Sentiment Analysis on Social Media

E6998 CLOUD COMPUTING

TEAM#14 Project-TA: Peter

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Outline

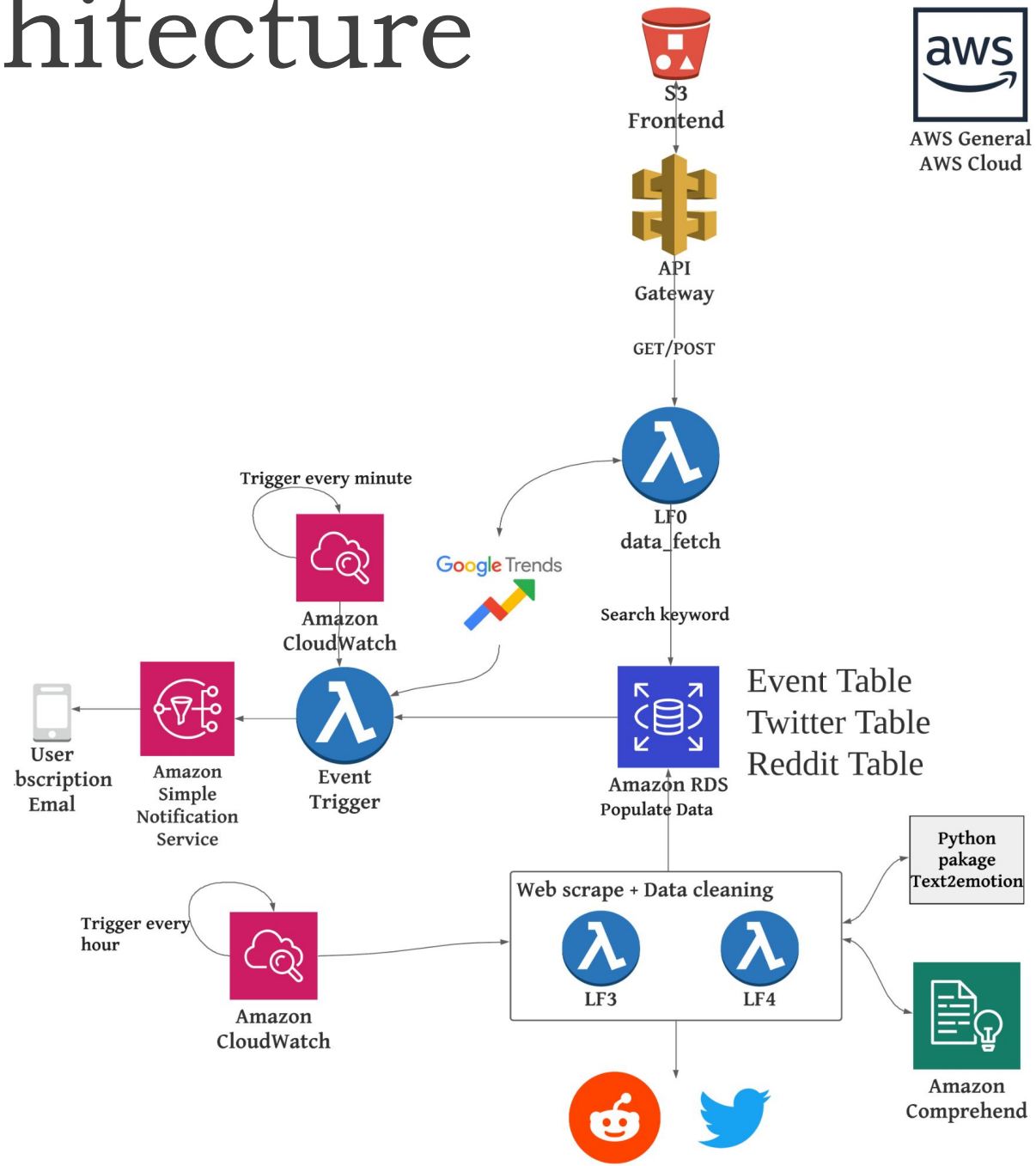
- Introduction
  - Project Purpose
  - Novelty and Value
  - Cloud Architecture (Completeness)
  - Key Results
- Live Demo
- QA Time

Product URL: https://cc-project-frontend.s3.amazonaws.com/index.html

Novelty and Value

- Analyze stock discussions cross platforms (Reddit, Twitter, Google Search Trend)
- Metrics (metric design based on literature)
  - Emotion analysis
  - Sentiment analysis
  - Popularity analysis
- User subscription for their interested stock keywords and custom thresholds for all metrics

