EC601
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Project2
Phase 1 due 9/27 code + report
Phase 2 due 10/5

Considering the requirement that the keys should not be public, I just show the code before I entered API key, API secret key, access token, access secret token.
Please enter your own Twitter API keys to run these python files.

Phase 1(a) Twitter APIs

(1)Twitter API – Apply for Access. After applied for a developer account, derive the API key, API secret key, access token, access secret token.

(2) **Test program to retrieving tweets:**

(i)Using tweepy to derive tweet.json file containing someone's tweets.

Under cmd, run:

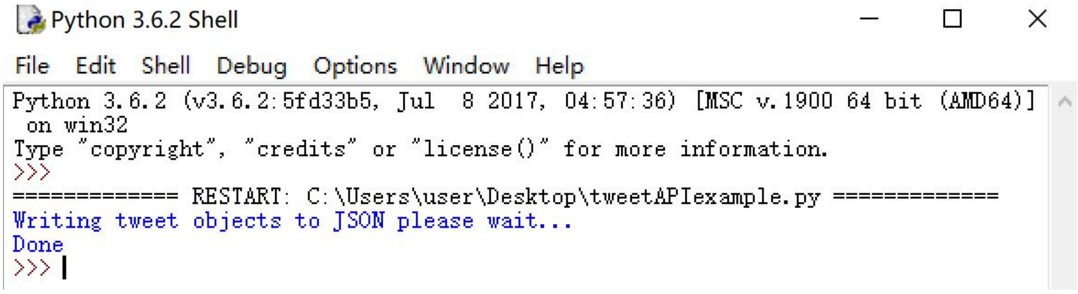
pip install tweepy

Then enter key, secret key, access token, access secret token to code:

```
#!/usr/bin/env python
# encoding: utf-8
#Author - Prateek Mehta



import tweepy #https://github.com/tweepy/tweepy
import json



#Twitter API credentials
consumer_key = "Enter the consumer_key"
consumer_secret = "Enter the consumer_secret"
access_key = "Enter the access_key"
access_secret = "Enter the access_secret"

def get_all_tweets(screen_name):

    #Twitter only allows access to a users most recent 3240 tweets with this method

    #authorize twitter, initialize tweepy
    auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
    auth.set_access_token(access_key, access_secret)
    api = tweepy.API(auth)

    #initialize a list to hold all the tweepy Tweets
    alltweets = []
    #make initial request for most recent tweets (200 is the maximum allowed count)
    new_tweets = api.user_timeline(screen_name = screen_name,count=10)

    #save most recent tweets
    alltweets.extend(new_tweets)

    #save the id of the oldest tweet less one
    oldest = alltweets[-1].id - 1

    #keep grabbing tweets until there are no tweets left to grab
    while len(new_tweets) > 0:

        #all subsiquent requests use the max_id param to prevent duplicates
        new_tweets = api.user_timeline(screen_name = screen_name,count=10,max_id=oldest)

        #save most recent tweets
        alltweets.extend(new_tweets)

        #update the id of the oldest tweet less one
        oldest = alltweets[-1].id - 1
        if(len(alltweets) > 15):
            break
        print ("...%s tweets downloaded so far" % (len(alltweets)))

    #write tweet objects to JSON
    file = open('tweet.json', 'w')
    print ("Writing tweet objects to JSON please wait...")
    for status in alltweets:
        json.dump(status._json,file,sort_keys = True,indent = 4)

    #close the file
    print ("Done")
    file.close()

if __name__ == '__main__':
    #pass in the username of the account you want to download
    get_all_tweets("@Ibra_official") //who’s tweets you want to record
```

Since the keys should not be public, I just show the code before I entered API key, API secret key, access token, access secret token.

After entering these keys, we can change the content of get_all_tweets(“@”) to get some one else’s tweets. In this example **tweetAPIexample.py**, we got “@Ibra_official” ‘s tweets and saved them to the file named “tweet.json”.



