Warren - Stock Analysis

By AISHWARYA DIXIT
SHARANG GUPTA
AYUSH PANT

SENTIMENT ANALYSIS

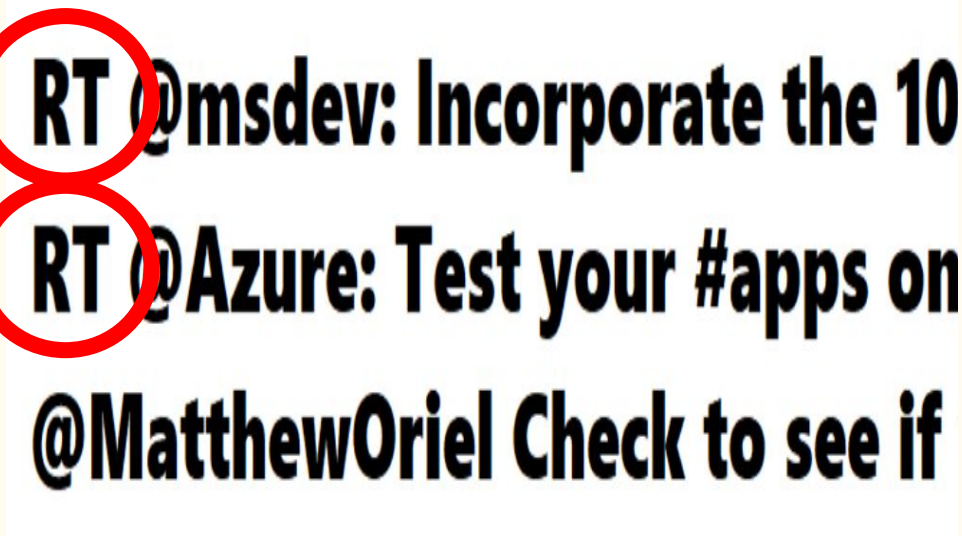
Data Sources

- Tweets from the twitter API
- News from SeekingAlpha

ANALYSIS OF TWEETS

1. EXTRACTING TWEETS

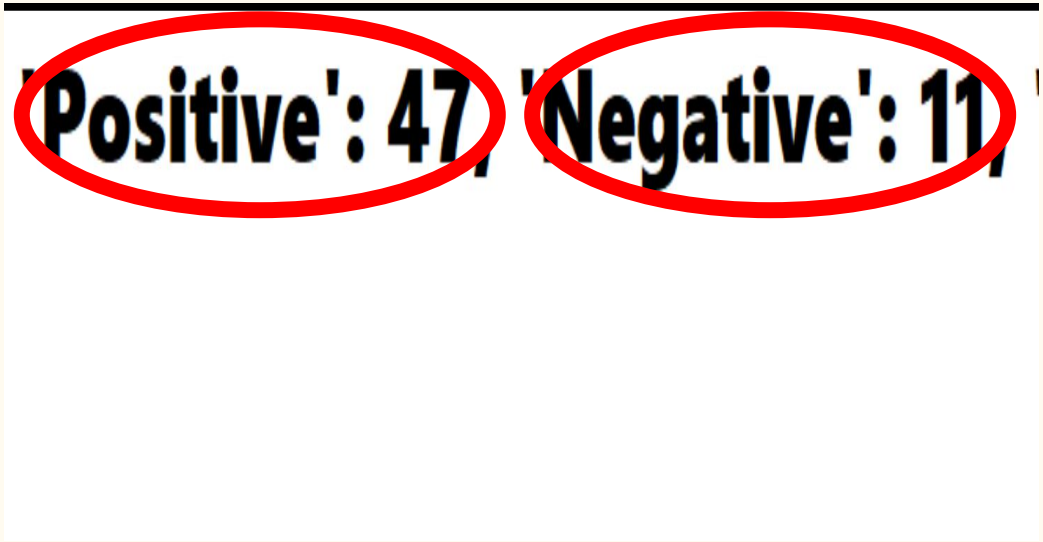
2. CLEANING EXTRACTED TWEETS



3. TOKENIZING CLEANED TWEETS

4. SENDING THE TWEETS TO PYSENTIMENT

5. RETURNING THE SCORE




```
{'Polarity': 0.6250944821192187, 'Positive': 4300, 'Negative': 992, 'Subjectivity': 0.19996977024637358}

 SENTIMENT RATIO : 4

Process finished with exit code 0
```

