

```
$ streamlit run main.py
```

Choose the app

Welcome



Update Database

# TrendTeller Stock Insights

## Welcome to TrendTeller Stock Insights! 🙌

### 🌟 Discover Market Sentiment with Ease! 🌟

This application seamlessly integrates sentiment analysis, topic modeling, and correlation analysis with interactive data visualizations in a single, intuitive dashboard. By analyzing sentiment from both news headlines and StockTwits comments, it uncovers hidden trends and their correlations with stock prices and trading volumes. Through a user-friendly interface, the dashboard provides real-time visualizations that not only reveal sentiment trends but also highlight the relationship between public opinion and stock market performance. Whether you're an investor, analyst, or researcher, this tool empowers you with a data-driven approach to understanding the forces shaping the financial landscape, making it easier to make informed decisions.

### 🚀 Key Features:

- 🔍 **Sentiment Analysis:** Understand public sentiment on news and StockTwits comments.
- 📊 **Topic Modeling (LDA):** Identify key themes and ongoing discussions.
- 🌈 **Data Visualization:** Visualize both topics and sentiment trends in a clear, interactive way.

# Select app

Choose the app

Welcome

Welcome

CSV Viewer

News Scraper Sentiment Analysis

Stock Data Fetcher

StockTwits Comment Sentiment Analysis

Topic Modeling LDA Analysis

Sentiment Report

# Data Collection

Choose the app

News Scraper Sentiment Analysis



Update Database

# TrendTeller Stock Insights

## News Scraper Sentiment Analysis

Retrieve news headlines based on your search query from the past 24 hours.

Enter what you'd like to search for on Google News

Number of News

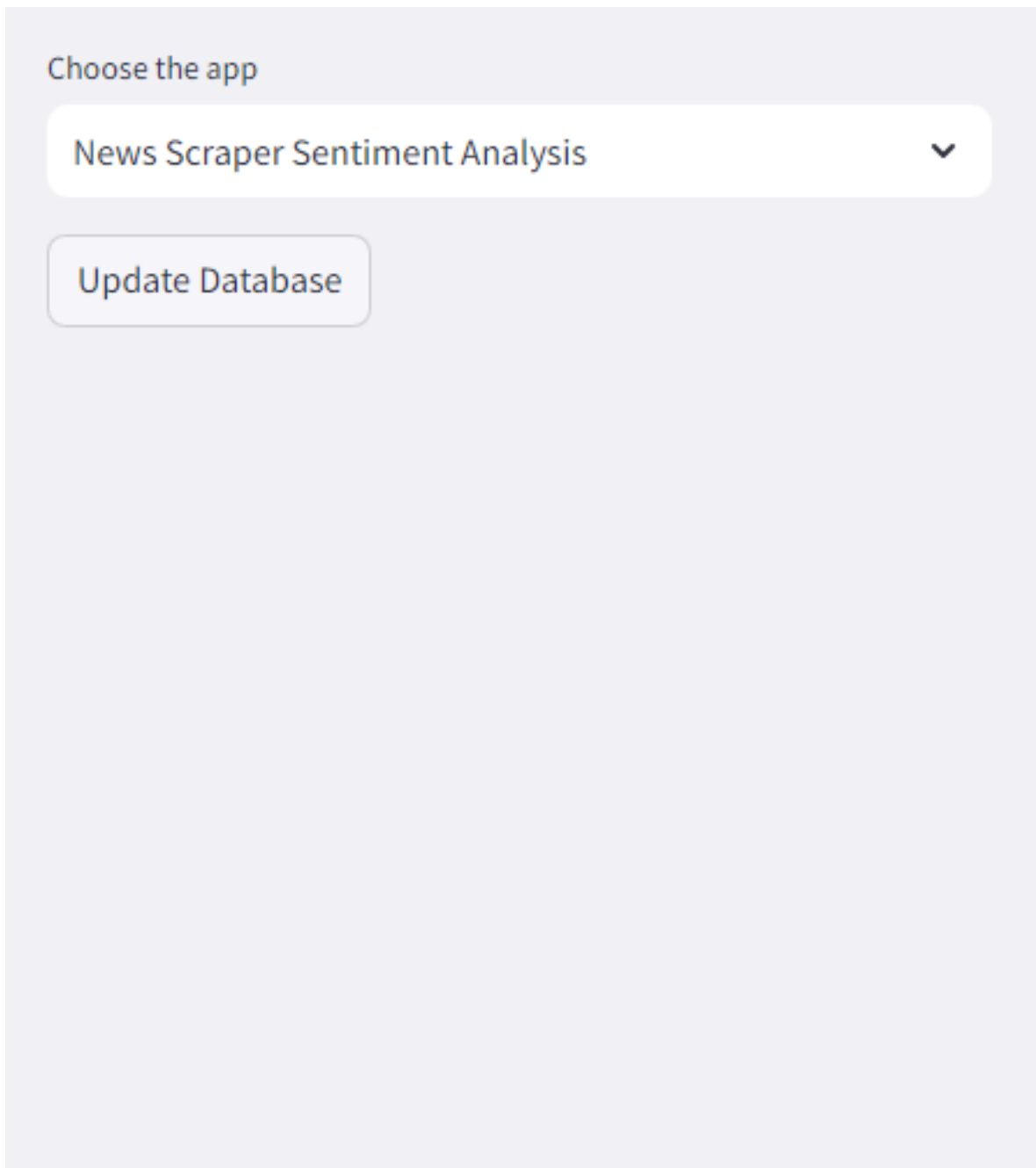


1

500

Scrape and Analyze

1. Enter search query
2. Select the number of news articles



# TrendTeller Stock Insights

## News Scraper Sentiment Analysis

Retrieve news headlines based on your search query from the past 24 hours.