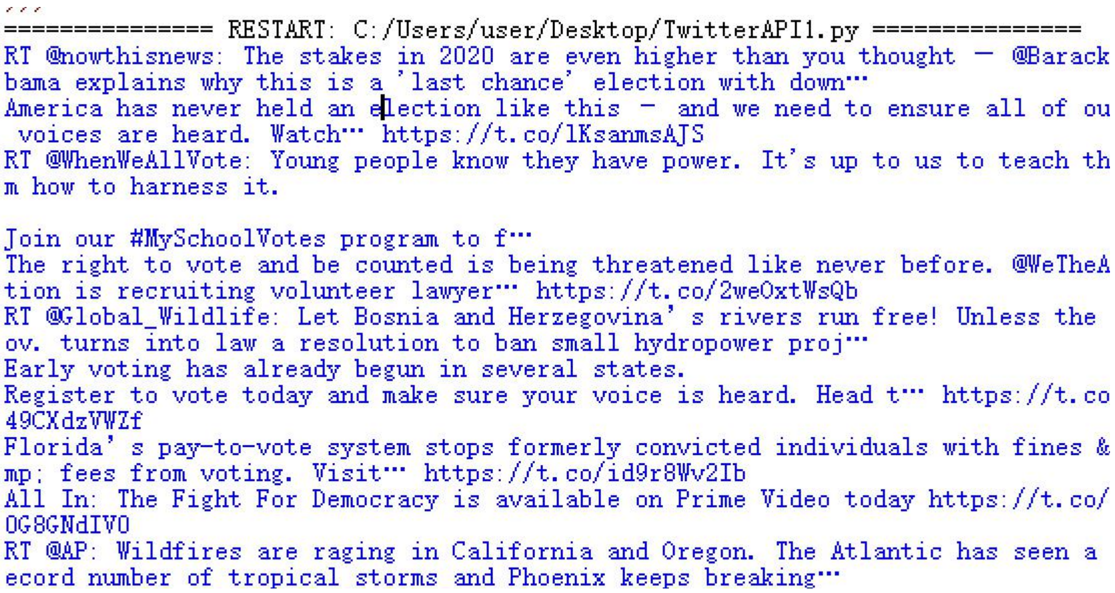
```
Python 3.6.2 (v3.6.2:5fd33b5, Jul  8 2017, 04:57:36) [MSC v.1900 64 bit (AMD64)]
 on win32
Type "copyright", "credits" or "license()" for more information.
>>>
============= RESTART: C:\Users\user\Desktop\tweetAPIexample.py =============
Writing tweet objects to JSON please wait...
Done
>>> 
```

Another simple example code to retrieve tweets and directly print them instead of saving them to tweet.json:

```
mport tweepy

import sys
non_bmp_map = dict.fromkeys(range(0x10000, sys.maxunicode + 1), 0xfffd)

consumer_key = "Enter the consumer_key"
consumer_secret = "Enter the consumer_secret"
access_key = "Enter the access_key"
access_secret = "Enter the access_secret"

auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
auth.set_access_token(access_key, access_secret)

api = tweepy.API(auth)

public_tweets = api.user_timeline('LeoDiCaprio') //who’s tweets you want to record

i = 1
for tweet in public_tweets:
    print (tweet.text.translate(non_bmp_map))
    i = i + 1
    if i == 10:                                    //show 10 tweets
        break
```

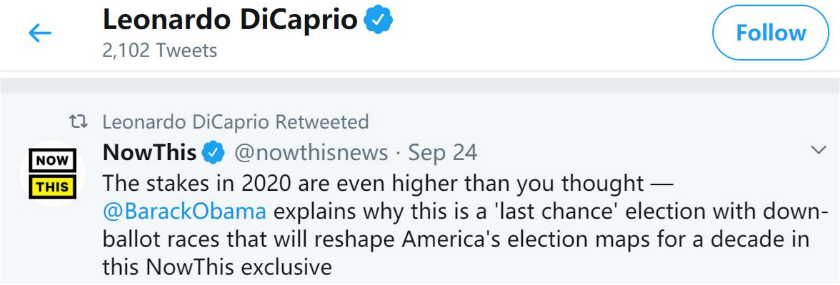
Enter the keys, and run this **TwitterAPIprint.py** file

