Introduction to twint

▾ Installation

```
# Download and insall twint

%%capture
!git clone --depth=1 https://github.com/twintproject/twint.git
!cd /content/twint && pip3 install . -r requirements.txt
!pip install aiohttp==3.7.0
!pip install nest_asyncio
```

▾ Import Libraries

```
# Import libraries

import twint

# To avoid "the event loop is already running" error message
import nest_asyncio
nest_asyncio.apply()

import pandas as pd
from wordcloud import WordCloud, STOPWORDS, ImageColorGenerator
from PIL import Image
import numpy as np
import matplotlib.pyplot as plt
import textwrap
```

▾ Data Collection by username

```
def collect_tweets_from_user(username, keywords, from_date, dst_file, limit = 50):

  # configure
  c = twint.Config()

  # select username
  c.Username = username

  # get tweets published from a set date
  c.Since = from_date

  # keyword to search
  c.Search = keywords
```

```
  # number of tweets to retrieve
  c.Limit = limit

  # store collected tweets as json file
  c.Output = dst_file
  c.Store_json = True

  # run twint
  twint.run.Search(c)
```
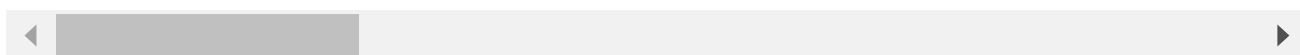
Procedure: Search for Joe Biden's tweets with "gas prices" from his official Twitter account with username "JoeBiden". The tweets were retrieved from 20:30hrs on 1st of March, 2022.

Result: 7 tweets were retrieved. However, running the function multiple times resulted in a merger of results. The result after each run was appended to the previous one. This means that twint does not overwrite on storage.

```
username = 'JoeBiden'
keywords = 'gas prices'
from_date = '2022-03-1 20:30:15'
dst_file = './biden_gas_prices.json'

collect_tweets_from_user(username, keywords, from_date, dst_file)
```

```
    1551279297851269122 2022-07-24 18:53:00 +0000 <JoeBiden> I grew up in a family where
    1550966738019287041 2022-07-23 22:11:00 +0000 <JoeBiden> With oil prices coming down
    1550896273250832385 2022-07-23 17:31:00 +0000 <JoeBiden> Americans have seen gas pri
    1520810784632324097 2022-05-01 17:02:01 +0000 <JoeBiden> I grew up in a family where
    1510056671313334280 2022-04-02 00:49:00 +0000 <JoeBiden> Putin's invasion of Ukraine
    1504572286258532358 2022-03-17 21:36:01 +0000 <JoeBiden> Oil prices are decreasing.
    1501992032419872768 2022-03-10 18:43:00 +0000 <JoeBiden> A large contributor to infl
    [!] No more data! Scraping will stop now.
    found 0 deleted tweets in this search.
```

▾ Convert to dataframe

Procedure: convert the json file into a readable file (pandas dataframe) and select only date, username and tweet.

Result: the dataframe is more readable at a glance compared to the json file.

```
def convert_to_df(tweets_json_file, cols = ["date", "username", "tweet"]):

  # read the file as pandas dataframe
  pandas_df = pd.read_json(tweets_json_file, lines = True)

  # select specified columns
  pandas_df = pandas_df[cols]
```

```
    return pandas_df
biden_tweet_df = convert_to_df("biden_gas_prices.json")
biden_tweet_df
```

	date	username	tweet
0	2022-07-24	joebiden	I grew up in a family where if the price of ga...
1	2022-07-23	joebiden	With oil prices coming down 20% from June high...
2	2022-07-23	joebiden	Americans have seen gas prices drop by about 6...
3	2022-05-01	joebiden	I grew up in a family where, when prices went ...
4	2022-04-02	joebiden	Putin's invasion of Ukraine has driven up gas ...
5	2022-03-17	joebiden	Oil prices are decreasing. Gas prices should t...
6	2022-03-10	joebiden	A large contributor to inflation this month wa...

