Problem Statement :

Climate Change Impact Analysis:- Problem Statement: "Analyze climate data to understand the impact of climate change"

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Climate Change Analysis: Krishnan Kovil & Srivilliputhur

This presentation explores the nuances of climate change, focusing on the specific examples of Krishnan Kovil and Srivilliputhur, two nearby areas in Tamil Nadu, India.

Climate Difference in Nearby Areas

Understanding the impact of climate change requires a regional lens. Focusing on the differences in climate between nearby areas provides crucial insights into the localized effects of this global phenomenon.

1 **Temperature Fluctuations**

Analyzing temperature trends in Krishnan Kovil and Srivilliputhur reveals distinct patterns, highlighting the potential impact of climate change on local ecosystems.

2 **Rainfall Variability**

Variations in rainfall patterns, including intensity and frequency, can significantly impact agriculture, water resources, and overall ecological balance.

3 **Impact on Biodiversity**

Climate change can alter habitats and ecosystems, leading to shifts in plant and animal populations, impacting local biodiversity.

Comparison of Krishnan Kovil and Srivilliputhur

Krishnan Kovil and Srivilliputhur, though geographically close, exhibit significant differences in climate due to factors such as elevation, vegetation, and proximity to water bodies.

Krishnan Kovil

Located at a higher altitude, Krishnan Kovil experiences cooler temperatures and higher rainfall compared to Srivilliputhur. The presence of hills and forests further influences the local microclimate.

Srivilliputhur

Srivilliputhur, situated in a lower elevation area, experiences hotter temperatures and lower rainfall. Its proximity to the Vaigai River contributes to its drier climate.

Factors Contributing to Climate Difference

Multiple factors contribute to the observed climate differences between Krishnan Kovil and Srivilliputhur. Understanding these factors is crucial for developing effective adaptation and mitigation strategies.

Factor	Krishnan Kovil	Srivilliputhur
Elevation	Higher	Lower
Vegetation	More forested	Less forested
Proximity to Water Bodies	Further from major rivers	Near the Vaigai River
Urbanization	Less urbanized	More urbanized

Data Collection Technique: Web Scraping and Browsing

Effective data collection is crucial for analyzing climate trends. Web scraping and browsing are valuable techniques for gathering relevant information from various sources.

Web Scraping

1 Automating data extraction from websites provides a systematic approach to gathering large datasets, enabling comprehensive analysis.

Data Cleaning and Processing

2 Once data is collected, it needs to be cleaned, processed, and formatted for analysis. This involves removing inconsistencies and errors, ensuring data integrity.

Visualization and Interpretation

3 Visualizing the collected data helps identify trends, patterns, and potential correlations, leading to deeper insights and informed conclusions.

Tools Used

Pandas

Pandas is a powerful Python library used for data manipulation and analysis. It provides data structures like DataFrame and Series that are flexible and easy to use for handling structured data (e.g., tabular data, time series). Key features include:
Data cleaning and preprocessing.
Efficient operations on large datasets.
Data wrangling and integration with other libraries like NumPy and Matplotlib.

Matplotlib

Matplotlib is a Python library for creating static, interactive, and animated visualizations. It provides a wide variety of chart types, including:
Line, bar, and scatter plots.
Histograms, heatmaps, and pie charts.
Highly customizable plots for publication-quality visuals.
Matplotlib is often used with libraries like Pandas or NumPy to visualize data easily.

Keras

Keras is an open-source deep learning library built on top of TensorFlow. It provides a high-level, user-friendly API for building and training neural networks. Keras is designed to enable fast experimentation and prototyping. Key features include:
Support for building complex deep learning models (e.g., convolutional and recurrent neural networks).
Pre-trained models for tasks like image classification and natural language processing.
Integration with TensorFlow for advanced capabilities like distributed training and deployment.