Attention: *It is important to use non_bmp_map since emoji may cause error (UnicodeEncodeError: 'UCS-2' codec can't encode characters in position 12-12: Non-BMP character not supported in Tk) when printing the tweet.text.*



```
'''
=============== RESTART: C:/Users/user/Desktop/TwitterAPI1.py ===============
RT @nowthisnews: The stakes in 2020 are even higher than you thought — @Barack
bama explains why this is a 'last chance' election with down…
America has never held an election like this - and we need to ensure all of ou
 voices are heard. Watch… https://t.co/1KsanmsAJS
RT @WhenWeAllVote: Young people know they have power. It's up to us to teach th
m how to harness it.

Join our #MySchoolVotes program to f…
The right to vote and be counted is being threatened like never before. @WeTheA
tion is recruiting volunteer lawyer… https://t.co/2weOxtWsQb
RT @Global_Wildlife: Let Bosnia and Herzegovina' s rivers run free! Unless the
ov. turns into law a resolution to ban small hydropower proj…
Early voting has already begun in several states.
Register to vote today and make sure your voice is heard. Head t… https://t.co
49CXdzVWZf
Florida' s pay-to-vote system stops formerly convicted individuals with fines &
mp; fees from voting. Visit… https://t.co/id9r8Wv2Ib
All In: The Fight For Democracy is available on Prime Video today https://t.co/
0G8GNdIVO
RT @AP: Wildfires are raging in California and Oregon. The Atlantic has seen a
ecord number of tropical storms and Phoenix keeps breaking…
```

We derived the tweets from LeoDiCaprio as shown below.



Leonardo DiCaprio
2,102 Tweets

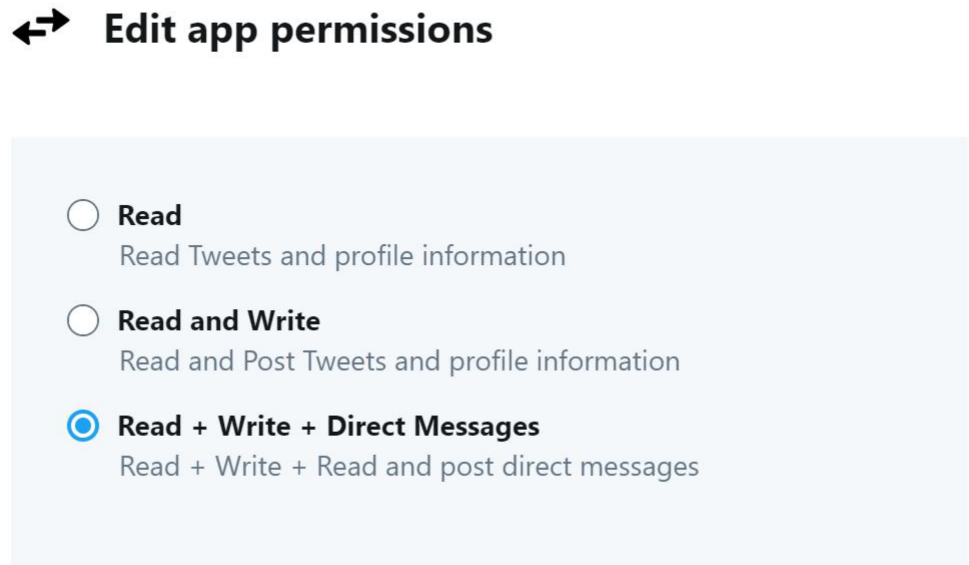
Leonardo DiCaprio Retweeted

NowThis @nowthisnews · Sep 24

The stakes in 2020 are even higher than you thought — @BarackObama explains why this is a 'last chance' election with down-ballot races that will reshape America's election maps for a decade in this NowThis exclusive

(3) Send tweets using Twitter API

Remember to set "Read+Write+Direct Messages" under settings in Developer Portal and keys need to be regenerated again to activate this setting.



Edit app permissions

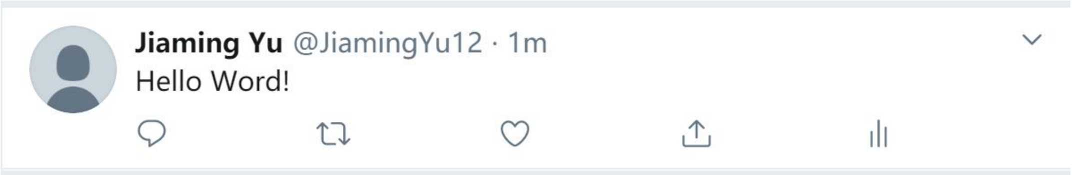
○ Read
Read Tweets and profile information