▾ Display first 3 tweets

```
def show_tweets(df, N=3):
  for i in range(N):
    row = df.iloc[i]
    print(f'Username: {row["username"]}')
    print(f'Tweet: {textwrap.fill(row["tweet"], width=50)}')
    print('\n')


show_tweets(biden_tweet_df)

    Username: joebiden
    Tweet: I grew up in a family where if the price of gas
    went up, we felt it.  Gas prices have dropped
    since mid-June and should continue to come down in
    the days and weeks ahead. I know those extra
    dollars and cents mean something.


    Username: joebiden
    Tweet: With oil prices coming down 20% from June highs,
    it's unacceptable that prices at the pump have
    only come down by half as much.  It's time for oil
    and gas companies to pass these lower costs on to
    Americans.


    Username: joebiden
    Tweet: Americans have seen gas prices drop by about 60
    cents a gallon in the last month, saving the
    average driver about $30/month.  An extra 60 cents
    a gallon back in your pocket is meaningful. It's
    breathing room.   And we're not done working to
    lower costs for families.
```

▾ Show key elements with word cloud

```python
def show_word_cloud(df, img_mask_path, fig_size=(20, 7)):

  # convert image to numpy array
  img_color_mask = np.array(Image.open(img_mask_path))

  # put all tweets in one list
  text = df.tweet.tolist()

  """
  - remove square brackets,
  - join all words with white space between
  - convert all words to lowercase
  """
  text = ' '.join(text).lower()

  #create wordcloud by
  """
  - removing stopwords
  - changing background color to white
  - using image as mask
  """
  wordcloud = WordCloud(stopwords = STOPWORDS,
                        background_color='white',
                        mask = img_color_mask).generate(text)

  # configure image size
  plt.figure(figsize = fig_size)

  # turn off axis lines and labels
  plt.axis('off')

  # show image
  plt.imshow(wordcloud)
```

Procedure: create a wordcloud with Joe Biden's png image as mask.

Result: the text did not wrap properly around the image. The words 'putin' and 'ukraine' are non-generic terms that emerge from the analysis. This seems to suggest that Joe Biden thinks the war in Ukraine has an effect on gas prices in America.

```python
biden_img_path = "joebiden.png"
show_word_cloud(biden_tweet_df, biden_img_path)
```

Data Collection by Geolocation

```python
def collect_tweets(keywords, location, from_date, dst_file, limit = 50):

    # configure
    c = twint.Config()

    # get tweets published from a set date
    c.Since = from_date

    # keyword to search
    c.Search = keywords

    # geolocation to retrieve tweets from
    c.Geo = location

    # number of tweets to retrieve
    c.Limit = limit

    # store collected tweets as json file
    c.Output = dst_file
    c.Store_json = True

    # run twint
    twint.run.Search(c)
```
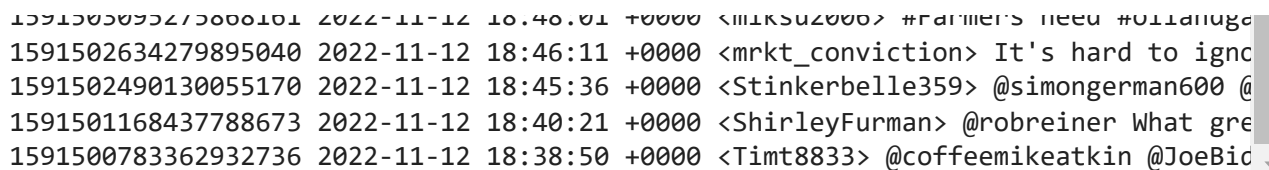
Procedure: search for tweets about "gas prices" from a radius of 3371926km within the United States. The tweets were retrieved from 20:30hrs on 1st of March, 2022.