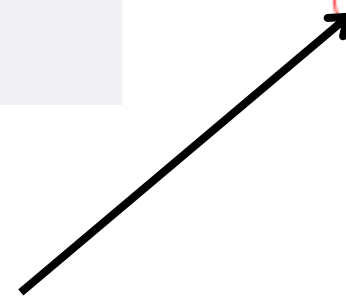
Enter what you'd like to search for on Google News

Trump

Number of News



Scrape and Analyze



3. Click “Scrape and Analysis”

Google

Trump

×

🎤

全部

圖片

影片

新聞

購物

地圖

書籍

⋮ 更多

工具


搜尋所有網站

過去 24 小時

依關聯性排序

進階搜尋


清除


 CNN

### CNN offers to host live town halls with Trump and Harris

With former President Donald Trump ruling out any more presidential debates between now and Election Day, CNN is shifting course and inviting both Trump and...

10 小時前





 The Washington Post

### Obama makes direct appeal to Black men to support Harris

Get the latest news from the 2024 campaign trail in the contest between Vice President Kamala Harris and former president Donald Trump.

1 小時前




 AP News

### Harris rips Trump for his criticism of federal storm response and calls for ‘dignity’

Vice President Kamala Harris and the White House are criticizing Donald Trump for his attacks on the federal response to Hurricanes Helene and Milton.

2 小時前



## Process

1. Scrapes **Google News** for the given query over the **past 24 hours**
2. **News titles** are processed:
  - a. Cleaned
  - b. Lemmatized
  - c. Calculate sentiment scores

Scrape and Analyze

file path

Data saved to dataset/news\2024-10-11\_Trump\_news\_data.csv

	News Title	Date	Source	URL
0	cnn offer to host live town hall with trump and harris	2024-10-11	CNN	https://www.cnn.com/2024/10/10/media/trump
1	2024 election live update trump harris and obama hit campaign trail	2024-10-11	The New York Times	https://www.nytimes.com/live/2024/10/10/us/t
2	reader write wilderness for all age hurricanes donald trump	2024-10-11	Star Tribune	https://www.startribune.com/readers-write-wil

Output: CSV file

Column Name	Data Type	Description
News Title	TEXT	The title of the news article
Date	DATE	The date the article was published
Source	VARCHAR(256)	The source of the news article
URL	TEXT	The URL of the news article
sentiment	INT	Sentiment score from sentiment analysis (1-5 scale)
search_query	VARCHAR(256)	The search query used to find the news article



Choose the app

StockTwits Comment Sentiment Analysis

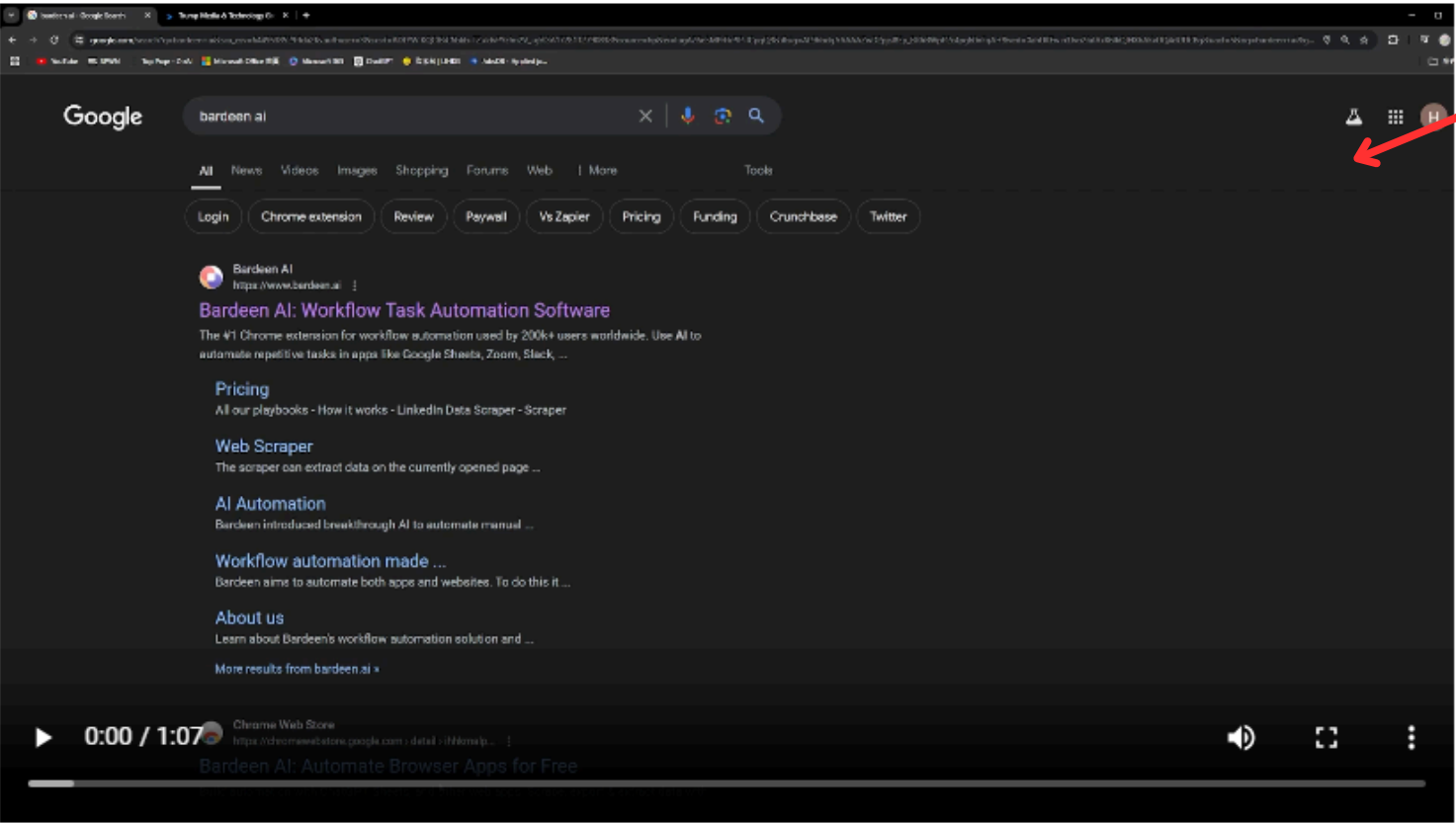
Update Database

# TrendTeller Stock Insights

## StockTwits Comment Sentiment Analysis

Visit [Stocktwits](#) and search for the stock you're interested in. Use **Bardeen AI** to retrieve comments.  
Upload the CSV file below.