Cloud Architecture

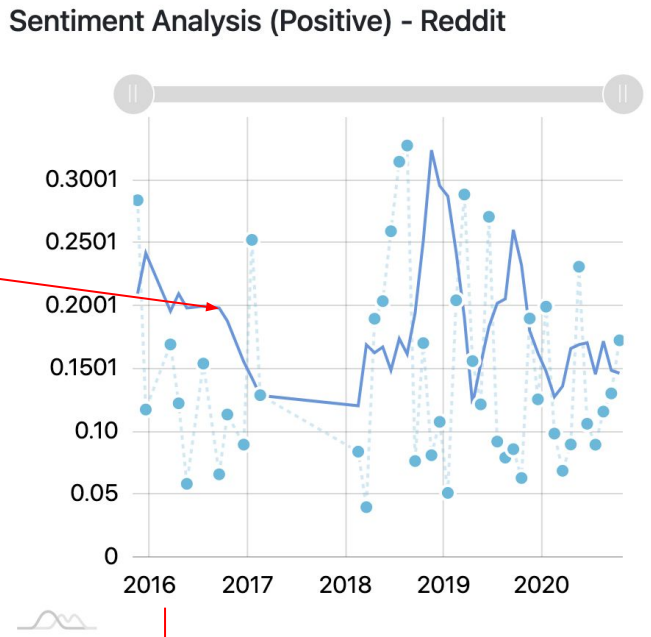


Metrics

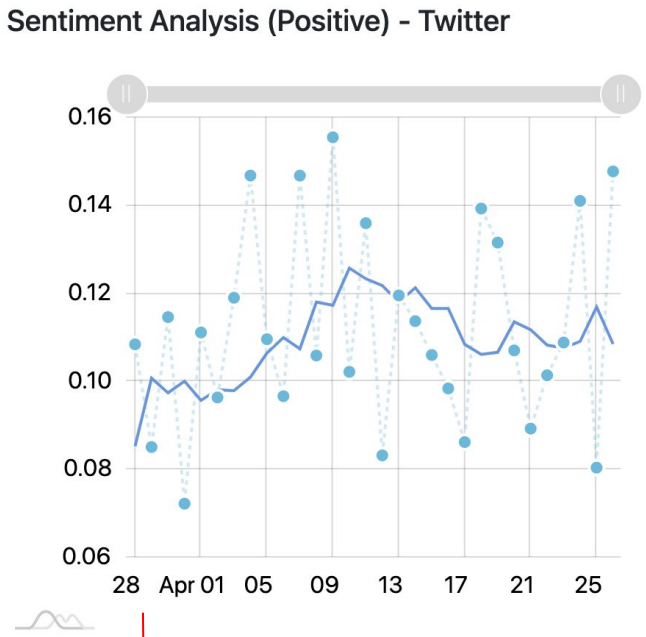
- Data Source
  - Reddit: subreddits
  - Twitter: tags
  - Google Search Trend
- Emotion Analysis
  - Data Source: Reddit, Twitter
  - Type: Happy, Angry, Surprise, Sad, Fear
- Sentiment Analysis
  - Data Source: Reddit, Twitter
  - Type: Positive, Negative, Neutral, Mixed
- Popularity Analysis
  - Data Source: Google Search Trend

Sentiment & Emotion

- Moving Average: (blue line)
  - If 1 ~ 12 months chart: display 7 days moving average.
  - If 1 ~ 5 years chart: display 4 months moving average.