Result: 60 tweets were retrieved. This is approximately 9 times the tweets retrieved from a specific user (Joe Biden) and more useful in guaging public opinion about a prevalent issue.

```
keywords = "gas prices"
location = "39.08776,-98.58605,3371926km"
from_date = "2022-03-1 20:30:15"
dst_file = "./usa_gas_prices.json"

collect_tweets(keywords, location, from_date, dst_file)
```

```
1591544867389427716 2022-11-12 21:34:00 +0000 <JRFranklin15> @itskenssoapbox It's
1591544594201968640 2022-11-12 21:32:55 +0000 <jmbler> @FatBoyInPa No wars? Ha! E
1591543995871682561 2022-11-12 21:30:32 +0000 <electriclucif3r> @ObsoleteDogma St
1591542875598516224 2022-11-12 21:26:05 +0000 <RocChocJhoc> The rich and upper mi
1591542832858533889 2022-11-12 21:25:55 +0000 <ChewartB> @GuyFair1 @Downsouthshib
1591542664264093696 2022-11-12 21:25:15 +0000 <dcpetterson> America was horrified
1591542657859596288 2022-11-12 21:25:13 +0000 <dcpetterson> They're telling you w
1591542649462616064 2022-11-12 21:25:11 +0000 <dcpetterson> You'll see how quickl
1591542641262727168 2022-11-12 21:25:09 +0000 <dcpetterson> We were told, again a
1591542637085233153 2022-11-12 21:25:08 +0000 <dcpetterson> How often have you be
1591542621637410819 2022-11-12 21:25:05 +0000 <dcpetterson> Instead, they tried t
1591542617430450176 2022-11-12 21:25:04 +0000 <dcpetterson> It isn't simply that
1591542610899894273 2022-11-12 21:25:02 +0000 <dcpetterson> Republicans pushed th
1591541142667296768 2022-11-12 21:19:12 +0000 <leo_olive_> A look at how gas pric
1591539644285751296 2022-11-12 21:13:15 +0000 <Xecutioner92> @khereva @Inthevorte
1591539584265248769 2022-11-12 21:13:00 +0000 <DamonCross11> @JoeBiden I had to t
1591538498888237056 2022-11-12 21:08:42 +0000 <Brospar2022> A look at how gas pri
1591538108390330368 2022-11-12 21:07:09 +0000 <Freeman4844458> @ericareport Win w
1591537694118932480 2022-11-12 21:05:30 +0000 <thegrandview2> @eclipsethis2003 Im
1591534597841424384 2022-11-12 20:53:12 +0000 <Cher_E_Garcia> @RexChapman then th
1591534208249638913 2022-11-12 20:51:39 +0000 <ForceBotNES> @3wojis I don't think
1591531248131923969 2022-11-12 20:39:53 +0000 <ericgrossarth> Getting the oil cha
1591530003350818817 2022-11-12 20:34:56 +0000 <badghostno> Cops taking credit for
1591528951805267968 2022-11-12 20:30:45 +0000 <RobinMelz> @Mike_AZCPA @momisalrig
1591528918913519618 2022-11-12 20:30:38 +0000 <Richard83547647> Do Democrats hate
1591528669511831552 2022-11-12 20:29:38 +0000 <Gabriel4026> @iluv_pie23 @QuoteDig
1591527898925903872 2022-11-12 20:26:34 +0000 <bwmoon1> @michelle__703 @Lancegood
1591527133452861441 2022-11-12 20:23:32 +0000 <DamonCross11> I had to take a Twit
1591525182837256193 2022-11-12 20:15:47 +0000 <mecque73> @bra66 @gtconway3d @morg
1591524496749518848 2022-11-12 20:13:03 +0000 <Kiernanisnthere> It's not heading
1591524465875341312 2022-11-12 20:12:56 +0000 <celticlady39> @joncoopertweets Lov
1591522483945222145 2022-11-12 20:05:03 +0000 <LukeLandry2022> @IngrahamAngle Not
1591521399306264576 2022-11-12 20:00:45 +0000 <HECHOOnline> Big Oil's greed is ja
1591520945533222913 2022-11-12 19:58:57 +0000 <Wolf_Cajun> Right on cue. Gas pric
1591520098397061120 2022-11-12 19:55:35 +0000 <ebboyd> But everything changed for
1591519898244874240 2022-11-12 19:54:47 +0000 <dmbooth1963> @ericareport No are y
1591519565799952387 2022-11-12 19:53:28 +0000 <MiracleJanet> @IngrahamAngle You c
1591517268592271361 2022-11-12 19:44:20 +0000 <SoylentSmurf> @IngrahamAngle Laura
1591516866362904576 2022-11-12 19:42:44 +0000 <NipsBaby> @robreiner Oh wonderful!
1591515601541169153 2022-11-12 19:37:42 +0000 <ebboyd> So when the economy hit th
1591514176358600704 2022-11-12 19:32:03 +0000 <ebboyd> This summer's coverage of
1591512210156949504 2022-11-12 19:24:14 +0000 <MikeSullivan68> @Goo22Mc If you do
1591510989719367681 2022-11-12 19:19:23 +0000 <penzphan> @nathaliejacoby1 Republi
1591510083241902080 2022-11-12 19:15:47 +0000 <HardisonSophie> @GeorgeClover6 @Ff
1591507919253958657 2022-11-12 19:07:11 +0000 <Paisley4USA> Oh well...I'm extreme
1591507148064034817 2022-11-12 19:04:07 +0000 <Cithrah_Nyel> Half of this country
1591506180119138305 2022-11-12 19:00:16 +0000 <XboxGamers2020> TO ALL WOKE ASS DE

1591506136184029184 2022-11-12 19:00:06 +0000 <Liber8CopWatch> @SandyForLiberty I
1591505517494603776 2022-11-12 18:57:38 +0000 <nkokesh> @WiStateJournal Media say
1591505371642093568 2022-11-12 18:57:03 +0000 <Anti_GOP_Vet> @JAbel_Lvppa Scared
1591504945294999555 2022-11-12 18:55:22 +0000 <huzzahmpls> Counterpoint: the deci
1591503099527868161 2022-11-12 18:48:01 +0000 <miksu2006> #Farmers need #oilandgi
```

```
1591503095273868161 2022-11-12 18.48.01 +0000 <mlksu2606> #Farmers need #oilandga
1591502634279895040 2022-11-12 18:46:11 +0000 <mrkt_conviction> It's hard to igno
1591502490130055170 2022-11-12 18:45:36 +0000 <Stinkerbelle359> @simongerman600 @
1591501168437788673 2022-11-12 18:40:21 +0000 <ShirleyFurman> @robreiner What gre
1591500783362932736 2022-11-12 18:38:50 +0000 <Timt8833> @coffeemikeatkin @JoeBid
```