ANALYSIS OF NEWS

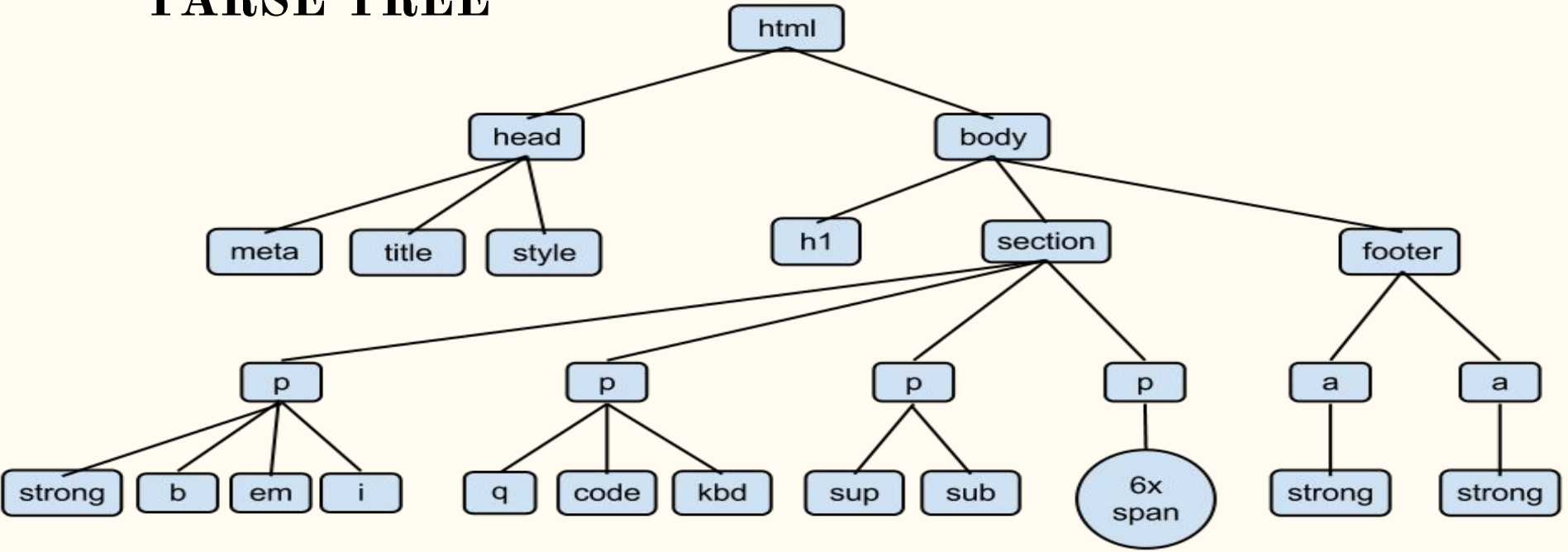
1. INITIALISING THE BROWSER VIA SELENIUM

