# Goal

The goal of this project is to determine if the trend of positive or negative tweets about bitcoin can significantly predict the trend of bitcoin’s price index (BPI).

# Procedure

1. Construct a database.
   1. Sentiment Table:
      1. Date, sentiment, and certainty of prediction.
   2. BPI Table:
      1. Date and price index.
2. Extract tweets containing “bitcoin” using the Twitter API.
3. Analyze the sentiment of each tweet using the Aylien API and store in the database.
   1. Manually determine the positive/negative sentiment of 20 tweets.
   2. Calculate the accuracy of the API.
4. Extract the bitcoin price index using the Coindesk API and store in the database.
5. Perform Granger Causality test between the sentiment time series and the BPI time series.
   1. <https://www.wessa.net/rwasp_grangercausality.wasp>
   2. <https://en.wikipedia.org/wiki/Granger_causality>
6. Display statistics and data within plots.

# APIs

* [Twitter API](https://developer.twitter.com/en/docs/tweets/search/api-reference/get-search-tweets.html) – Gordan Beakman
* [Aylien text analysis API](https://developer.aylien.com/text-api-demo?text=&language=en&tab=sentiment&mode=document) – Joseph Scavetta
* [Coindesk API](https://www.coindesk.com/api/) – Joseph Scavetta

# Platform Options

* Java application
* C# xaml application
* R Script
* Web service

# Schedule

* 1/26 – Go over procedure
* 2/02 – Complete project proposal
* 2/09 – Collecting & analyzing tweets: establish connections
* 2/16 – Collecting & analyzing tweets: establish connections
* 2/23 – Storing BPI: establish connections **(Stage 1 Update)**
* 3/02 – Setup Database
* 3/09 – Collecting & analyzing tweets: integrate together
* 3/16 – Collecting & analyzing tweets: integrate together
* 3/23 – Storing BPI: integrate **(Stage 2 Update)**
* 3/30 – Statistics
* 4/06 – Data visualization
* 4/13 – Data visualization **(Stage 3 Update)**
* 4/20 – Create Presentation
* 4/27 – Final Presentation
* 5/04 – Detail Report