

# Weather Trends Visualizer

## Project Presentation

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GitHub Repository: [github.com/aamir2312res03/weather-trends-visualizer](https://github.com/aamir2312res03/weather-trends-visualizer)

## Problem Statement

Weather data collected over time contains valuable insights about climate patterns, temperature fluctuations, and environmental changes. However, raw data in tabular format is not easy to interpret. Visualizing weather data helps identify trends and anomalies efficiently.

# Objectives

1. Load weather data (CSV format) using pandas.
2. Create line charts to visualize daily temperature variations.
3. Generate bar charts for better comparative analysis.
4. Customize charts with labels, titles, and grids.
5. Save the charts as image files for future reference.

# Methodology

Step 1: Collect weather dataset in CSV format.

Step 2: Load the dataset using pandas.

Step 3: Visualize data with matplotlib.

Step 4: Add titles, axis labels, and grids.

Step 5: Save visualizations as images.

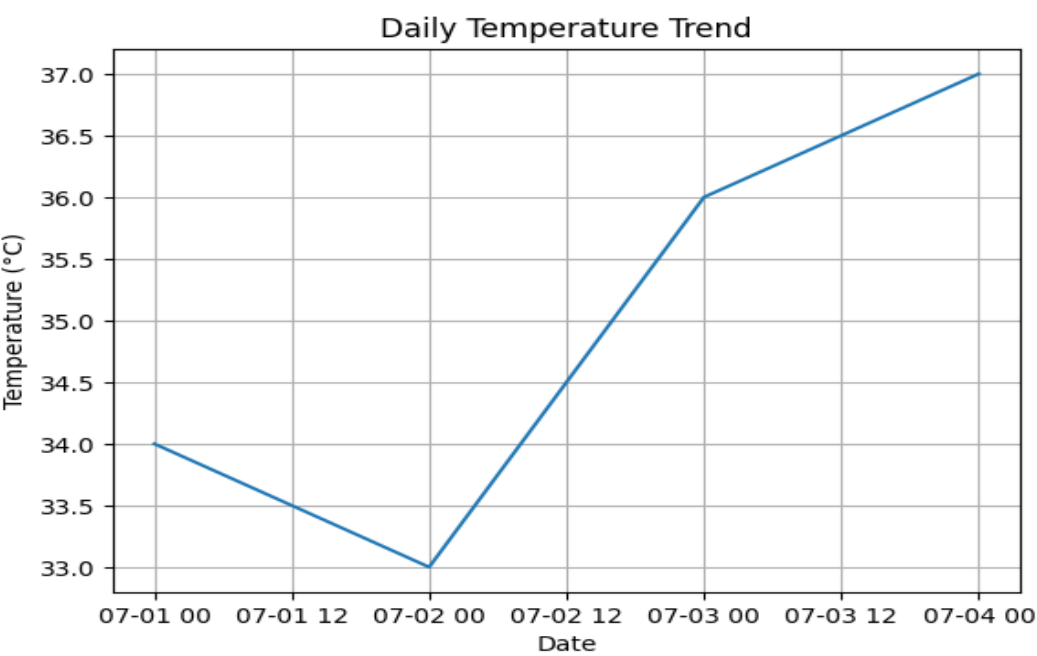
Step 6: Document the process and results.

# Tools & Libraries

- Python
- Google Colab
- Pandas
- Matplotlib
- GitHub for version control and project sharing

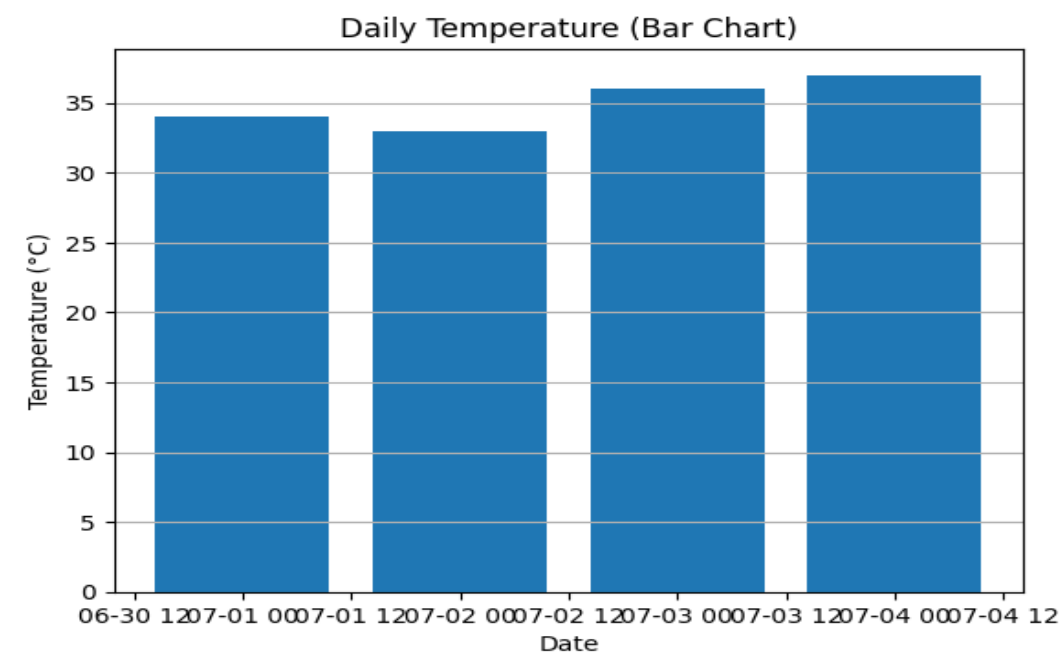
# Line Chart Visualization

The line chart shows temperature trends over time with peaks and dips clearly visible.



# Bar Chart Visualization

The bar chart provides a simple comparison of temperatures across different dates.



## **Results & Findings**

The visualization successfully demonstrates temperature variations. The charts make it easier to identify days with unusually high or low temperatures. This method can be extended to include other weather parameters like humidity, rainfall, etc.



# Challenges

1. Learning how to use pandas and matplotlib effectively.
2. Understanding how to read and parse CSV files.
3. Designing clear and readable visualizations.
4. Setting up GitHub and managing project files for submission.

## Conclusion

This project demonstrated the process of visualizing weather data using Python. It introduced the basics of data analysis with pandas, charting with matplotlib, and documenting results for academic and professional purposes. By using Google Colab and GitHub, the project was developed in a collaborative and reproducible way.

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