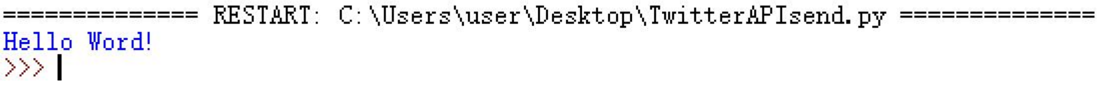
○ Read and Write
Read and Post Tweets and profile information

● Read + Write + Direct Messages
Read + Write + Read and post direct messages

Run the code **TwitterAPIsend.py** after entering keys:

```
import tweepy
import sys
non_bmp_map = dict.fromkeys(range(0x10000, sys.maxunicode + 1), 0xfffd)

consumer_key = "Enter the consumer_key"
consumer_secret = "Enter the consumer_secret"
access_key = "Enter the access_key"
access_secret = "Enter the access_secret"

auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
auth.set_access_token(access_key, access_secret)

api = tweepy.API(auth)

api.update_status('Hello Word!')

public_tweets = api.home_timeline()

for tweet in public_tweets:
        print (tweet.text.translate(non_bmp_map))
```


Jiaming Yu @JiamingYu12 · 1m
Hello Word!


```
============== RESTART: C:\Users\user\Desktop\TwitterAPIsend.py ==============
Hello Word!
>>> |
```

As shown above, I tweets “Hello World” using Twitter API and retrieve this tweets and print it using tweepy.

(3) Test program to search using Twitter API:

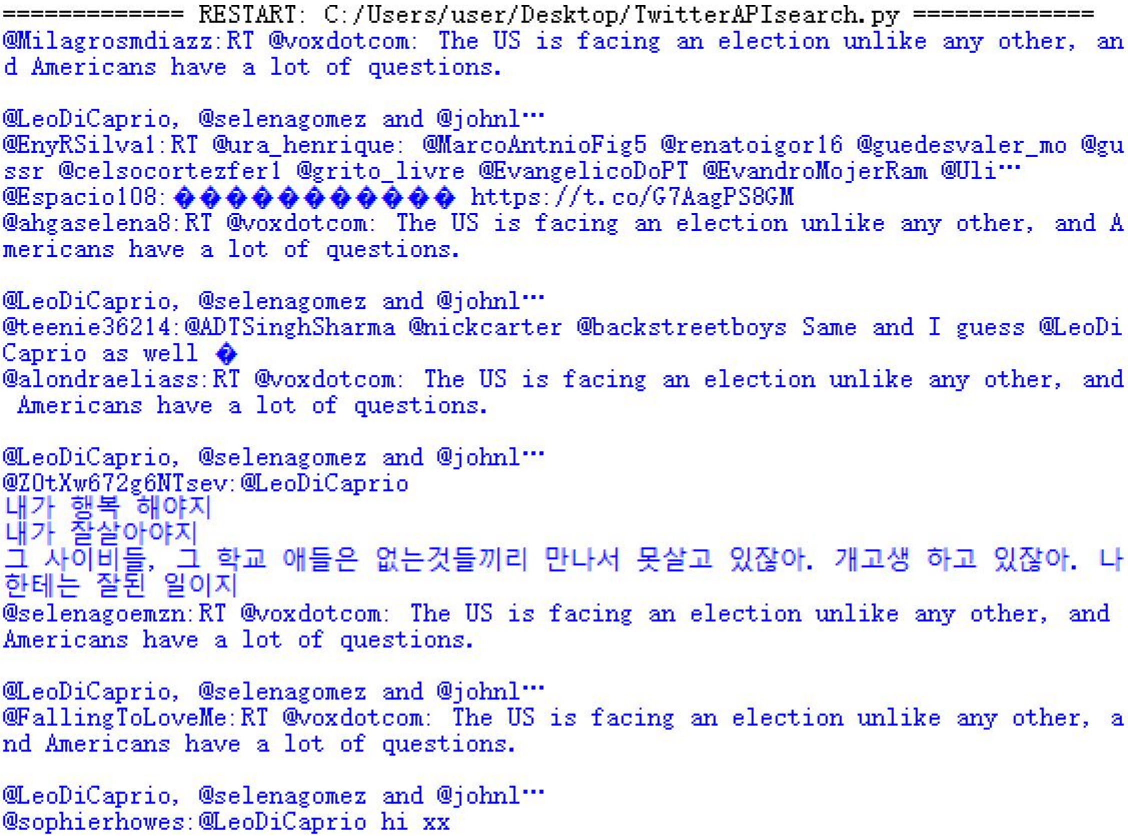
Entering keys and choose to search key word 'LeoDiCaprio’ for 10 items, Run **TwitterAPIsearch.py**:

```
import tweepy

import sys
non_bmp_map = dict.fromkeys(range(0x10000, sys.maxunicode + 1), 0xfffd)

consumer_key = "Enter the consumer_key"
consumer_secret = "Enter the consumer_secret"
access_key = "Enter the access_key"
access_secret = "Enter the access_secret"

auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
auth.set_access_token(access_key, access_secret)
```

```
api = tweepy.API(auth)

for tweet in tweepy.Cursor(api.search,q='LeoDiCaprio').items(10): //key word
        print ('@' + tweet.user.screen_name+':'+tweet.text.translate(non_bmp_map))
```

