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Project Proposal

Intro the topic

We will develop a supervised Machine Learning algorithm to predict PADD Natural Gas Prices. PADDs are geographic aggregations of the 50 States and the District of Columbia into five districts: PADD 1 is the East Coast, PADD 2 the Midwest, PADD 3 the Gulf Coast, PADD 4 the Rocky Mountain Region, and PADD 5 the West Coast. The target, Natural Gas Price in each PADD and the features which are all continuous numeric variables implies we will be using a regression algorithm. Using explicit inputs and outputs to derive our parameters will make prediction simpler for us.

We agreed on our project, we are going to predict natural gas prices in the continental United States. We are pulling our data from the Energy Information Administration. We plan on going through the EDA process over Memorial Day weekend and begin modeling with the Supervised Learning, Linear Regression, steps we learned in the Bootcamp. We will also begin the Visuals and dashboards after the group agrees on the final dataset for the project.

Inspiration

We want to understand the drivers of Natural Gas prices in North America.

Colors

For our color pallet we will be using earth tones since our topic revolves around natural resources.

What you are predicting

We will be predicting the price of Natural Gas in Petroleum Administration for Defense Districts (PADDs).

Basic design concepts for dashboard

The Energy Information Administration will inspire the dashboards we will create.

1. A plot of Natural Gas Prices over time
2. A plot of Natural Gas prices and consumption over time
3. A plot of Natural Gas production over time

Roles and responsibilities

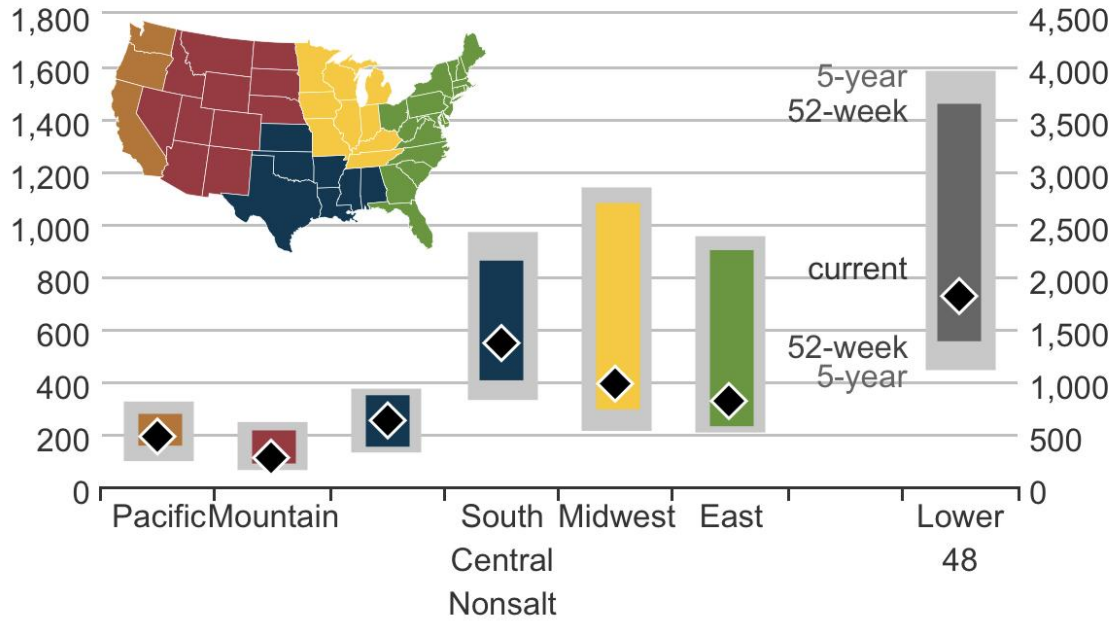
Joseph will cover EDA and ML modeling, Calvin will build the website and Nick will build the Tableau dashboard.

Inspiration Links and Images

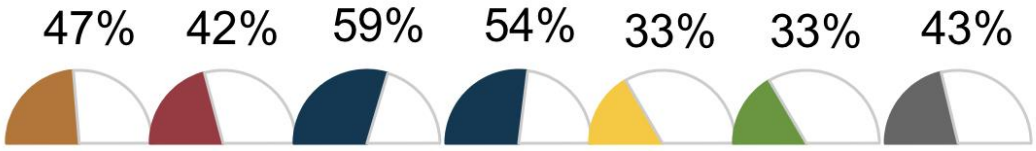
- https://www.eia.gov/naturalgas/storage/dashboard/
- https://www.kaggle.com/datasets/arbethi/natural-gas-price-forecasting

Underground working natural gas storage summary as of May 20, 2022

billion cubic feet



Underground storage capacity utilization



Lower 48 weekly working gas stocks, minus five-year average, and near-month futures prices

price of gas at the Henry Hub in dollars per million British thermal un