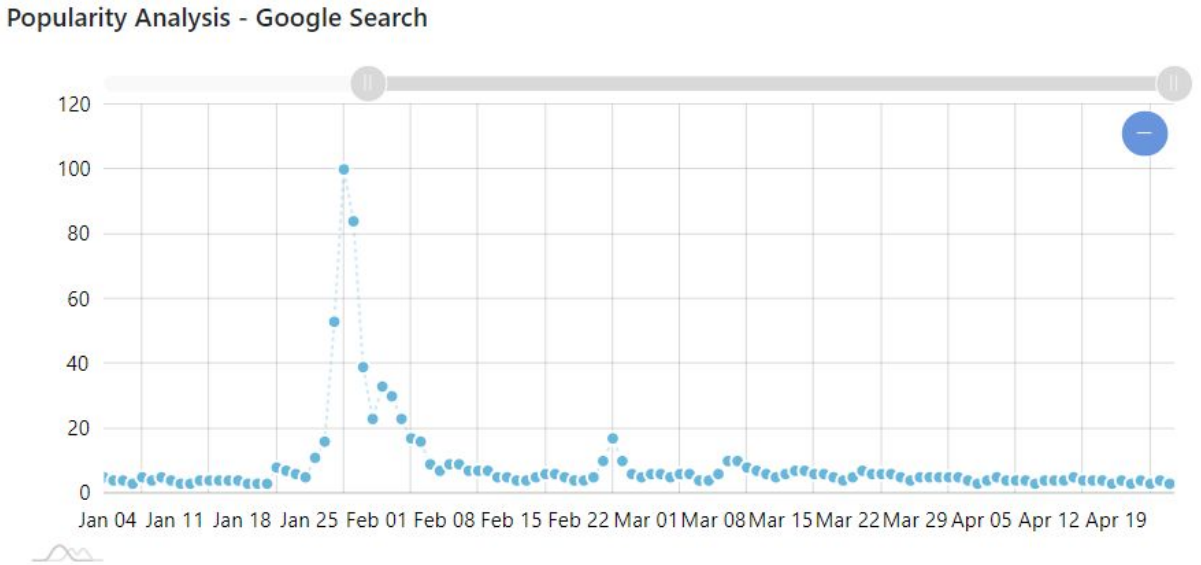


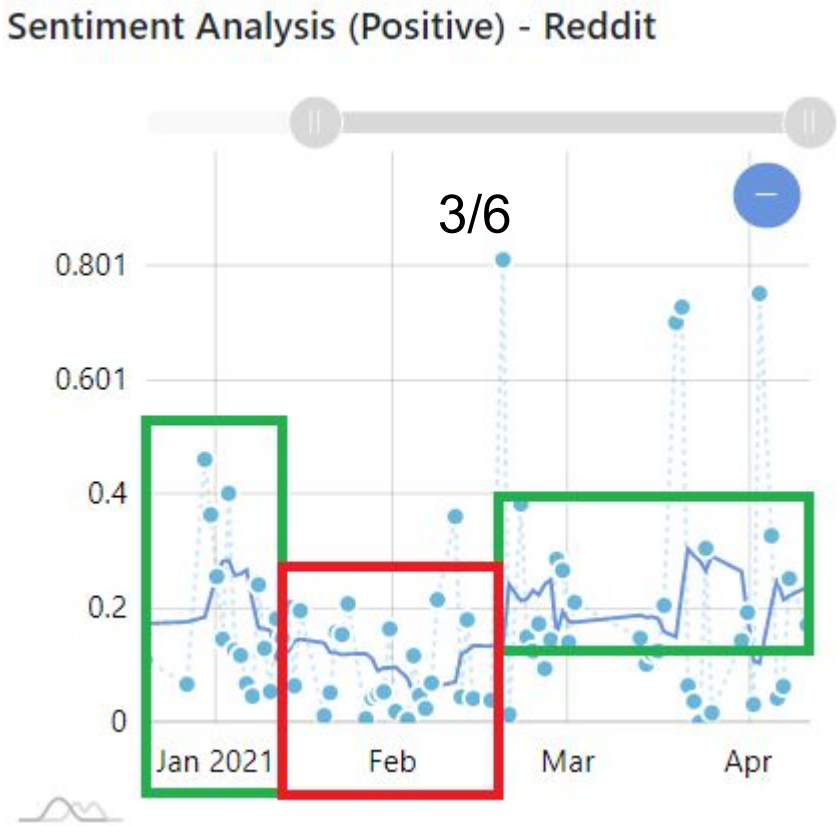
Reddit can show data for the last five years at most



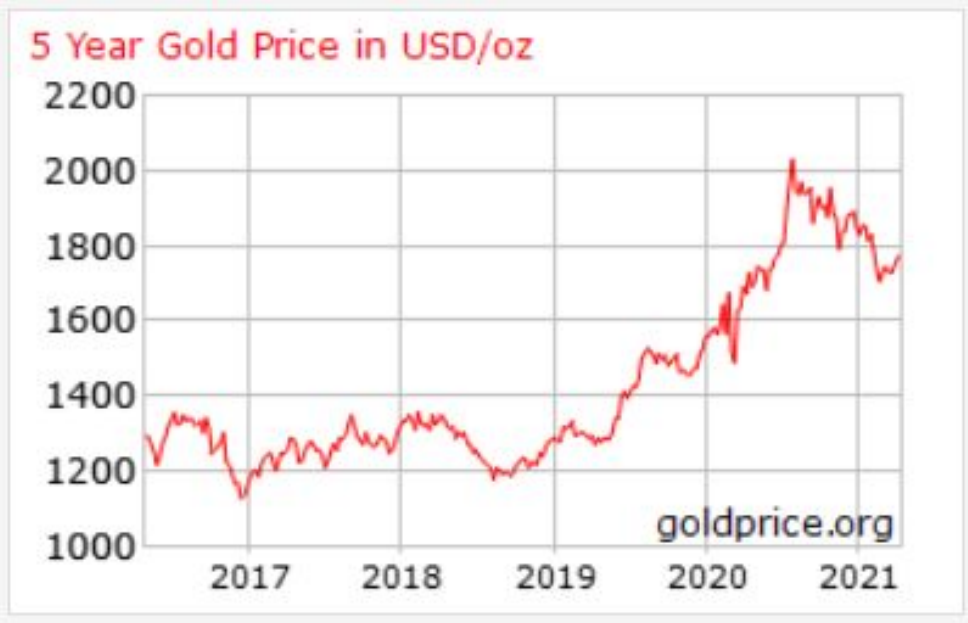
Twitter shows one month's data (due to the high volume of Twitter data)

Correlation (Gamestop)