Attention: *It is important to use non_bmp_map since emoji may cause error (UnicodeEncodeError: 'UCS-2' codec can't encode characters in position 12-12: Non-BMP character not supported in Tk) when printing the tweet.text.*

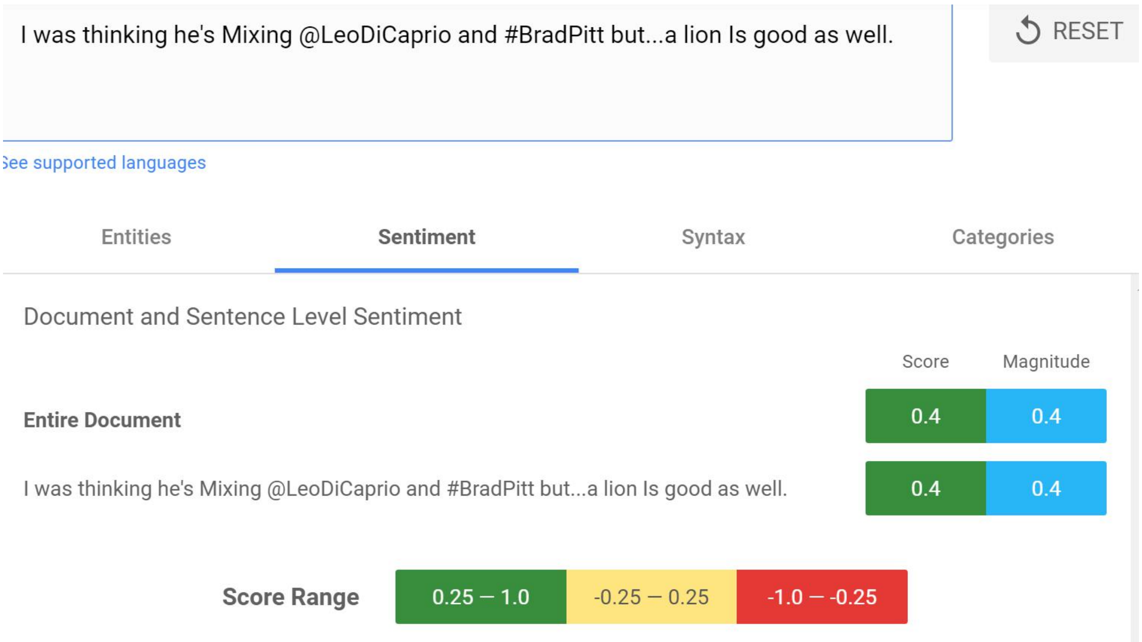
Then we derive the output:



```
============= RESTART: C:/Users/user/Desktop/TwitterAPIsearch.py =============
@Milagrosmdiazz:RT @voxdotcom: The US is facing an election unlike any other, an
d Americans have a lot of questions.

@LeoDiCaprio, @selenagomez and @johnl…
@EnyRSilva1:RT @ura_henrique: @MarcoAntnioFig5 @renatoigor16 @guedesvaler_mo @gu
ssr @celsocortezfer1 @grito_livre @EvangelicoDoPT @EvandroMojerRam @Uli…
@Espacio108:������������ https://t.co/G7AagPS8GM
@ahgaselena8:RT @voxdotcom: The US is facing an election unlike any other, and A
mericans have a lot of questions.

@LeoDiCaprio, @selenagomez and @johnl…
@teenie36214:@ADTSinghSharma @nickcarter @backstreetboys Same and I guess @LeoDi
Caprio as well �
@alondraeliass:RT @voxdotcom: The US is facing an election unlike any other, and
 Americans have a lot of questions.

@LeoDiCaprio, @selenagomez and @johnl…
@Z0tXw672g6NTsev:@LeoDiCaprio
내가 행복 해야지
내가 잘살아야지
그 사이비들, 그 학교 애들은 없는것들끼리 만나서 못살고 있잖아. 개고생 하고 있잖아. 나
한테는 잘된 일이지
@selenagoemzn:RT @voxdotcom: The US is facing an election unlike any other, and
Americans have a lot of questions.

@LeoDiCaprio, @selenagomez and @johnl…
@FallingToLoveMe:RT @voxdotcom: The US is facing an election unlike any other, a
nd Americans have a lot of questions.

@LeoDiCaprio, @selenagomez and @johnl…
@sophierhowes:@LeoDiCaprio hi xx
```