2. GETTING THE PAGE SOURCE

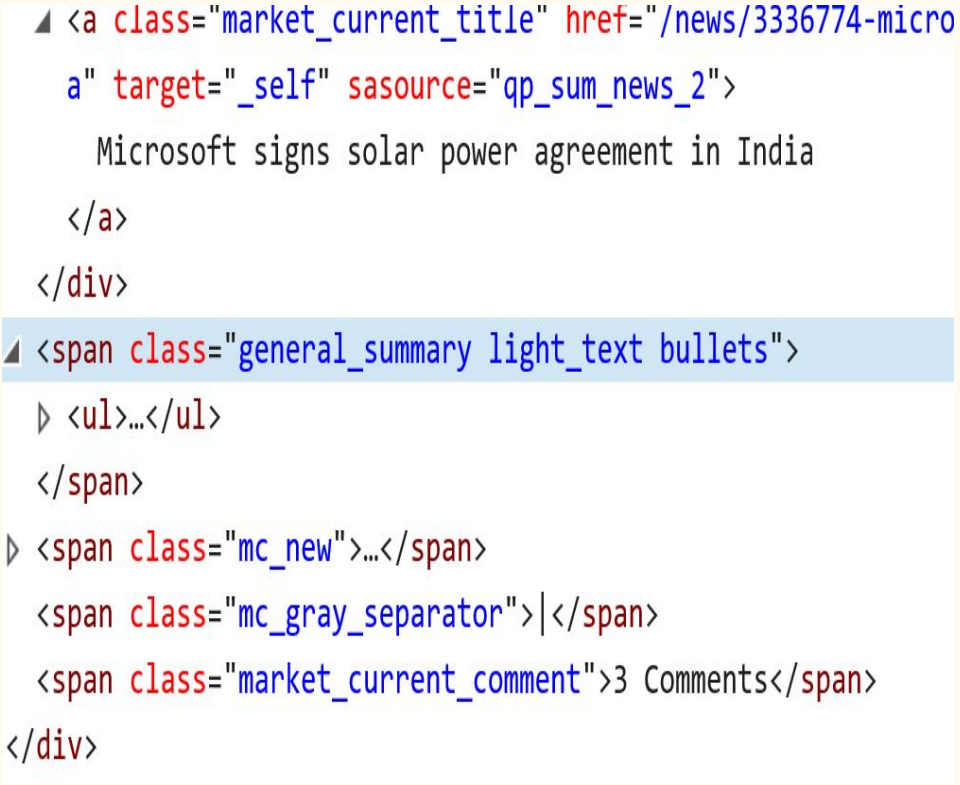
```
<!DOCTYPE html>
<html>
    <head>
        <title>Example<title>
        <link rel="stylesheet" href="styl
    </head>
    <body>
        <h1>
            <a href="/">Header</a>
        </h1>
        <nav>
            <a href="one/">One</a>
            <a href="two/">Two</a>
            <a href="three/">Three</a>
        </nav>
```

