schema:

```
CREATE TABLE weather_data (  
    id SERIAL PRIMARY KEY,  
    city VARCHAR(50),  
    temperature FLOAT,  
    humidity FLOAT,  
    wind_speed FLOAT,  
    datetime DATE  
);
```

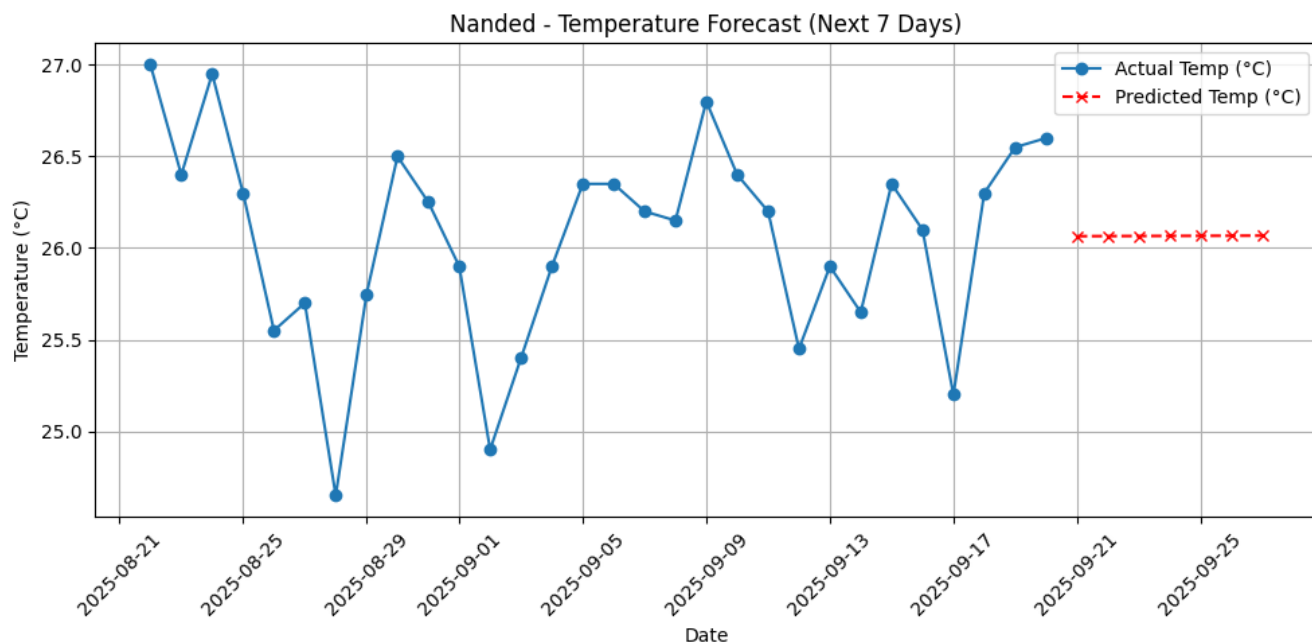
Objective 3: Implement visualization of weather data (last 30 days for one city)

- City Analyzed: **Nanded**
- Visualization Tool: **Matplotlib**
- Graph plotted: Temperature vs Date (actual last 30 days)



Objective 4: Use basic ML prediction models for forecasting

- Model: **Linear Regression (Scikit-Learn)**
- Trained on last 30 days temperature data.
- Forecasted **next 7 days temperatures**.
- Graph plotted: Actual vs Predicted.



5. GitHub Repository Link:

https://github.com/Prathmesh-stack/Prathmesh_Bhokare_Data_engg_capstone_project

6. Conclusion

- Successfully completed all objectives:
 - Live weather data fetched & stored in PostgreSQL
 - Database created with schema
 - Visualization for last 30 days done
 - Basic ML model applied for next 7-day forecasting