How to Use Bardeen AI:



Follow the video instruction

Upload your StockTwits comments CSV file

Drag and drop file here

Limit 200MB per file • CSV


Browse files


Upload the downloaded file

Enter the stock ticker


Please upload a file and enter a stock ticker.

Enter the stock ticker for renaming the processed csv file





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Market Data by Xignite and BATS BZX Real-Time Price  
Earnings Call Data by Quartr

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of financial professional. No content on the  
Stocktwits platform should be considered an offer.

 Search stocks, crypto, and people

Sentiment






DJT \$24.17 ↑ \$3.60 (17.47%)


92,275

+

No: 74%  
Yes: 24%

Pew Research / Oct 6, 2024 / n=5110






 2


 Str18BALTStr 7m

...

[\\$DJT](#) "In the filing last week, prosecutors painted a scathing portrait of Trump's actions after his 2020 election loss to President Joe Biden, presenting scores of witnesses and a handful of co-conspirators with whom it alleged Trump "launched a series of increasingly desperate plans to overturn the legitimate election results in seven states that he had lost."






Maga - Traitor Proud

 1

 arrow6946 7m

...

[\\$DJT](#) Trump is currently leading in arizona, georgia, north carolina, Michigan, and Pennsylvania in realclear politics average and he is gaining ground in wisconsin and nevada . Looks like this is going back to 100 soon. Bullish

 4

## Process

1. Scrapes **Comments** in **Stocktwits** by **Bardeen AI**
2. **Comments** are processed:
  - a. Cleaned
  - b. Lemmatized
  - c. Calculate sentiment scores

Trump Media & Technology Gro

+


☆



擴充功能

✕


具有完整存取權

這些擴充功能可以查看並變更這個網站上的資訊。

 Bardeen: Automate Bro...



Upload your StockTwits comments CSV file



Drag and drop file here

Limit 200MB per file • CSV



table (4).csv 93.3KB

Enter the stock ticker

DJT

Hit “Enter”

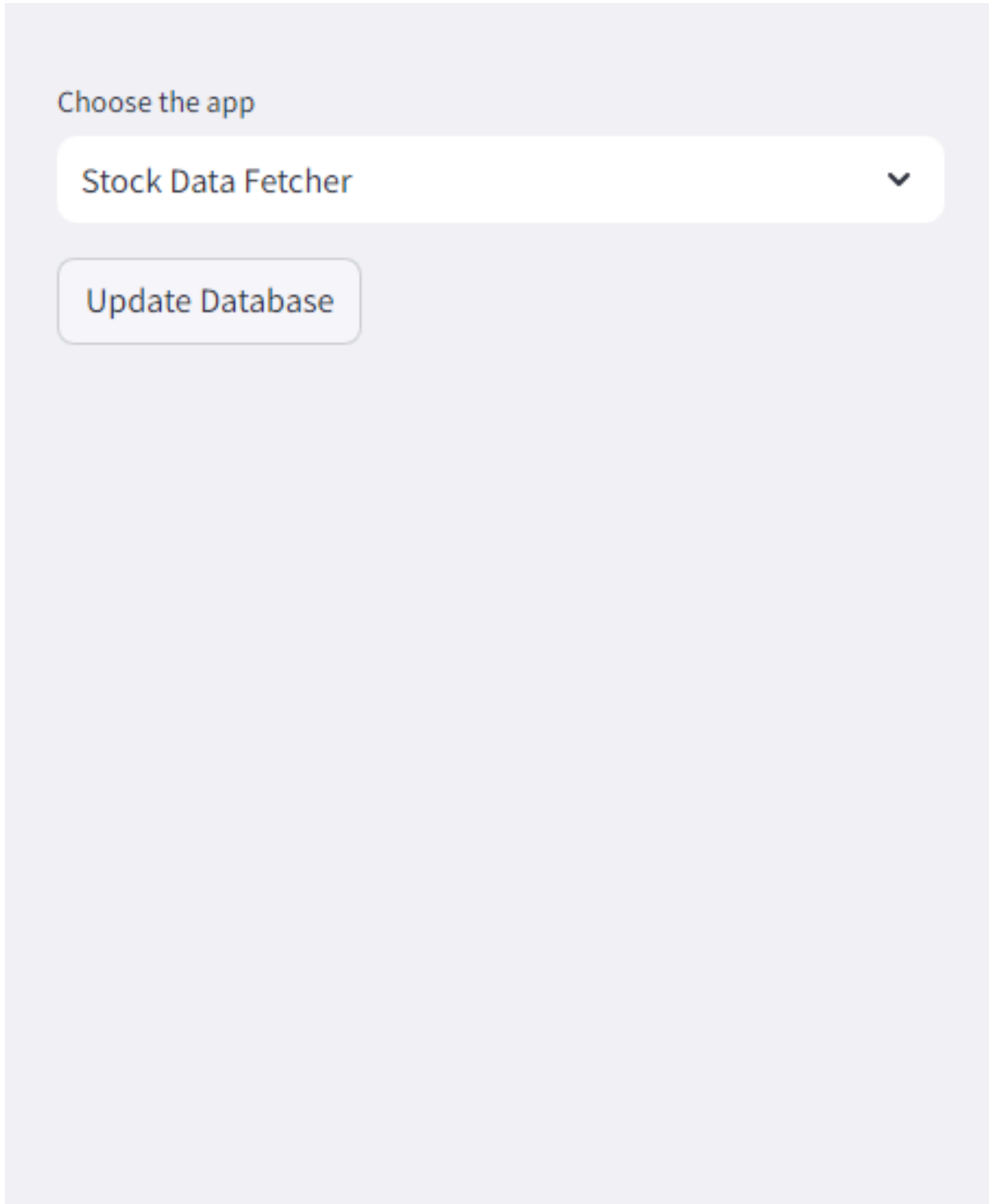
Data saved to dataset/comments/2024-10-11\_stocktwit\_comment\_DJT.csv

file path

	Username	Comment	date	Ticker	sentiment
0	gilmeriken	use this logic with this fact mike pence be vice president harris 2024 bearish	2024-10-11	DJT	5