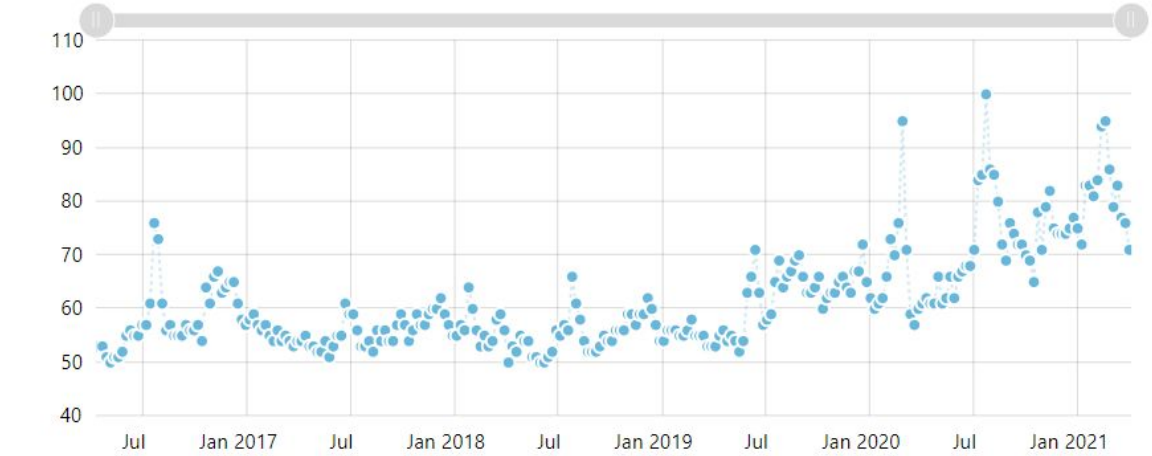




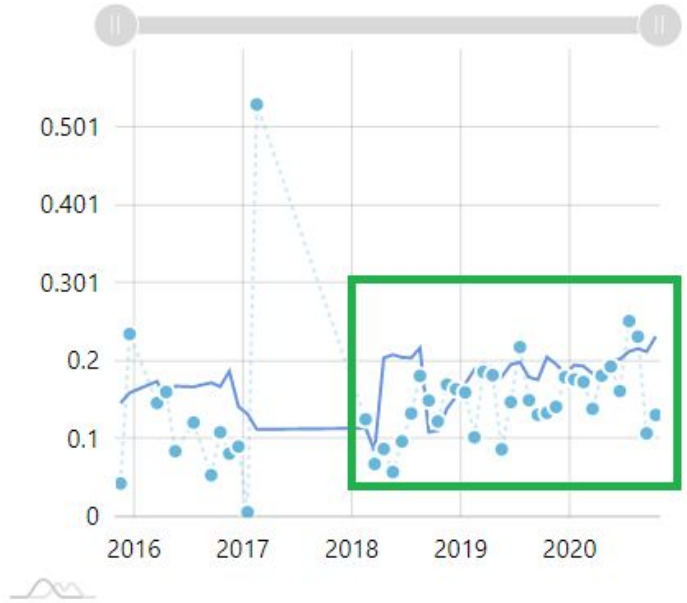
Correlation (Gold)



