Social Network Analysis Mini Project

AIM: Finding Bias in Political News and Blog Websites.

Introduction

Here I have used Python to pull the news sites “Indian express” and “news18” for their 2 most recent articles that contained the keyword “Narendra Modi”.

Then performed a text analysis on the article to return a list of how subjective (or opinionated) an article was and the polarity (whether the author felt positively or negatively about the Modi). By doing this I could come up with a (very basic) ranking of the News Sites on how biased they are about Modi and what their opinions of him are. With this, I could compare which news article is the most biased.

Imports

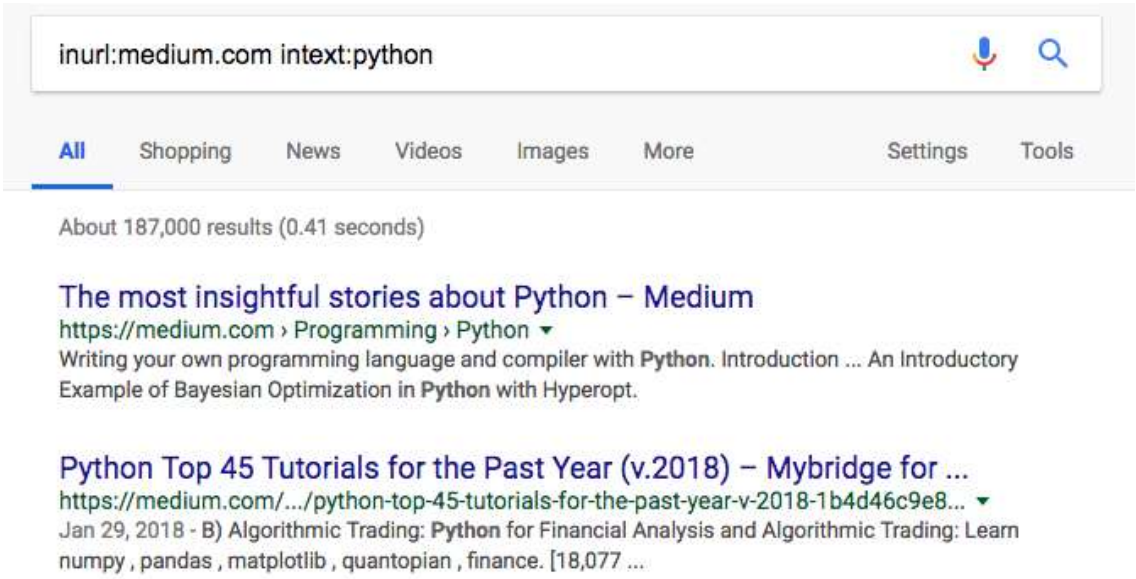
To search google, I used googlesearch, TextBlob for text analysis and TextTable for displaying the results in the terminal, and mechanize to display the title in the results in the terminal.

```
import googlesearch
from textblob import TextBlob
import texttable as tt
from time import sleep
from mechanize import Browser
```

Search

In order to get and analyze the articles from varying websites, I used Google Dork searches which allow you to search a specific website for keywords (among many other things). For example you can type: “inurl:medium.com intext:python”

In order to return search results just from the Medium website that mention python.



I created a function called search which takes the arguments of the site you are searching and the keyword to search. Then setting the variable search_results to the Google Dork search that uses the site and keyword parameters, we can collect the articles.

I then created a search_results_list, subjectivity_list, and a polarity_list to append the results to later. Creating the num list is simply to have the articles numbered as they appear in the text table.

```
def search(site, search):
    site = site
    search = search
    search_results = googlesearch.search("inurl:" + site + " intext:" + search, stop=2)
    search_results_list = []
    subjectivity_list = []
    polarity_list = []
    num = []
    number = 1
```

Sentiment Analysis

The next step is to determine the subjectivity and polarity of a given article. This can be done by calling the result.description method on the search result, and then appending that to the search_results_list.

By setting up TextBlob with the search_results as its argument as a variable analysis you perform basic sentiment analysis on the articles. Run analysis.sentiment.subjectivity to get the subjectivity for the results and analysis.sentiment.polarity to return the polarity. Append these results to their respective lists.

```
for result in search_results:
        url = result
        br = Browser()
        br.open(url)
        search_results = br.title()
        search_results_list.append(search_results)

        analysis = TextBlob(search_results)
        subjectivity = analysis.sentiment.subjectivity
        subjectivity_list.append(subjectivity)
        polarity = analysis.sentiment.polarity
        polarity_list.append(polarity)
        number = number + 1
        num.append(number)
        sleep(10)
```

Text Table

In order to create the table, make a new variable tab and set it equal to tt.Texttable(). Then write out your headings, I used Number, Results, Subjectivity, and Polarity.

```
tab = tt.Texttable()
```

```
    headings = ['Number','Results','Subjectivity', 'Polarity']
    tab.header(headings)
```

Then run a for loop to add each element of the lists as a row to your table.

```
for row in zip(num, search_results_list, subjectivity_list, polarity_list):
        tab.add_row(row)
```

Taking the subjectivity and polarity list we can find the average of each news source, which we can then print out along with the given site, search results and table.

```
avg_subjectivity = (sum(subjectivity_list) / len(subjectivity_list))
    avg_polarity = (sum(polarity_list) / len(polarity_list))

    table = tab.draw()
    print(site)
    print(search)
    print(table)
    print(site + " average subjectivity: " + str(avg_subjectivity))
    print(site + " average polarity: " + str(avg_polarity))
```

Calling the Function

Finally, you must call the search function for each news site.

```
search("indianexpress", "narendra modi")
sleep(10)
search("news18", "narendra modi")
sleep(10)
```

Results

Running the script the terminal output will look something like this:

```
C:\Users\Bhakti>python finding_bias_in_political_news_and_blog_websites.py
indianexpress
narendra modi
+--------+-----------------------------------------+--------------+----------+
| Number |                 Results                 | Subjectivity | Polarity |
+========+=========================================+==============+==========+
| 2      | Narendra Modi: News, Photos, Latest News | 0.900        | 0.500    |
|        | Headlines about Narendra Modi - The      |              |          |
|        | Indian Express                           |              |          |
+--------+-----------------------------------------+--------------+----------+
| 3      | BJP only party that respects all former  | 0.500        | 0        |
|        | PMs: Narendra Modi | India News,The      |              |          |
|        | Indian Express                           |              |          |
+--------+-----------------------------------------+--------------+----------+
indianexpress average subjectivity: 0.7
indianexpress average polarity: 0.25
```

```
news18
narendra modi
+--------+-----------------------------------------+--------------+----------+
| Number |                 Results                 | Subjectivity | Polarity |
+========+=========================================+==============+==========+
| 2      | Narendra Modi News: Latest News and     | 0.900        | 0.500    |
|        | Updates on Narendra Modi at News18      |              |          |
+--------+-----------------------------------------+--------------+----------+
| 3      | Modi News: Latest News and Updates on   | 0.900        | 0.500    |
|        | Modi at News18                          |              |          |
+--------+-----------------------------------------+--------------+----------+
news18 average subjectivity: 0.9
news18 average polarity: 0.5
```