# Output: CSV file

Column Name	Data Type	Description
Username	VARCHAR(256)	The username of the commenter
Comment	TEXT	The text of the comment
date	DATE	The date the comment was made
sentiment	INT	Sentiment score from sentiment analysis (1-5 scale)
Ticker	VARCHAR(256)	The stock ticker associated with the comment



# TrendTeller Stock Insights

## Stock Data Fetcher

Enter the stock ticker

DJT

Start date

2024/10/01

End date

2024/10/11

View & Download Stock Data

1. Enter stock ticker

2. Select the date range

3. Click the button

Summary

News

Chart

Conversations

Statistics

Historical Data

Profile

Financials

Analysis

Options

Holders

Sustainability

NasdaqGM - Nasdaq Real Time Price • USD

## Trump Media & Technology Group Corp. (DJT)

☆ Follow

↔ Compare

**24.12** **+3.55 (+17.26%)** **24.18** **+0.06 (+0.25%)**

At close: 4:00 PM EDT

After hours: 7:59 PM EDT

Open an account  
**E\*TRADE**  
from Morgan Stanley

Oct 11, 2023 - Oct 11, 2024

Historical Prices

Daily

Currency in USD

Date	Open	High	Low	Close ⓘ	Adj Close ⓘ	Volume
Oct 10, 2024	20.73	24.50	20.69	24.12	24.12	44,494,800
Oct 9, 2024	20.97	21.65	19.61	20.57	20.57	23,227,400
Oct 8, 2024	19.05	22.12	18.32	21.80	21.80	47,265,200

# Process

1. Get Stock data from **Yahoo! finance**

View & Download Stock Data

Date	Open	High	Low	Close	Adj Close	Volume	SMA_5
2024-10-01 00:00:00	17.23	17.28	15.61	16.16	16.16	22,764,900	None
2024-10-02 00:00:00	15.92	16.33	15.07	15.81	15.81	11,536,300	None
2024-10-03 00:00:00	15.55	16.56	15.53	16.17	16.17	9,714,500	None
2024-10-04 00:00:00	16.07	16.75	15.74	16.5	16.5	9,954,600	None
2024-10-07 00:00:00	16.81	19.68	16.75	18.39	18.39	31,127,400	16.606
2024-10-08 00:00:00	19.05	22.12	18.32	21.8	21.8	47,265,200	17.734
2024-10-09 00:00:00	20.965	21.65	19.61	20.57	20.57	23,227,400	18.686
2024-10-10 00:00:00	20.73	24.5	20.69	24.12	24.12	44,494,800	20.276

DJT - Candlestick Chart



Column Name	Data Type	Description
Date	datetime	The trading date.
Open	float	The opening stock price.
High	float	The highest stock price during the day.
Low	float	The lowest stock price during the day.
Close	float	The closing stock price.
Adj Close	float	The adjusted closing price, accounting for corporate actions.
Volume	int	The number of shares traded.
SMA_5	float , nullable	The 5-day simple moving average, or NULL if not available.

Output:

- 1. CSV file
- 2. Candlestick Chart

Data saved to dataset/stock\DJT\_stock\_price.csv ← file path

# Data View



Choose the app

CSV Viewer



Update Database

# TrendTeller Stock Insights

## CSV Viewer

You can view the CSV files containing the collected news and comments here. The average sentiment value is also

View news:

2024-10-04\_Trump\_news\_data.csv

☒ Show news table

	News Title	Date	Source
0	trump jan 6 role back in focus as he ready new steal election claim	2024-10-04	Washington Post
1	harris and cheney pitch republican voter as it happen	2024-10-04	The Guardian
2	liz cheney campaign with harris in wisconsin trump return to michigan	2024-10-04	Washington Post
3	harris campaign with liz cheney in a bid to win over republicans skeptical of trump	2024-10-04	CNBC
4	harris rally with cheney at birthplace of the gop after trump double down on election	2024-10-04	The Independent
5	elon musk to attend trump butler pa rally less than 3 month remove from first assass	2024-10-04	New York Post
6	a special guest at trump rally in pennsylvania where he be shoot	2024-10-04	NDTV
7	musk say hell attend trump rally in butler scene of july shooting	2024-10-04	Axios
8	ros atkin on the first trump assassination attempt	2024-10-04	BBC
9	trump say doj violate its own election rule lawyer disagree	2024-10-04	Washington Post

Average value of sentiment: 2.401

View comments:

2024-10-04\_stocktwit\_comment\_DJT.csv

☐ Show comments table

View stock:

DJT\_stock\_price.csv

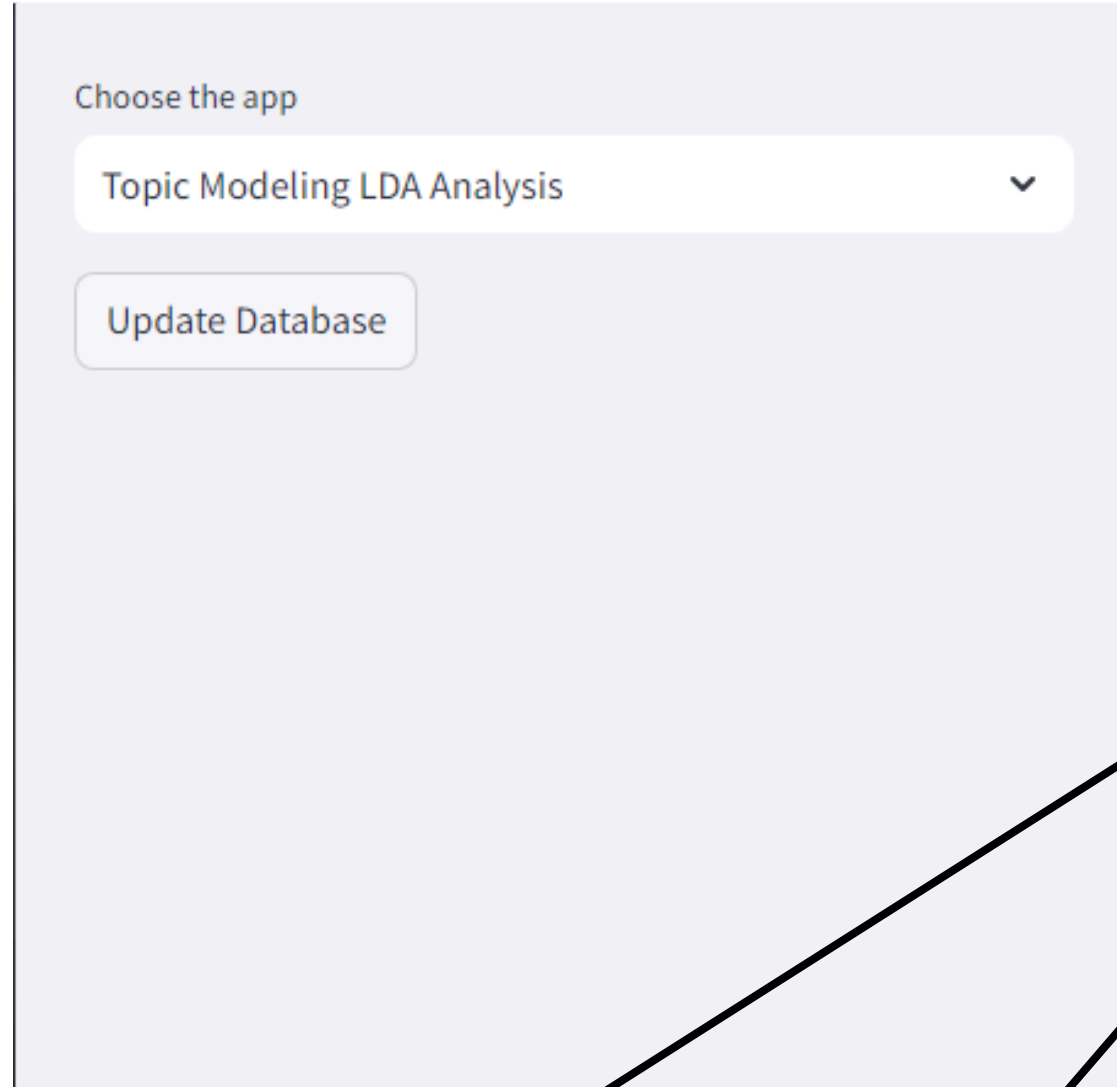
☐ Show stock table

1. Select the dataset
2. Click the check box to show or hide the tables

- Output:
1. Data Table
2. Average value of sentiment



# Data Analysis



# TrendTeller Stock Insights

## Topic Modeling LDA Analysis

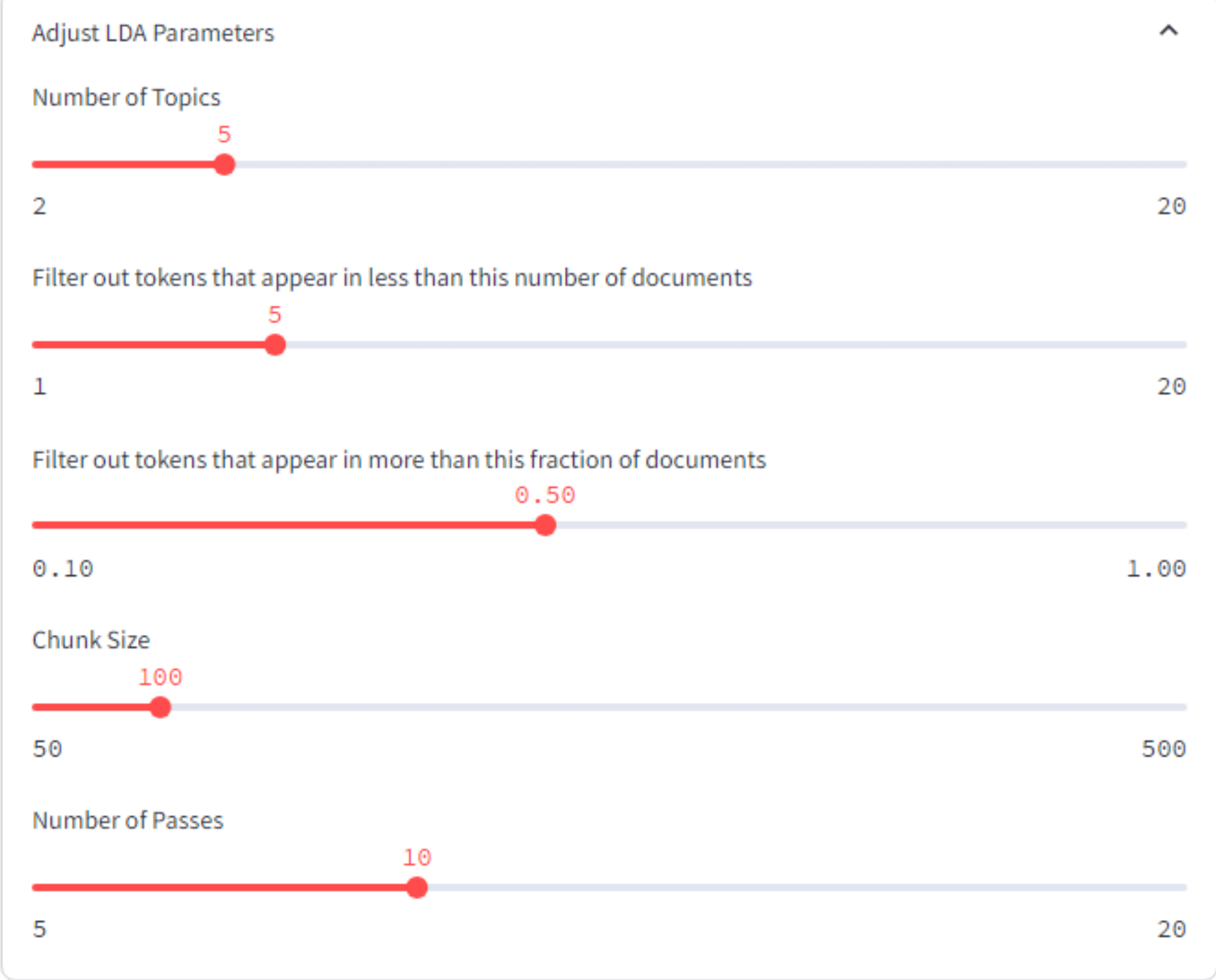
Select a CSV file to analyze

news/2024-10-04\_Trump\_news\_data.csv

Adjust LDA Parameters

Run LDA

1. Select a news/ comments csv file
2. Adjust LDA Parameters (Optional)
3. Click the button “Run LDA”



Parameter Name	Description	Range	Default Value	Simple Explanation
Number of Topics (num_topics)	The number of distinct topics to generate in the topic model.	2 to 20	5	How many topics the model will generate.
Filter out tokens (no_below)	Removes words that appear in fewer than this number of documents, filtering out rare terms.	1 to 20	5	Removes very rare words from the analysis.
Filter out tokens (no_above)	Filters out words that appear in more than this fraction of documents, removing very common terms.	0.1 to 1.0 (fraction)	0.5	Removes extremely common words to avoid noise.
Chunk Size (chunksize)	Number of documents to process in each chunk during the training.	50 to 500	100	Breaks the data into smaller batches for easier processing.
Number of Passes (passes)	Number of complete passes through the corpus during model training.	5 to 20	10	The model revisits the data multiple times to improve topic identification.

