Team Name: COD

*Acronym Samples: Climate Onset Detectives*

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Title: “Local Climate Patterns”

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Project Report: Climate Trends and Variability: A 40-Year Analysis for Syracuse University

The main objective of this research project was to explore local climate patterns in the Syracuse University area. Our goal was to enhance our understanding of climate variations and their potential impacts on our region. It's worth noting that the project's timeline was subject to several adjustments based on data availability and our specific research requirement. However, our intention was to cover a historical period that could reveal any changes that might have occurred in the climate of this area over time.

**Problem Statement:**

While the global climate is influenced by a multitude of factors, each region around the world exhibits unique characteristics. Local climate patterns can be significantly affected by human-induced changes, such as urbanization and deforestation, both of which occurred in this area. The primary aim of this research was to gather data with the hope of identifying specific patterns, including those related to temperature, precipitation, and air quality. While we feel that this project only scratched the surface, there is potential for continued research that will unveil other information.

**Project Objectives:**

To Analyze Local Climate Trends: Our primary objective is to collect and analyze historical climate data for the Syracuse area to identify trends and patterns.

To Study Seasonal Variations: We will investigate seasonal variations in temperature, precipitation, and weather events.

**Scope of Work:**

The project will involve the following key activities:

* Data Collection: Gathering historical climate data from reputable sources, including local weather stations and relevant government agencies.
* Data Analysis: Utilizing statistical and data analysis tools to identify climate patterns and trends.
* Seasonal Variation Analysis: Studying how different seasons impact local climate, with a focus on temperature, precipitation, and extreme weather events.

**Conclusion:**

Our conclusion is that this climate observation study in the Syracuse University area has provided valuable insights into the local climate patterns over the examined period (40-Years). The data collected has allowed for a comprehensive analysis of temperature variations, precipitation trends, and humidity dynamics. The influence of human-induced changes, including urbanization and deforestation, on the local climate has been made clear. Through this research, a deeper understanding of the region's susceptibility to climate shifts and potential impacts has been achieved by the team.

The findings underscore the importance of ongoing climate monitoring efforts for informed decision-making and proactive measures. As our world continues to grapple with environmental challenges, the insights gained from this study contribute to the broader conversation on sustainable practices and resilience in the face of evolving climate conditions. Moving forward, the knowledge gained from this research can inform both local and global initiatives aimed at mitigating climate-related risks and fostering a more sustainable future.