3. SENDING PAGE SOURCE TO BEAUTIFULSOUP

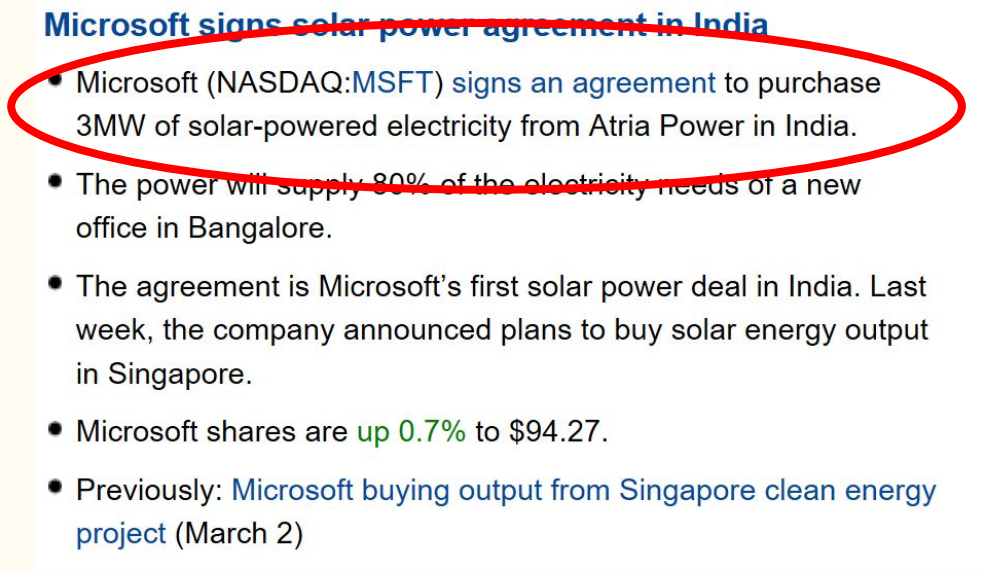
4. GENERATING THE PARSE TREE



5. NAVIGATING TO THE REQUIRED ELEMENT



6. EXTRACTING THE TEXT



Microsoft signs solar power agreement in India

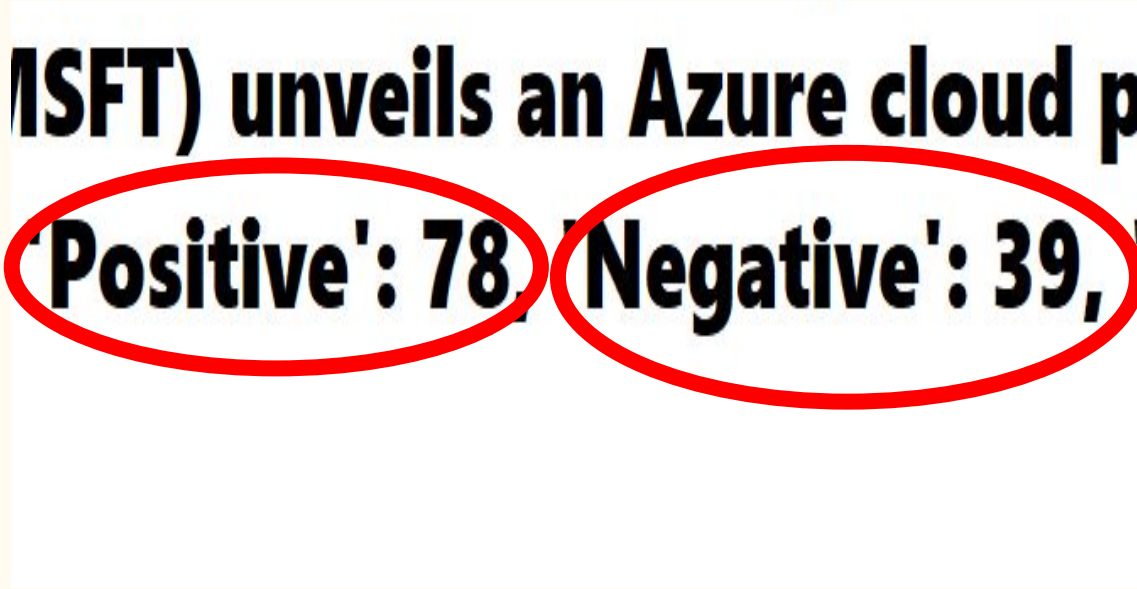
- Microsoft (NASDAQ:MSFT) signs an agreement to purchase 3MW of solar-powered electricity from Atria Power in India.
- The power will supply 80% of the electricity needs of a new office in Bangalore.
- The agreement is Microsoft's first solar power deal in India. Last week, the company announced plans to buy solar energy output in Singapore.
- Microsoft shares are up 0.7% to $94.27.
- Previously: Microsoft buying output from Singapore clean energy project (March 2)

Microsoft (NASDAQ:MSFT) signs an agreement to purchase 3MW of solar-powered electricity from Atria Power in India.

8. CLEANING AND TOKENIZING

Microsoft (NASDAQ:MSFT) signs an agreement to purchase 3MW of solar-powered electricity from Atria Power in India.

9. RETURNING THE SCORE




```
Cowen maintains an Outperform rating on Microsoft (NASDAQ:MSFT) and raises the price target by $5 to $105.          Th
Microsoft (NASDAQ:MSFT) launches a new gaming cloud division.          Kareem Choudhry, who has worked on Outlook
  Microsoft (NASDAQ:MSFT) researchers believe they've created the first machine translation system that can translate ser
21Vianet Group (NASDAQ:VNET) and Microsoft (NASDAQ:MSFT) agree to extend their partnership that provides public clo
{'Polarity': 0.5151515099479645, 'Positive': 75, 'Negative': 24, 'Subjectivity': 0.21521739083648395}

SENTIMENT RATIO : 3.125

Process finished with exit code 0
```

FUNDAMENTAL ANALYSIS

How does it work ?