## LDA Topics

Topic: 1 Words: 0.246\*"detroit" + 0.139\*"call" + 0.098\*"tiffany" + 0.090\*"cbs" + 0.081\*"interview" + 0.079\*"pregnant" + 0.077\*"harris" + 0.042\*"speech" + 0.022\*"event" + 0.015\*"campaign"

Topic: 2 Words: 0.174\*\*"say" + 0.103\*\*"man" + 0.102\*\*"harris" + 0.097\*\*"poll" + 0.091\*\*"voter" + 0.078\*\*"hall" + 0.078\*\*"town" + 0.057\*\*"tell" + 0.053\*\*"claim" + 0.025\*\*"live"

Topic: 3 Words: 0.149\*"biden" + 0.128\*"hurricane" + 0.112\*"get" + 0.091\*"life" + 0.071\*"storm" + 0.067\*"judge" + 0.064\*"evidence" + 0.061\*"man" + 0.054\*"misinformation" + 0.054\*"release"

Topic: 4 Words: 0.160\*"harris" + 0.144\*"donald" + 0.086\*"election" + 0.084\*"rally" + 0.066\*"campaign" + 0.064\*"obama" + 0.058\*"debate" + 0.047\*"opinion" + 0.043\*"2024" + 0.035\*"win"

Topic: 5 Words: 0.111\*"president" + 0.094\*"tax" + 0.093\*"former" + 0.093\*"lie" + 0.086\*"speech" + 0.077\*"new" + 0.067\*"loan" + 0.067\*"car" + 0.065\*"stop" + 0.064\*"make"

## Word Cloud for Topics



## Output:

1. The weight or importance of that word within the topic.
2. Word Cloud for topics

Step 1: Update the database

Step 2:  
Enter which news, comments, and  
stock you want to see

Choose the app

Sentiment Report

Update Database

User Inputs

Enter the news search query:

Trump

Enter the StockTwits ticker:

DJT

Enter the stock ticker for price data:

DJT

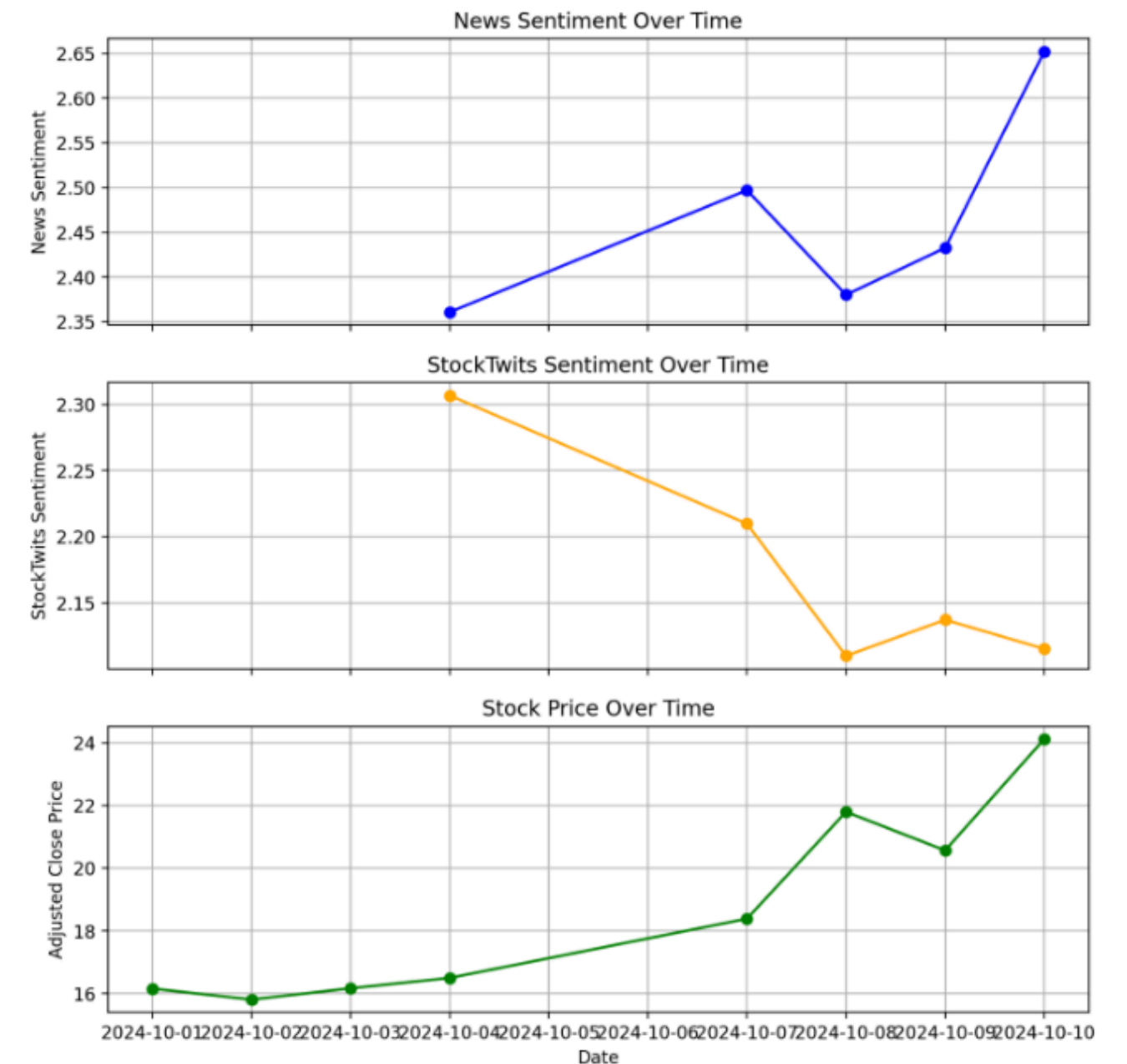
# TrendTeller Stock Insights

## TrendTeller: Sentiment and Stock Price Correlation Analysis

Correlation Results

Sentiment and Stock Price Sentiment Correlations Volume Correlations

### Sentiment and Stock Price Over Time



# TrendTeller: Sentiment and Stock Price Correlation Analysis

Correlation Results

Correlation between StockTwits sentiment and stock price: -0.9155

Correlation between StockTwits sentiment and news sentiment: 0.1759

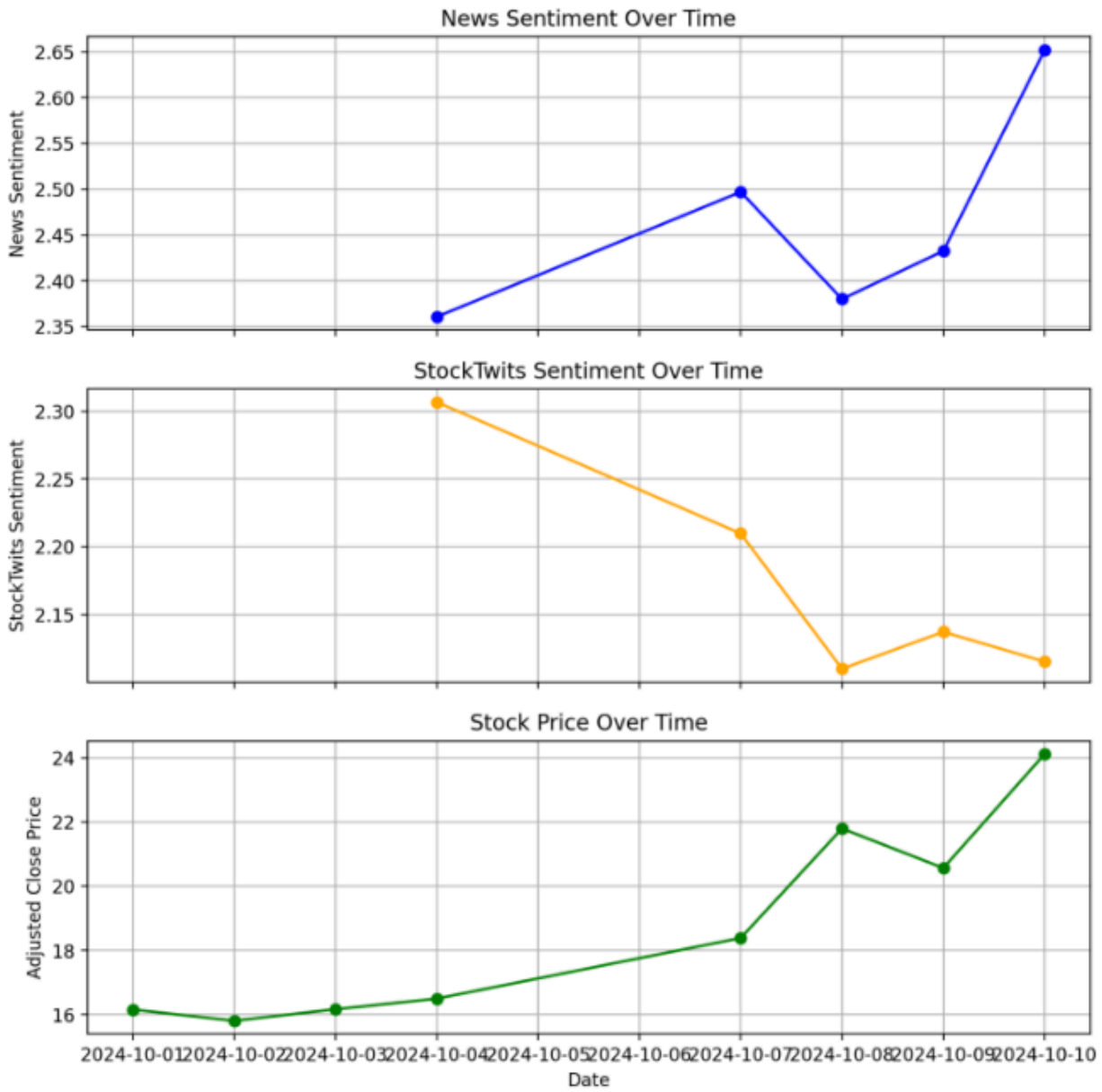
Correlation between news sentiment and stock price: 0.6573

