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DSC450-T301 Applied Data Science  
Week 4: Project 1 – Milestone 3 – (Stakeholder Q&A)

1. Q: Why did you choose these three specific climate indicators?

A: They are widely accepted climate change benchmarks and provide a clear view of atmospheric and oceanic changes over time.

1. Q: What is the strongest relationship you found in the data?

A: The correlation between atmospheric CO₂ and global temperature anomalies, which exceeded 0.85, suggests a strong linear relationship.

1. Q: How reliable are these public datasets?

A: We used sources such as NASA and NOAA, which are peer-reviewed, consistently updated, and globally recognized.

1. Q: Did you consider seasonality or external variables?

A: Not in depth, but seasonal and event-based anomalies like El Niño are potential extensions for future analysis.

1. Q: Could there be causation, or only correlation?

A: Our analysis demonstrates correlation. Causation would require additional multivariate or physical modeling.

1. Q: What tools did your team use to process and visualize the data?

A: Python with Jupyter Notebooks, using Pandas for wrangling and Matplotlib/Seaborn for visualization.

1. Q: What time range was most informative?

A: Post-1950 data showed the most pronounced trends and clearer relationships among variables.

1. Q: How do the projections in the scenarios that were outlined align with globally recognized standards?

A: The emission scenarios mirror IPCC Representative Concentration Pathways (RCPs). The high emissions reflect RCP8.5, where CO₂ exceeds 450 ppm. For low emissions, RCP2.6 assumes stabilization near 400 ppm. Having this alignment ensures that temperature and sea level projections are comparable to global planning frameworks.

1. Q: How were you able to account for uncertainty?

A: Uncertainty was addressed on multiple levels. Model validation could be seen in the form of train/test splits, residuals, and confidence intervals; scenario variability aided in projections across multiple pathways for both CO₂ and sea level; and temporal dynamics like change point detection were used. Additionally of note, limitations of public datasets were considered during interpretation.

1. Q: Were key stakeholders or domain experts involved?

A: While not directly involved, indicator choices were validated with globally recognized standards and findings were visualized using accessible tools. This allows us to generalize real-world applications for policy, education, and planning.