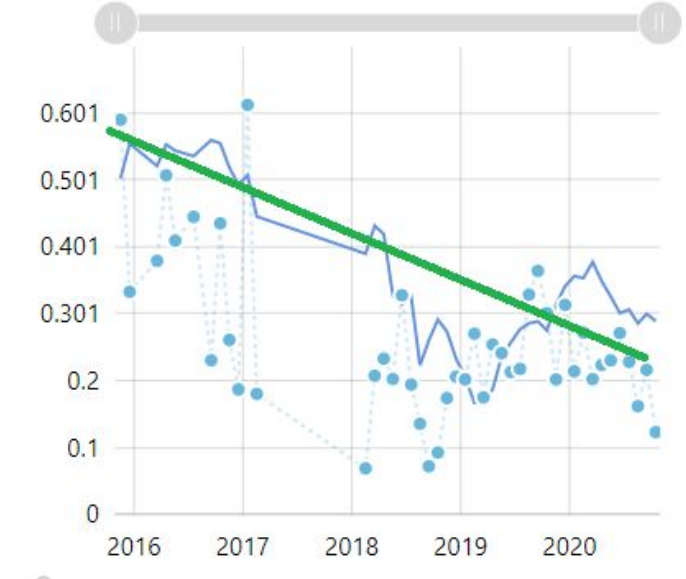
Popularity Analysis - Google Search



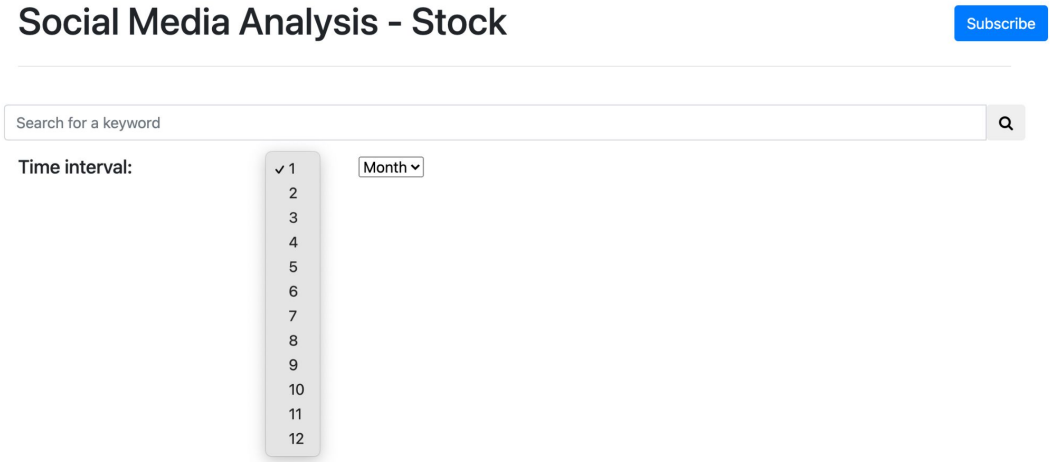
Sentiment Analysis (Positive) - Reddit



Sentiment Analysis (Negative) - Reddit

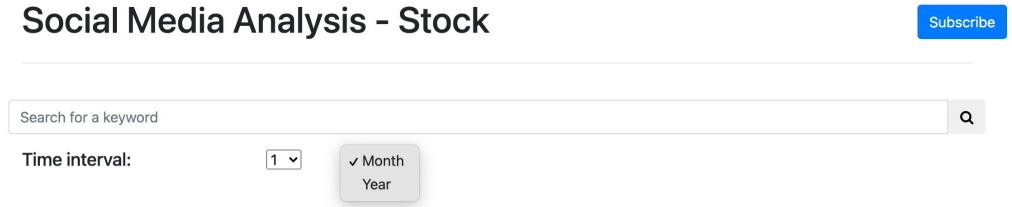


❑ Front-end interface

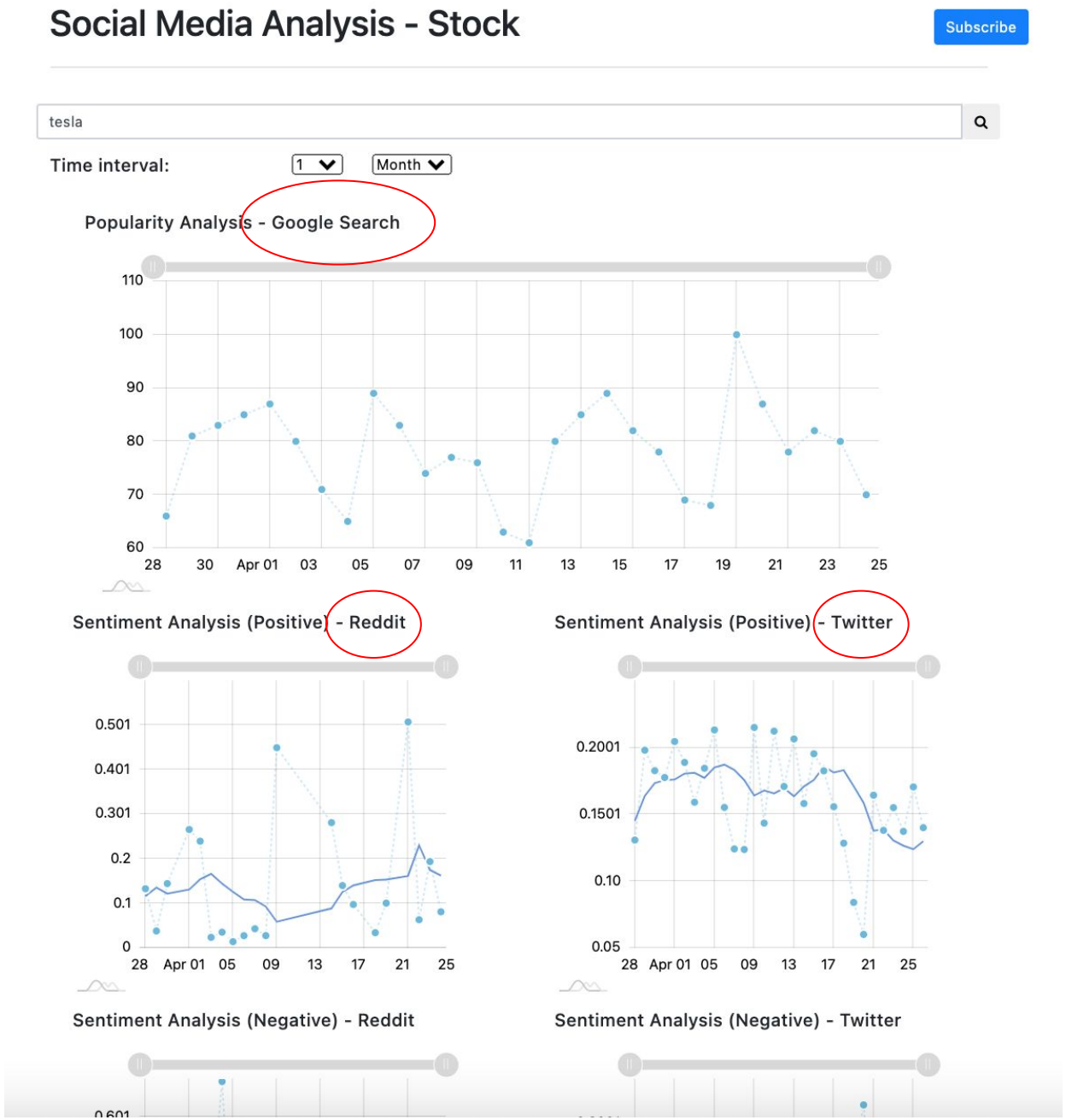


❑ Available keywords in database:

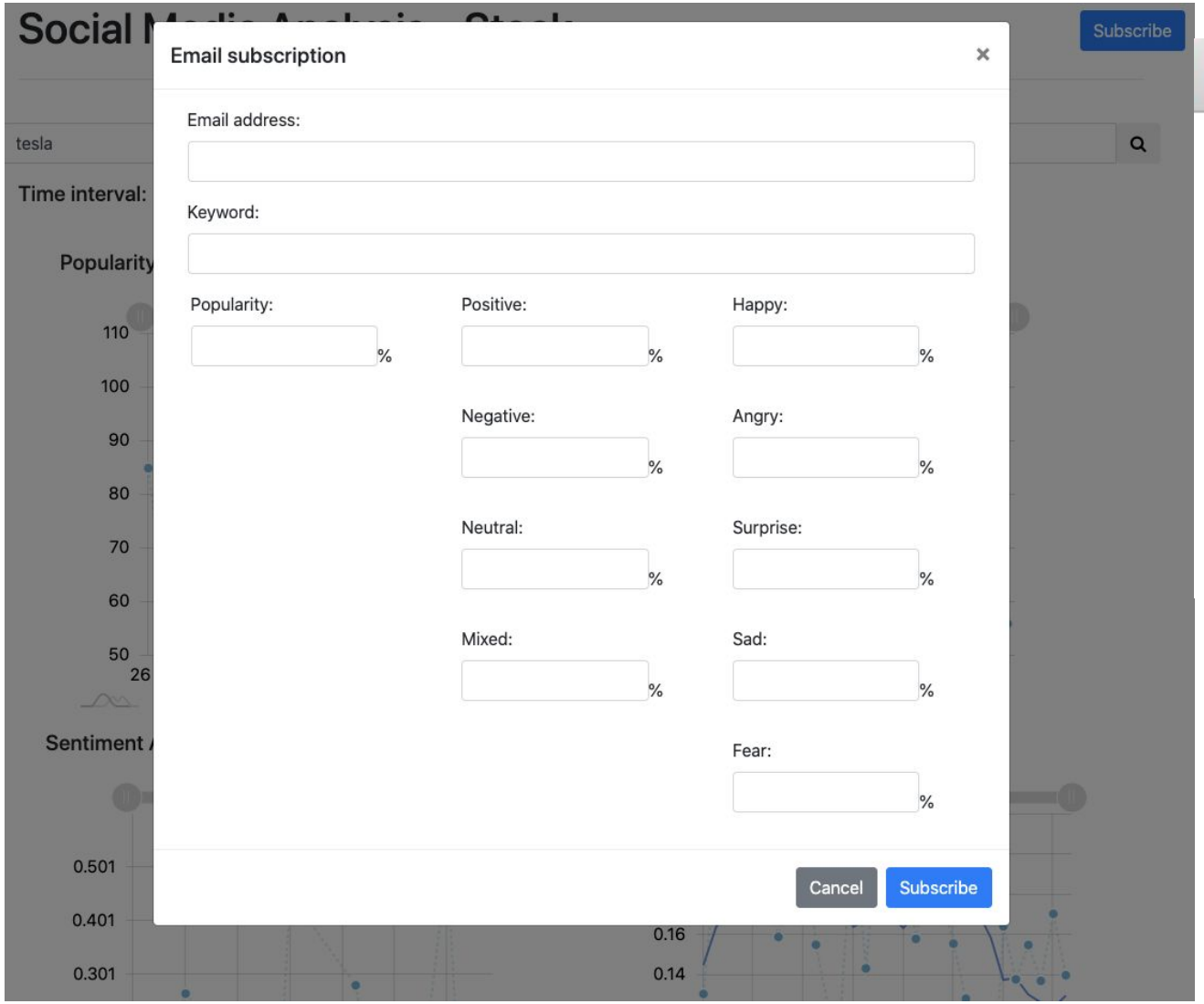
1. tesla
2. apple
3. google
4. amazon
5. yahoo
6. facebook
7. nvidia
8. gold
9. oil
10. GameStop