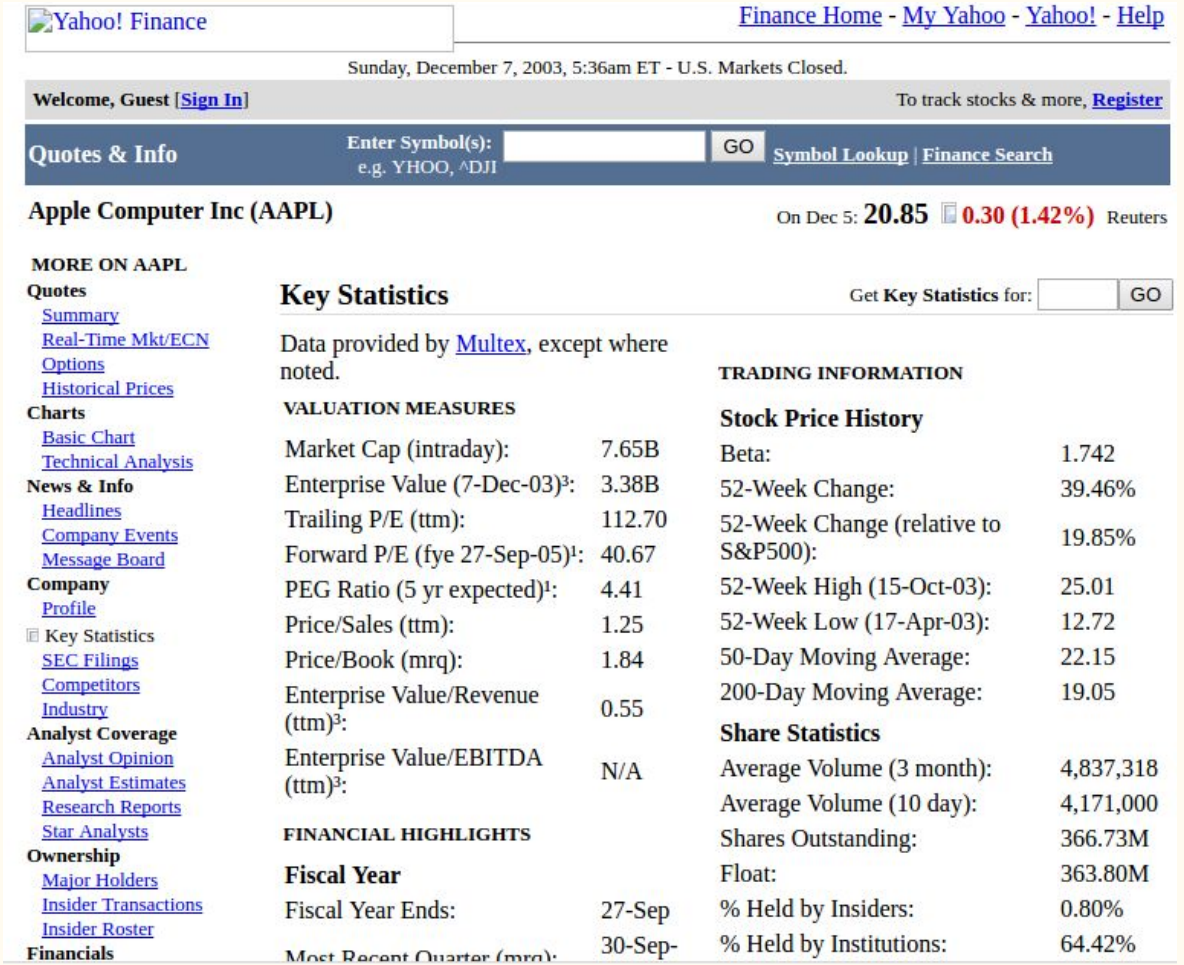
- We use machine learning to analyze company fundamentals like:
- price/book ratio
- P/E ratio
- Debt/Equity ... etc
- Then classify the stocks as either out-performers compared to the market (labeled as 1's), or under-performers (labeled as 0's).

STEP 1 :

Gathering the Data and converting it into a usable form

Data Source

HTML source code for the S&P 500 index of companies over a decade from Yahoo Finance.



Yahoo! Finance

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Sunday, December 7, 2003, 5:36am ET - U.S. Markets Closed.

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Apple Computer Inc (AAPL) On Dec 5: 20.85 0.30 (1.42%) Reuters

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- Star Analysts

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- Major Holders
- Insider Transactions
- Insider Roster

Financials

Key Statistics

Get Key Statistics for: GO

Data provided by Multex, except where noted.

VALUATION MEASURES

Market Cap (intraday):	7.65B
Enterprise Value (7-Dec-03)[3]:	3.38B
Trailing P/E (ttm):	112.70
Forward P/E (fye 27-Sep-05)[1]:	40.67
PEG Ratio (5 yr expected)[1]:	4.41
Price/Sales (ttm):	1.25
Price/Book (mrq):	1.84
Enterprise Value/Revenue (ttm)[3]:	0.55
Enterprise Value/EBITDA (ttm)[3]:	N/A

