# Project Title:

# Affect of day of the week, observed national Holidays and long weekend on stock price by the stock sectors

## Team Members:

Alex Burch, Rodney Kirkendoll, Sunil Joshi, Martin Hrbac, Serena Leung, Roderick Reynolds

### Project Description and Outline:

The project evaluates relation between stock price movement for the days preceding non the trading days by the stock sectors.

### Research Questions to Answer:

Do weekends and holidays affect the stock price?

Do different sectors get affected differently?

Does the relation change during the prolong time period, in the scale of decades?

**Hypotheses:**

Null Hypothesis: Weekends have no impact on the stock market

Alternative Hypothesis: Price movement is related to trading date and varies by the stock sector

### Datasets to be used:

Kaggle Huge Stock Market Dataset: See [link](https://www.kaggle.com/borismarjanovic/price-volume-data-for-all-us-stocks-etfs).

Yahoo finance API. [Link](https://finance.yahoo.com/quote/%5EGSPC/history?period1=946702800&period2=1563595200&interval=1d&filter=history&frequency=1d)

Federal Holidays USA: <https://www.kaggle.com/gsnehaa21/federal-holidays-usa-19662020>

### Rough breakout of tasks:

1. Gather data
2. Python/Pandas/Jupyter Notebook coding
   1. Clean data
      1. Merge 11 datasets, remove nulls
   2. Descriptive statistics
      1. Look at means, standard deviations, minimum, maximum by Ticker
   3. Visualizations
      1. Line chart by ticker, overlay Fridays as dot plot
      2. Box plot by ticker
      3. Scatter plot of % change from Friday to Monday vs % change from Monday to Thursday
      4. % changes Friday to Monday vs Monday to Thursday on a bar chart by ticker and overall
   4. Statistical analysis
      1. We will compare Thursday close to Monday Close % change to Monday close to Thursday close % change by ticker for entire time period
      2. 12 t-tests: mean for all 11 tickers (Friday to Monday vs mon to Thursday))
   5. Linear regression model
3. PowerPoint summary