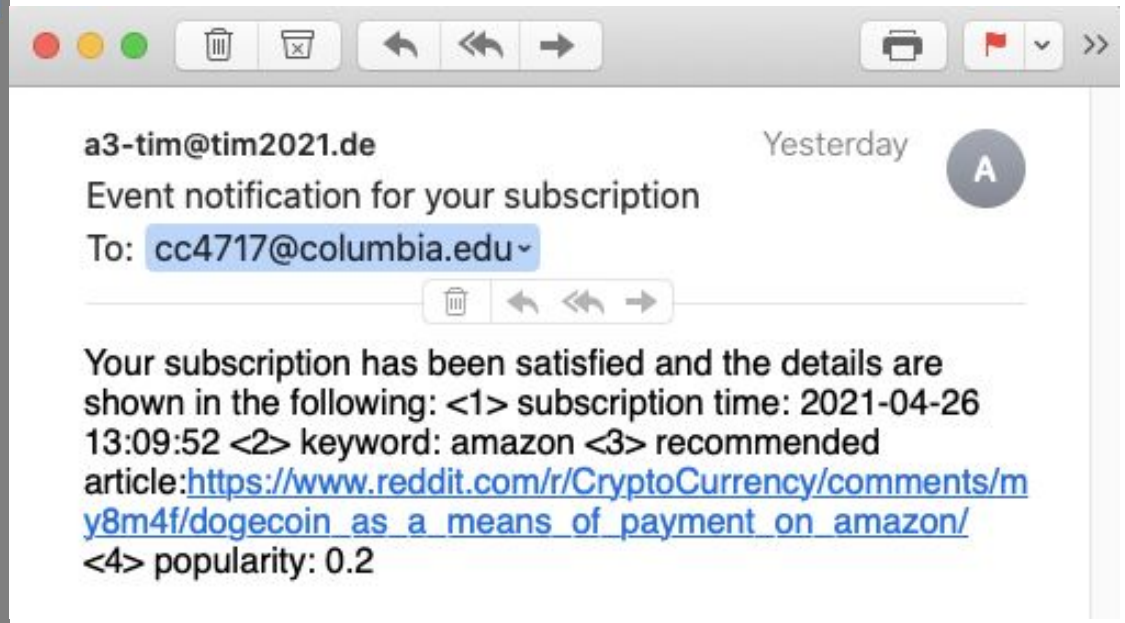


❑ Front-end interface — Result



User Subscription





Future Work/Improvements

1. Front End Data Display
2. Increase Search Pool
3. Noise Filtering
4. Linear Regression Analysis
5. User Trust Scores

Thank You.

