# Project Title:

# Effect of day of the week on stock price by the stock sectors

## Team Members:

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### 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 affect the stock price? Are different sectors affected differently?

**Hypotheses:**

Holding Periods of Interest:

Weekend Hug: Thurs 4pm Close – following Mon 4pm Close

Mid-Week: Mon 4pm Close – following Thurs 4pm Close

Hypothesis #1: Considering the 11 S&P sectors as a group, buying Monday’s close and selling on Thursday’s close (Mid-Week) achieves higher average return than buying Thursday’s close and selling on Monday’s close (Weekend Hug).

Null Hypothesis (Ho): There is no relationship between average returns and buying and selling over these two periods of interest from 1/3/2000 through 7/19/2019.

Hypothesis #2: Considering the 11 S&P sectors individually, buying Monday’s close and selling on Thursday’s close (Mid-Week) achieves higher average return than buying Thursday’s close and selling on Monday’s close (Weekend Hug).

Null Hypothesis (Ho): There is no relationship between average returns and buying and selling over these two periods of interest from 1/3/2000 through 7/19/2019.

### 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
      2. Box plot by ticker
      3. % 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))
3. PowerPoint summary