Comparison of temperature over year

Monthly Weather Forecast

May   June   July   August   September

Welcome to the Monthly Weather Forecast
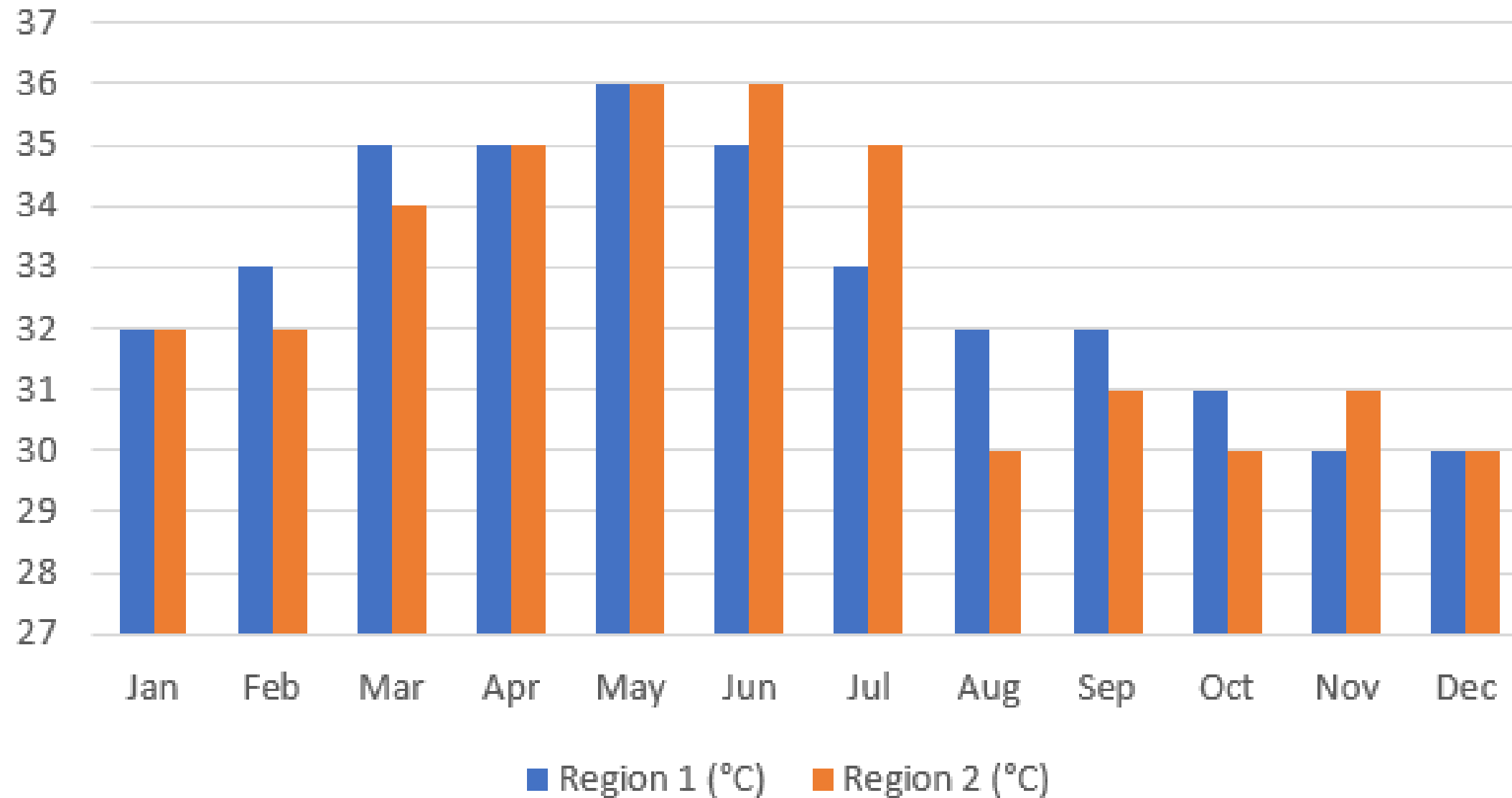
Get detailed weather predictions for each month! Just click on any month in the navigation menu above to see the weather forecast, including temperature plots, trends, and more!

May

Explore the weather forecast for May, with beautiful spring temperatures.

View May Forecast

June

Discover the sunny weather and summer-like conditions in June.

View June Forecast

July

Prepare for the heat in July with our detailed weather report.

View July Forecast

May Weather

May | June | July | August | September

Weather Forecast for May

Daily Temperature for May

Temperature (°C)

Day of the Month

May is typically a warm month, marking the transition into summer. Expect sunny days, but occasional showers could occur in some regions. Temperatures typically range from 20°C to 30°C, making it a great time for outdoor activities. Keep an eye out for sporadic rain showers, especially toward the end of the month. It's also a good time for planting and enjoying the outdoors, but don't forget to bring an umbrella just in case.

June Weather

May | June | July | August | September

Weather Forecast for June

Daily Temperature for June

Temperature (°C)

Day of the Month

June typically brings warm, sunny weather, with the start of summer in many regions. Expect higher temperatures, especially in the second half of the month. Occasional rain showers may still occur, but overall it is a perfect time for outdoor activities like hiking, swimming, and picnics. Temperatures generally range from 22°C to 30°C, depending on your location.