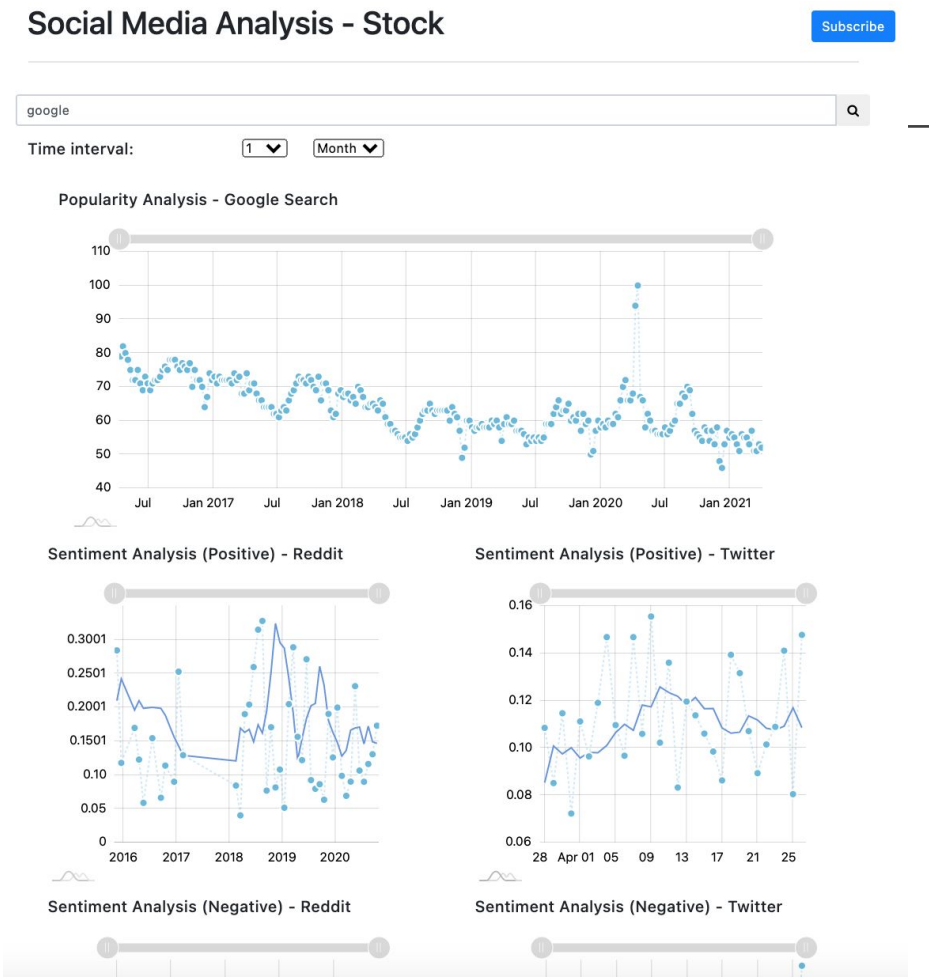
Live Demo and QA

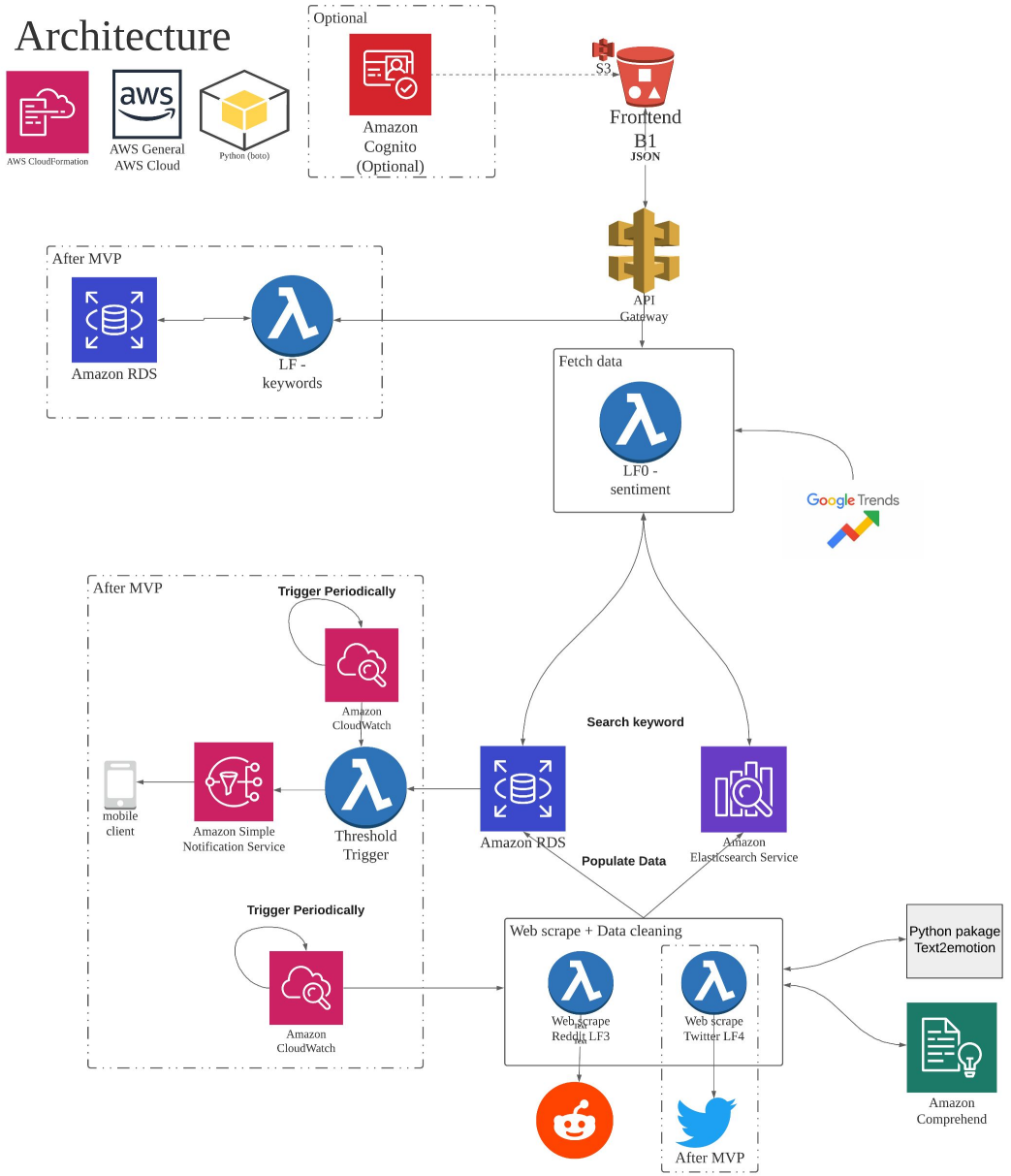
MVP slides

Team14

Metrics

1. Popularity
2. Sentiment
    1. Positive
    2. Negative
    3. Neural
    4. Mixed
3. Emotion
    1. Happy
    2. Angry
    3. Surprise
    4. Sad
    5. Fear





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Social Media Opinion Analysis - Stock

Tim (sk4920), Tal (tiz2102), Rex (cl4114), Yin (cc4717)

About Our Project:

1. Analyze posts on social media
2. Metric: emotion, sentiment, and popularity analysis
3. Google Search, Reddit, Twitter

What We've Done So Far:

1. Finished frontend
2. Scraped from Google Search, Reddit)
3. Built metrics

What We're Planning To Do:

1. Scrape tweets from Twitter
2. Create event trigger for scraping
3. Stock search history (Ranking)
4. Cognito user login