FINANCIAL HIGHLIGHTS

Fiscal Year

Fiscal Year Ends:	27-Sep
Most Recent Quarter (mrq):	30-Sep-

TRADING INFORMATION

Stock Price History

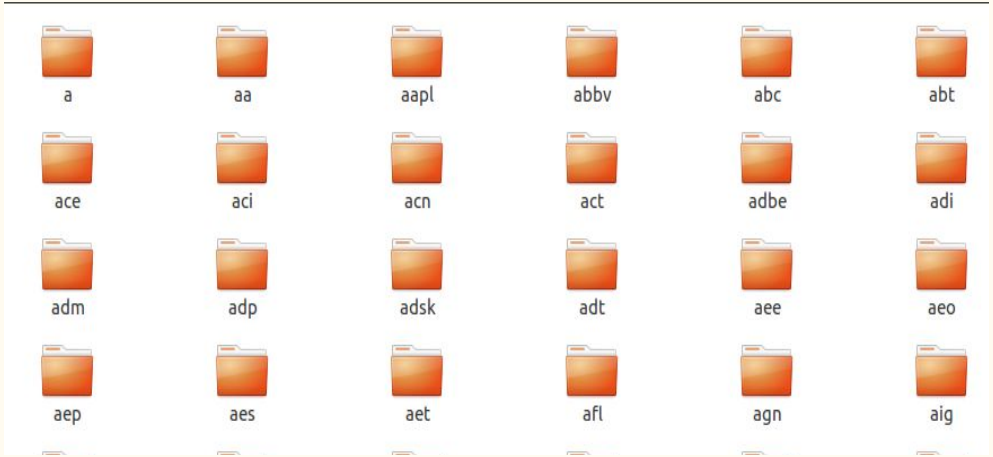
Beta:	1.742
52-Week Change:	39.46%
52-Week Change (relative to S&P500):	19.85%
52-Week High (15-Oct-03):	25.01
52-Week Low (17-Apr-03):	12.72
50-Day Moving Average:	22.15
200-Day Moving Average:	19.05

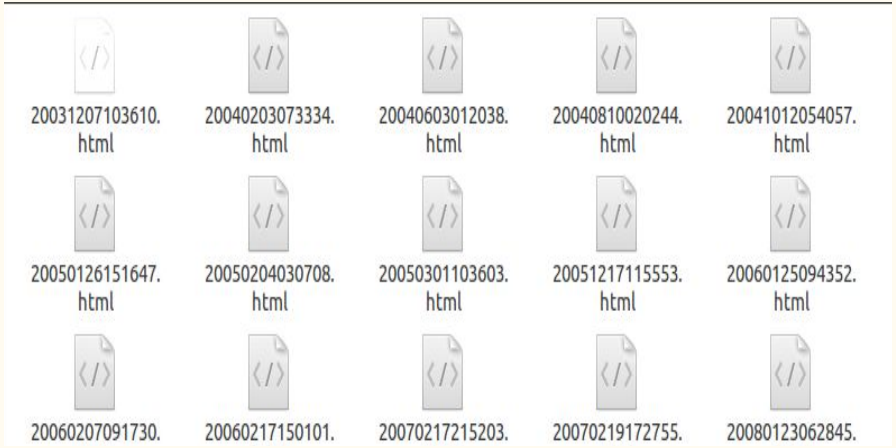
Share Statistics

Average Volume (3 month):	4,837,318
Average Volume (10 day):	4,171,000
Shares Outstanding:	366.73M
Float:	363.80M
% Held by Insiders:	0.80%
% Held by Institutions:	64.42%

Procedure

1. By saving the sources offline we save on time and bandwidth
2. Parse the files one after another for all the stocks and proceed if the file for that stock is present
3. The files are stored by their tickers





Procedure

4. We extract their date-time and convert into unix time

5. We access the file, and save the full source code HTML contents to the "source" variable. From there, we do a quick search for the "gather" term, which is the name of the feature we're hunting for.

6. With this simple splitting method we pull the Debt/Equity ratios for all of the companies.

7. We use Pandas module for structuring and organizing the data into a dataframe.

8. Here we specify the columns as date, unix, ticker, and DE ratio.

9. We then store the dataframe in a csv file.

STEP 2 :

