**Names of your teammates, or specify if you are working independently**

* Tommy Steele
* Michael Carnival
* Gianyce Gesualdo

Team name: *Time-Series Compute*

**Research topic you will focus on for the remainder of the semester**

*Explorations Of Time Series Analysis Techniques and Forecasting Methods on Real-World Applications.*

**Mathematical/Statistical methods you plan to use in the capstone**

*Planned Models*

* ARIMA
* SARIMA
* Prophet
* Holt's linear
* Holt's Winter
* ETS (Exponential Smoothing State Space Model)
* Bayesian Structural Time Series (BTST)
* Vector Autoregression (VAR)

*Potential Models*

* LSTNET
* LSTM
* ARIMAX

**Preferred programming language(s) for the project**

* Python
* R programming

**Source and method of obtaining your dataset**

* Kaggle
* Economic policy institute
* US Census
* (Potentially) data.gov
* Wid.world/data

**Potential references, including tentative ones**

* Modeling Long- and Short-Term Temporal Patterns with Deep Neural Networks
* A comparative machine learning study for time series oil production forecasting: ARIMA, LSTM, and Prophet
* Neural Network Entropy (NNetEn): Entropy-Based EEG Signal and Chaotic Time Series Classification, Python Package for NNetEn Calculation
* Automatic COVID-19 prediction using explainable machine learning techniques
* Predicting the New Cases of Coronavirus [COVID-19] in India by Using Time Series Analysis as Machine Learning Model in Python
* Sustainable and intelligent time-series models for epidemic disease forecasting and analysis
* (Tentative) A state space framework for automatic forecasting using exponential smoothing methods
* (Tentative) Bayesian Structural Time Series Models (https://research.google.com/pubs/archive/41854.pdf)
* (Tenative) Forecasting COVID-19 cases using time series modeling and association rule mining.
* (Tentative) An Overview of Forecast Analysis with ARIMA Models during the COVID-19 Pandemic: Methodology and Case Study in Brazil.
* (Tentative) Complete Guide on Time Series Analysis in Python (https://www.kaggle.com/code/prashant111/complete-guide-on-time-series-analysis-in-python)