◀ ▶

```
usa_tweet_df = convert_to_df("usa_gas_prices.json")

show_tweets(usa_tweet_df)
```

    Username: mas__n
    Tweet: @BrendanBuffet @CoulierGeorge @Rob_roborob @ksorbs
    I wouldn't care at all what he sounds like or how
    he pronounces his words if the economy was in a
    good state, inflation wasn't at an all time high,
    gas prices, etc. etc. etc. etc. But here we are.

    Username: snapdragon16
    Tweet: @BuzzPatterson Yup, we noticed Right wing media
    has also dropped gas prices, baby formula, the
    Border and Fentanyl. Amazing how they're not
    concerns anymore.

    Username: estopinalcathy
    Tweet: @GoexFFFg Praying for all because if we don't win
    the house plenty people will be cold with no
    propane, diesel and gas prices higher. The middle
    class people can't afford total electric cars.
    With every 3yrs a new battery that costs is
    30,000. Come on little state doesn't make that.

▾ Show key elements with word cloud

Procedure: create a wordcloud with usa png image as mask.

Result: terms like "high", "gas", "inflation", "prices", "economy", "issue", "biden" and "crime" suggests that the public are worried about gas prices and perhaps blame Joe Biden and the democrats.

```
us_img_path = 'usa_map.png'
show_word_cloud(usa_tweet_df, us_img_path, fig_size=(25, 10))
```

Buhari's tweets about climate change

Procedure: search for Buhari's tweets about "climate change" from his official Twitter account with username "MBuhari". The tweets were retrieved from 20:30hrs on 1st of March, 2022.

Result: 19 tweets were retrieved. Buhari seems to be tweeting a lot about climate change. The recent cop27 may be the reason for this.

```
tw_username = 'MBuhari'
keywords = 'climate change'
from_date = '2022-03-1 20:30:15'
dst_file = './buhari_climate_tweets.json'

collect_tweets_from_user(tw_username, keywords, from_date, dst_file)

    1590739619754438656 2022-11-10 16:14:14 +0000 <MBuhari> While such projects have the
    1590739591266721793 2022-11-10 16:14:07 +0000 <MBuhari> First, rich countries should
    1590739337637146624 2022-11-10 16:13:07 +0000 <MBuhari> According to the United Nati
    1590738671149338627 2022-11-10 16:10:28 +0000 <MBuhari> Together with drought-driven
    1590738559752843264 2022-11-10 16:10:01 +0000 <MBuhari> How Not To Talk With Africa
    1576122822346539008 2022-10-01 08:12:18 +0000 <MBuhari> This administration embarked
    1575204003654139906 2022-09-28 19:21:15 +0000 <MBuhari> I am confident that the Coun
    1575202796906766336 2022-09-28 19:16:27 +0000 <MBuhari> I must point out that there
    1575201617954996225 2022-09-28 19:11:46 +0000 <MBuhari> Our Administration remains v
    1575200855980408833 2022-09-28 19:08:44 +0000 <MBuhari> I also approved, on 25th Jul
    1575200371844165634 2022-09-28 19:06:49 +0000 <MBuhari> In November 2021, after #COP
    1575199407833612288 2022-09-28 19:02:59 +0000 <MBuhari> Today I inaugurated the Nati
    1572577618742083587 2022-09-21 13:24:56 +0000 <MBuhari> ... to drive action towards
```
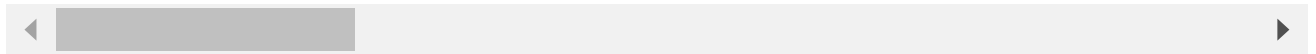
```
1572576944465809411 2022-09-21 13:22:15 +0000 <MBuhari> These and other climate-rela
1572576822814216192 2022-09-21 13:21:46 +0000 <MBuhari> Yet, we are the hardest hit
1572576599614300160 2022-09-21 13:20:53 +0000 <MBuhari> As part of Nigeria's efforts
1572576512863514625 2022-09-21 13:20:32 +0000 <MBuhari> Climate change reduces oppor
1572576184957022209 2022-09-21 13:19:14 +0000 <MBuhari> In every address I have deli
1572574272664764417 2022-09-21 13:11:38 +0000 <MBuhari> ... climate change, irregula
[!] No more data! Scraping will stop now.
found 0 deleted tweets in this search.
```

```
buhari_tweet_df = convert_to_df("buhari_climate_tweets.json")
buhari_tweet_df
```