Correlation between news sentiment and stock volume: 0.4966

Correlation between StockTwits sentiment and stock volume: -0.8446

Sentiment and Stock Price   Sentiment Correlations   Volume Correlations

## Sentiment and Stock Price Over Time



Output:  
1. Correlation

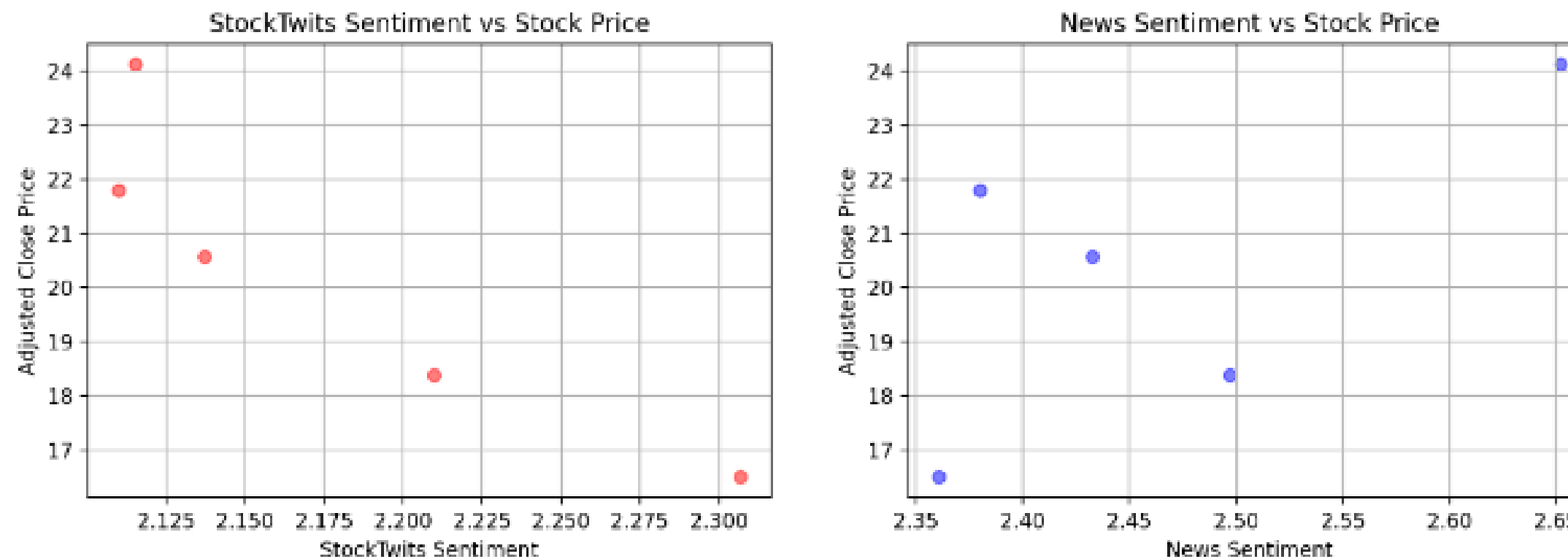
2. Time Trend Plot

Correlation Results



Sentiment and Stock Price **Sentiment Correlations** Volume Correlations

## Scatter Plot: Sentiment vs Stock Price



### 3. Sentiment vs Stock Price Correlation Plot

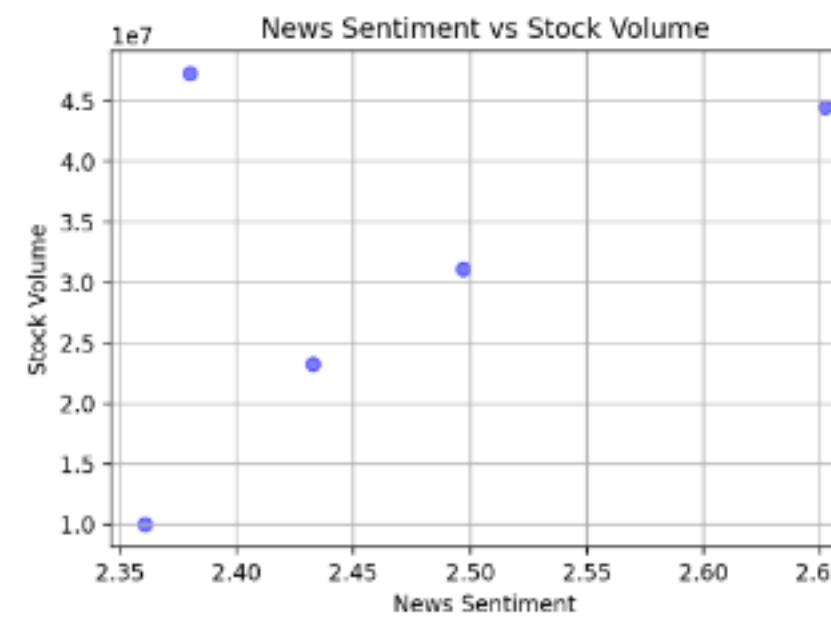
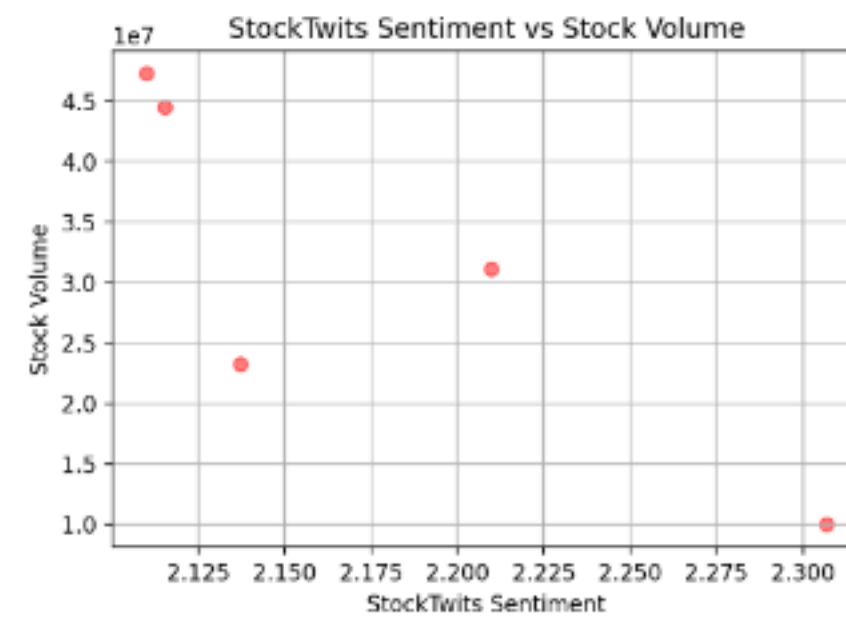


Correlation Results



Sentiment and Stock Price   Sentiment Correlations   **Volume Correlations**

## Scatter Plot: Sentiment vs Stock Volume



# 4. Sentiment vs Stock Volume Correlation Plot