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)