	date	username	tweet
0	2022-11-10	mbuhari	While such projects have their uses, far more ...
1	2022-11-10	mbuhari	First, rich countries should direct a greater ...
2	2022-11-10	mbuhari	According to the United Nations, Africa is the...
3	2022-11-10	mbuhari	Together with drought-driven famine in the Hor...
4	2022-11-10	mbuhari	How Not To Talk With Africa About Climate Chan...
5	2022-10-01	mbuhari	This administration embarked on addressing cri...
6	2022-09-28	mbuhari	I am confident that the Council will, ahead of...
7	2022-09-28	mbuhari	I must point out that there are some noticeabl...
8	2022-09-28	mbuhari	Our Administration remains very committed to N...
9	2022-09-28	mbuhari	I also approved, on 25th July 2022, the appoin...
10	2022-09-28	mbuhari	In November 2021, after #COP26 in Glasgow, I s...
11	2022-09-28	mbuhari	Today I inaugurated the National Council on Cl...
12	2022-09-21	mbuhari	... to drive action towards the fulfilment of ...
13	2022-09-21	mbuhari	These and other climate-related occurrences ar...
14	2022-09-21	mbuhari	Yet, we are the hardest hit by the consequence...
15	2022-09-21	mbuhari	As part of Nigeria's efforts at achieving our ...
16	2022-09-21	mbuhari	Climate change reduces opportunity and prosper...
17	2022-09-21	mbuhari	In every address I have delivered to this augu...
18	2022-09-21	mbuhari	... climate change, irregular migration, and d...

```
show_tweets(buhari_tweet_df)
```

```
Username: mbuhari
Tweet: While such projects have their uses, far more
money needs to go to helping Africa adapt to the
effects of climate change — which seems only fair
for a continent that produces less than 3 percent
```

```
of global emissions.


Username: mbuhari
Tweet: First, rich countries should direct a greater
share of funding to developing nations' adaptation
to the effects of climate change. Most financing
currently flows toward mitigation projects, such
as renewable energy projects, that reduce
emissions.


Username: mbuhari
Tweet: According to the United Nations, Africa is the
continent worst affected by climate change despite
contributing the least to it.
```

▼ Wordcloud of Buhari's climate tweets

Procedure: create a wordcloud with Buhari's png image as mask.

Result: the text did not wrap around the image. Generic terms like "africa", "climate change", "administration", "cop27", "nigeria" emerged from the analysis. This suggests a general concern for climate change in relation to Nigeria and Africa.

```
buhari_img_path = "buhari.png"
show_word_cloud(buhari_tweet_df, buhari_img_path)
```

▾ Tweets about climate change from Nigeria

Procedure: search for tweets about "climate change" from a radius of 459008km within Nigeria. The tweets were retrieved from 20:30hrs on 1st of March, 2022.