We need to compare these values against the market

Procedure

10. Fetch the s&p500 values
11. We add ‘price’ and ‘s&p500’ columns in the previously created dataframe

	Date	Open	High	Low	Close	Adj Close	Volume
2	2000-01-03	1469.25	1478	1438.359985	1455.219971	1455.219971	931800000
3	2000-01-04	1455.219971	1455.219971	1397.430054	1399.420044	1399.420044	1009000000
4	2000-01-05	1399.420044	1413.27002	1377.680054	1402.109985	1402.109985	1085500000
5	2000-01-06	1402.109985	1411.900024	1392.099976	1403.449951	1403.449951	1092300000
6	2000-01-07	1403.449951	1441.469971	1400.72998	1441.469971	1441.469971	1225200000
7	2000-01-10	1441.469971	1464.359985	1441.469971	1457.599976	1457.599976	1064800000
8	2000-01-11	1457.599976	1458.660034	1434.420044	1438.560059	1438.560059	1014000000
9	2000-01-12	1438.560059	1442.599976	1427.079956	1432.25	1432.25	974600000
10	2000-01-13	1432.25	1454.199951	1432.25	1449.680054	1449.680054	1030400000
11	2000-01-14	1449.680054	1473	1449.680054	1465.150024	1465.150024	1085900000
12	2000-01-18	1465.150024	1465.150024	1451.300049	1455.140015	1455.140015	1056700000
13	2000-01-19	1455.140015	1461.390015	1448.680054	1455.900024	1455.900024	1087800000
14	2000-01-20	1455.900024	1465.709961	1438.540039	1445.569946	1445.569946	1100700000
15	2000-01-21	1445.569946	1453.180054	1439.599976	1441.359985	1441.359985	1209800000
16	2000-01-24	1441.359985	1454.089966	1395.420044	1401.530029	1401.530029	1115800000
17	2000-01-25	1401.530029	1414.26001	1388.48999	1410.030029	1410.030029	1073700000
18	2000-01-26	1410.030029	1412.72998	1400.160034	1404.089966	1404.089966	1117300000
19	2000-01-27	1404.089966	1418.859985	1370.98999	1398.560059	1398.560059	1129500000
20	2000-01-28	1398.560059	1398.560059	1356.199951	1360.160034	1360.160034	1095800000
21	2000-01-31	1360.160034	1394.47998	1350.140015	1394.459961	1394.459961	993800000

FURTHER :

We're going to compare the stock's percentage change to the S&P 500's percentage change. If the stock's percent change is less than the S&P 500, then the stock is and under-performing stock. If the percentage change is more, than the label is out-perform.

We will **add more features** for better comparison and label accordingly

API INTEGRATION

Phase 1 : Setting up the API

- Setting up the database(optional)

- Installing Django on local machine:
    1. Using GIT:

```
git clone https://github.com/django/django.git
```

    1. Using pip:

```
pip install -e django/
```

Phase 2 : Using the Server

Django Development Server:

django-admin.py runserver
django-admin.py runserver 10.0.0.150:8001

Other Common Servers:

Mod_WSGI,uWSGI,Gunicorn

Phase 3 : Creating the Project

```
$ django-admin startproject mysite
```

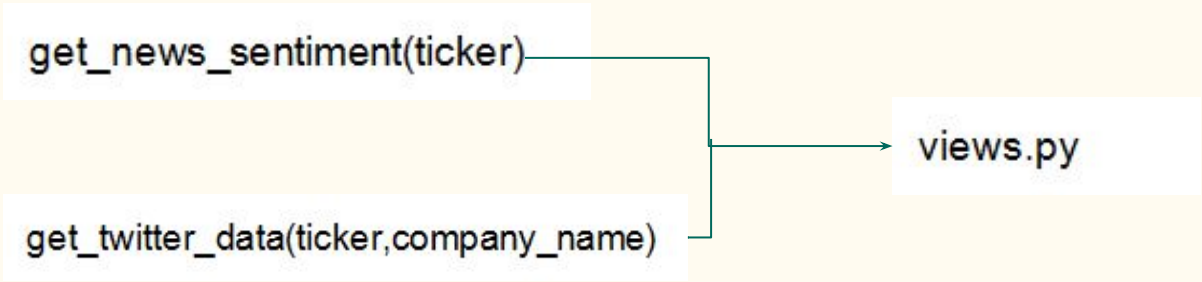
```
mysite/
    manage.py
    mysite/
        __init__.py
        settings.py
        urls.py
        wsgi.py
```

Phase 4 : Creating the App

```
$ python manage.py startapp polls
```

```
polls/
    __init__.py
    admin.py
    apps.py
    migrations/
        __init__.py
    models.py
    tests.py
    views.py
```

Phase 5 : Integrating Functions with views



Phase 6: Making the UI

- Rendering the output in external html file.
- Including all the additional CSS and JS using the static os concept in Django API
- Using other External Libraries for beautifying the User Interface.
    1. Bootstrap
    2. Jquery
- Showing the output in Bootstrap Model.

THANK YOU