Phase 2(b) Google NLP

Try the API using tweets derived from TwitterAPIsearch.py:

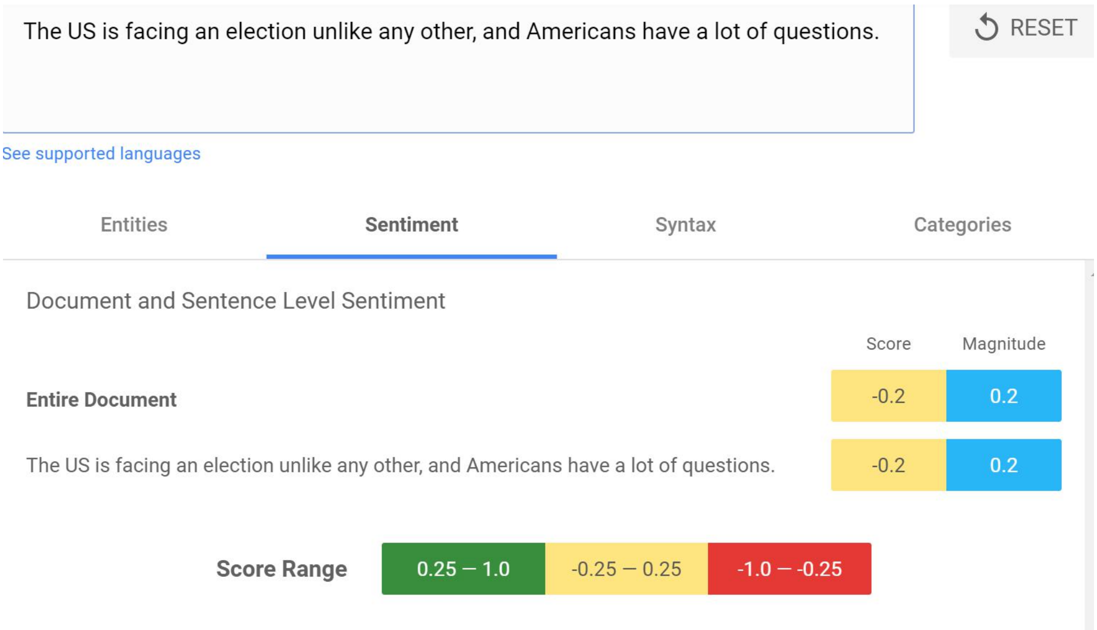


I was thinking he's Mixing @LeoDiCaprio and #BradPitt but...a lion Is good as well.

Document and Sentence Level Sentiment

	Score	Magnitude
Entire Document	0.4	0.4
I was thinking he's Mixing @LeoDiCaprio and #BradPitt but...a lion Is good as well.	0.4	0.4

Score Range	0.25 — 1.0	-0.25 — 0.25	-1.0 — -0.25



The US is facing an election unlike any other, and Americans have a lot of questions.

Document and Sentence Level Sentiment

	Score	Magnitude
Entire Document	-0.2	0.2
The US is facing an election unlike any other, and Americans have a lot of questions.	-0.2	0.2

Score Range	0.25 — 1.0	-0.25 — 0.25	-1.0 — -0.25