Result: 60 tweets were retrieved. This is approximately 3 times the tweets retrieved from a specific user (Muhammadu Buhari).

```
keywords = "climate change"
location = "9.25394,7.19971,459008km"
from_date = "2022-03-1 20:30:15"
dst_file = "./nigeria_climate_tweets.json"

collect_tweets(keywords, location, from_date, dst_file)

    1591556976902918147 2022-11-12 22:22:07 +0000 <OBASIJO95783370>  https://t.co/gUc
    1591556777233072132 2022-11-12 22:21:20 +0000 <9aufal> Climate Change: Western cc
    1591552164014739456 2022-11-12 22:03:00 +0000 <Legacyrach> @SophiaKianni @UN @UNF
    1591551532927000576 2022-11-12 22:00:29 +0000 <ThinkGreencmr> We are at the Cop 2
    1591550345771106305 2022-11-12 21:55:46 +0000 <Teejay2rule> Adenike is a Nigerian
    1591549456721539073 2022-11-12 21:52:14 +0000 <VictoriaOmoyeni> Adenike is a Nige
    1591549055544750080 2022-11-12 21:50:39 +0000 <Agrigrow1> A May 2022 study in the
    1591542980791656448 2022-11-12 21:26:30 +0000 <FrederickA1212> After gunning down
    1591541793484509185 2022-11-12 21:21:47 +0000 <PlusTVAfrica> Climate Change: Chak
    1591535178274738176 2022-11-12 20:55:30 +0000 <D_edufeminist> Climate change has
    1591533388007346177 2022-11-12 20:48:23 +0000 <WaterWideNg> Thousands of communit
    1591530220750000128 2022-11-12 20:35:48 +0000 <YouthAidDev_i> Right in the midst
    1591530121961570304 2022-11-12 20:35:24 +0000 <Oluwabori188> @JennyMBriggs @SNVwo
    1591525664687099904 2022-11-12 20:17:42 +0000 <RukkyJoy> Rain in November here in
    1591518679543746561 2022-11-12 19:49:56 +0000 <Mr_Tunic> Can't conjure a more biz
    1591518257806467072 2022-11-12 19:48:16 +0000 <TheKennethDarko> Ghanaian climate
    1591515608239468545 2022-11-12 19:37:44 +0000 <adomfeh> Egypt, US announce over $
    1591514203831304192 2022-11-12 19:32:09 +0000 <MayowaFatoye3> on this day 12/11/2
    1591511988303433728 2022-11-12 19:23:21 +0000 <StephenOlateru> @IAtalkspace 100%
    1591510843715461120 2022-11-12 19:18:48 +0000 <BrightAda11> @AMMEMoRecycling @bra
    1591506592012570624 2022-11-12 19:01:54 +0000 <Mariambala> @D_ChyChy Climate chan
    1591505593214595072 2022-11-12 18:57:56 +0000 <MrSNoockie> President Buhari Full
    1591505081094242304 2022-11-12 18:55:54 +0000 <oddtvlive> Fin de la 1ère semaine
    1591504454230372353 2022-11-12 18:53:25 +0000 <salemmayenan> @Eat_Smoke_Drink @CC
    1591504029548367872 2022-11-12 18:51:44 +0000 <tachasweet> Putting a price on nat
    1591503831208267782 2022-11-12 18:50:56 +0000 <salemmayenan> @Eat_Smoke_Drink @CC
