Title: Federal Funds Rates Impact on the NASDAQ

Group Members:

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Description:

What impact does the Federal Funds rate have on the NASDAQ? We are going to pull the federal funds rate data from the FED website and compare it to the value of the NASDAQ over time to determine if the federal funds rate is correlated with the value of the NASDAQ.

Research Question:

The Federal Funds rate does not impact the growth rate of the NASDAQ

Datasets to be used:

Federal Funds Rate Dataset: https://fred.stlouisfed.org/series/FEDFUNDS

NASDAQ:

* [Financial and Alternative Data API | Nasdaq Data Link](https://data.nasdaq.com/tools/api)
* <https://marketstack.com/>
* Etc. – will take advice on better api to use

Rough Breakdown of Tasks:

* Determine data timepoints
* Import apis
* Create pandas DF
* Charts:
  + Line graph: Fed Funds vs Time
  + Line graphs: Overall Index Valuation vs Time
  + Line graph: Index Value Growth Rate vs Time
  + Line graph: Fed Funds Rate
  + Box Plot:
  + Regression Line
  + Correlation Coefficient
* Data Cleanup
* Calculated Statistics
  + Mean Median Mode: Fed Funds Rate, NASDAQ Value

Presentation:

* Opening (2m) (Jose)
  + Overview of project
    - What is the Fed Funds Rate
    - What is the NASDAQ
    - What is the SP500
    - What is the DowJones
    - How do they all come together
  + Hypothesis
* Data Cleaning & Wrangling (4m) (Sierra)
  + Where we got our data
  + Data Types and variables
  + Data Cleaning
  + Explanation of data
    - Tables
    - Dataframes
    - Timeframe
* Data Analysis (7m)
  + Starters (2m) (Adrian)
    - Combined indexes vs Time
  + Mid (1m) (Adrian)
    - Fed Funds vs NASDAQ percent change monthly plots
  + Bonus (Adrian)
    - Combined: NASDAQ, SP500, DJ vs time
    - Combined: NASDAQ, SP500, DJ % Change vs Fed Funds Scatterplot
  + Statistical Analysis (4m)
    - PValue (Jose)
    - Regression plot (Jose)
    - Box plot (Cameron)
    - Correlation Coefficient (Cameron)
* Conclusion (3m) (Cameron)
  + Limitations
  + Conclusion Analysis

To Do:

* Percent Change Dataframe
  + Dow
  + NASDAQ
  + SP500
* Write CSV
* Create Dataframes in Visualization file from csv
* Statistical Analysis
  + P-value
  + Regression plot
  + Correlation coefficient
  + Box-Plot