CS410 - Group Project
Purpose

Verify the accuracy and validity of different news sources regarding Financial Status of Companies.
Existing Resources

- Google Finance
- Twitter Market
Implementation

Data Conversion + Processing

Scoring Function

List → JSON {Dictionaries}

JSON → List

Data Conversion + Processing

bing
AlchemyAPI™
NASDAQ®
MATHEMATICAL IMPLEMENTATION

\[ \text{Stock Value} = \sum (SD[t] - SD[t-1])/SD[t] \cdot 2 \cdot \sqrt{2/\pi} \cdot e^{-(t/\max_t)^2} \cdot (t/\max_t)^2 \cdot (1/ \log_2(t + 1)) \]

Penalties -> Boltzmann Distribution, Log Penalty.

\[ F_R = \alpha * (\text{Sent Value}/\text{Stock Value}) + (1 - \alpha) * (\text{Rel Value}) \quad \{\alpha = .4\} \quad \text{(Smoothed)} \]

→ \( a (= t_{\text{max}}) = 2 \text{ weeks} \)

→ Plot - Penalty Functions
Effectiveness

- Title $\neq$ Accuracy of Article.
- => Focus on Accuracy + Relevance, No Focus on Raw TF + Title.
- Our function does NOT scan through each article => Easy crawling and computation (But lots of computation).
Improvement Suggestions

● **Speed** - Computational time high.
● **Dependency on API** - NLP requirement high.
● **News Corpus** - Limited. Time scale is small.
● **UI** - Not user friendly, Need more storage to create Graphs.
Major Improvement Option:

➢ Make Stock Prediction using the Data by combining with HMM & Fourier Analysis.

Monday, October 19, 1987 ->
Demo

Search Engine
Apple

Daimler to Cut Mercedes-Benz Parts Prices in China By Unknown With Score -2.87507748572

Exclusive: Goldman group set to buy message system as alternative to Bloomberg - sources By Unknown With Score -21.981242450814996

Wall St banks to buy non-Bloomberg message system By Unknown With Score -23.286898997465

Microsoft Sues Samsung Over Patent Licensing Agreement By Unknown With Score -9.50069603839

APNewsBreak: Corps agrees to monitor dam pollution By Unknown With Score 0

Apple $450 million e-book settlement wins court approval By Unknown With Score -34.589717847266

Apple weighed down in after hours on iPad sales drop By Unknown With Score -9.84234320645

Apple Hints New Products Near With Bigger iPhones Looming By Unknown With Score -57.61731739553999

NY investigates mortgage firm's $86 million sale By Unknown With Score -15.608468719240001

Apple pushes S&P 500 to record close; Boeing hits Dow By Unknown With Score -14.793266763670939

Apple margin concerns fade, focus shifts to iPhone launch By Unknown With Score -39.56866322321667

Apple wins court approval to settle e-book claims for US$450m By Unknown With Score -31.8347380384

U.S. Equity Futures Eye Higher Opening By Unknown With Score -18.31103479878

TECH STOCKS: Apple, Microsoft On The Rise With Earnings On Tap By Unknown With Score 4.256044784199332

Chenming expects high operating profit on Apple orders By Unknown With Score 12.9567456762
Q&A

- Design
- Implementation
- Challenges