    1591501459337924609 2022-11-12 18:41:31 +0000 <JaredFalk4> The Climate changes wi
    1591500794003853313 2022-11-12 18:38:52 +0000 <Moses_GodFamily> @ArcticBasecamp I
    1591498587812380676 2022-11-12 18:30:06 +0000 <BriceSinsin> Adapt or starve: COP2
    1591494625583566848 2022-11-12 18:14:21 +0000 <cifutemi> @OhFega @digitalgrandeur
    1591493501887606784 2022-11-12 18:09:54 +0000 <tayoainafilms> Saw some cool peopl
    1591492921542725632 2022-11-12 18:07:35 +0000 <peoples_trustng> COP27: FG unveils
    1591491488470417408 2022-11-12 18:01:53 +0000 <Mr_Tunic> Chelsea stinking in yet
    1591491026812047365 2022-11-12 18:00:03 +0000 <jamese457> Rainn Wilson changes hi
    1591488742766018561 2022-11-12 17:50:59 +0000 <Fattsoul> I don't understand, but
    1591485986210734080 2022-11-12 17:40:02 +0000 <niyiogungbade1> this particular fr
    1591485859173654530 2022-11-12 17:39:31 +0000 <misgunception> @NastyOldWomyn Thus
    1591484844571492352 2022-11-12 17:35:29 +0000 <Okai_AA> Buhari's climate change a
    1591482245969285120 2022-11-12 17:25:10 +0000 <Sujodamystique> @jide_joseph_ Clim
```

```
1591481909766651904 2022-11-12 17:23:50 +0000 <Recycle2ReadBox> Remember, the goa
1591480820342345730 2022-11-12 17:19:30 +0000 <stigue2001> Mr president is lookin
1591478715795804161 2022-11-12 17:11:08 +0000 <achirobert1> @vonderleyen @Cop27 M
1591478140802564099 2022-11-12 17:08:51 +0000 <Recycle2ReadBox> Imagine a box ful
1591478029674762241 2022-11-12 17:08:25 +0000 <SamuelCOkorie> Keeping quite about
1591476536368336897 2022-11-12 17:02:29 +0000 <thetrusttv> CLIMATE CHANGE: Biden
1591474465363611648 2022-11-12 16:54:15 +0000 <4Deep_NatureBoy> 100s of elites on
1591474050974744577 2022-11-12 16:52:36 +0000 <conscienceInte3> The action of pla
1591472993653374979 2022-11-12 16:48:24 +0000 <SalmanDuke> As part of IBO @Jideko
1591470720181501952 2022-11-12 16:39:22 +0000 <JackFrostee88> @DisgruntledC0n @Zu
1591469042619281408 2022-11-12 16:32:42 +0000 <Jidekoro> As part of my commitment
1591468709121593344 2022-11-12 16:31:22 +0000 <LibertarianLew> @GilHough @BRahmin
1591462305736593408 2022-11-12 16:05:56 +0000 <he_aztobewrite> Remember my tweet
1591462082901254145 2022-11-12 16:05:03 +0000 <adesola_yinka> When the climate ch
1591461784883703808 2022-11-12 16:03:52 +0000 <GbengaGOLD> COP27: FG unveils '250
1591461503483498505 2022-11-12 16:02:45 +0000 <mayordeah_> @dwnews What I think i
1591460427262828544 2022-11-12 15:58:28 +0000 <petermarie_> @BrymOlawale "50 mill
```

```
ng_tweet_df = convert_to_df("nigeria_climate_tweets.json")

show_tweets(ng_tweet_df)
```

Username: obasijo95783370
Tweet: https://t.co/gUoHjZqFf4 @Momentum_UNFCCC @POTUS
@UNFCCC @_AfricanUnion @CANIntl
https://t.co/ygu7aHYXrs

Username: 9aufal
Tweet: Climate Change: Western countries are hypocrites,
can't dictate to Africa – Buhari

Username: legacyrach
Tweet: @SophiaKianni @UN @UNFCCC You do it elso else !

▼ Wordcloud of climate tweets from Nigeria

Procedure: create a wordcloud with nigeria png image as mask.

Result: the text did not wrap properly around the image. Asides climate change and cop27, few terms emerge from this analysis. There is a cluster of terms "environmental", "understand", "buhari" and "africa". There seems to be a general discussion about climate change in Nigeria because of cop27.

```
naija_img_path = 'nigeria.png'
show_word_cloud(ng_tweet_df, naija_img_path, fig_size=(25, 10))
```

situation 250k address carbon global topics livelihood induced state dizpsbkunq president take unveils
anything cop27p pacja1 cop nobody issue philkilonzo exercise
egypt nigerian climatejustice agriculture tree love dear elegushi without
another quite continent sh2jmzk6v momentum_unfccc cause imagine reading lot worse
action sharm hypocrites iz7zkbjzk4 solution highlight
t co communities international going right justice sheick
must may keeping promoting
trying lizwathuti earth will beach now article know act time
forces cool galamsey organizations soil cop27
group activist read heads one adenike west
cop27p world system leaders amp individual agenda tinubu
worst name visit unfccc effect
2m leewhitecbe climate study unfpa_benin yet planet
work reward life around million
use held add aimed project please https t bola climateaction yes
youth nigeria ahmed need agric abnjamnshi currently el
trust asiwaju fg eat_smoke_drink flooding
believe man towards much cleaning petition
critical mwenga_charles guy election
environmental unicef_benin africa joined people great
fight even minister side waste thinkgreen
understand buhari potus us france_sdg change protest together club
human combating
sustainability environment
dictate climate change
knowledge vulnerable water de la warming
planting un facing vision climatechange african full canintl
commitment demanding event western guohjzqff4
richardmunang sophiakianni food