Tweepy is a Python library for accessing the Twitter API. It is great for simple automation and creating twitter bots.

webbrowser module is a convenient web browser controller. It provides a high-level interface that allows displaying Web-based documents to users.

Python has defined a module, “time” which allows us to handle various operations regarding time, its conversions and representations, which find its use in various applications in life.

In [34]:
```
import tweepy
import webbrowser
import time
```

Consumer key is the API key that a service provider (Twitter, Facebook, etc.) issues to a consumer (a service that wants to access a user's resources on the service provider). This key is what identifies the consumer.

Consumer secret is the consumer "password" that is used, along with the consumer key, to request access (i.e. authorization) to a user's resources from a service provider.

Access token is what is issued to the consumer by the service provider once the consumer completes authorization.

In [35]:
```
CONSUMER_KEY = "dl5cr1RBK1tRZZUWbIgNRe1vJ"
CONSUMER_SECRET = "O0Ryv7Gbbzu4YdSxmAZl987SO38A8jn6jrzoiOKruao7Ar0Rdw"
```

OOB is an alternative to the traditional 3-step process of an OAuth flow (known as 3-Legged-OAuth). The user is not redirected after granting access to a consumer, instead, a code is shown to the user which he needs to manually input in the Consumer App.

In [36]:
```
callback_uri = 'oob'
```

In [37]:
```
auth = tweepy.OAuthHandler(CONSUMER_KEY,CONSUMER_SECRET,callback_uri)
redirect_url = auth.get_authorization_url()
webbrowser.open(redirect_url)
```

Out[37]:
```
True
```

In [38]:
```
user_print_input = input("What is the pin value? ")
```

```
What is the pin value? 9410637
```

In [39]:
```
user_print_input
```

Out[39]:
```
'9410637'
```

In [40]:
```
auth.get_access_token(user_print_input)
```

Out[40]:
```
('1158801192471781377-liJiC0N3dsTOgx3hKyksrB8fiqz4F3',
 'ov4qMNW2LBoCCTFSOJNuBCwnfOLw7Oh7n2rpFln9IxEQY')
```

In [41]:
```
print(auth.access_token)
```

```
1158801192471781377-liJiC0N3dsTOgx3hKyksrB8fiqz4F3
```

In [42]:
```
print(auth.access_token_secret)
```

```
ov4qMNW2LBoCCTFSOJNuBCwnfOLw7Oh7n2rpFln9IxEQY
```

In [43]:
```
api = tweepy.API(auth)
```

Pandas are useful in performing 5 major steps of data analysis - Load the data, clean/manipulate it, prepare it, model it, and analyze the data

In [44]:
```
import pandas as pd
```

Cursor can be used to paginate for any API methods that support pagination. Parameters.

Twitter ID of location which is listed in the Tweet if geolocation is enabled for the user.

In [45]:
```
query='news'
max_tweets = 800
searched_tweets=[status for  status in tweepy.Cursor(api.search_tweets, q=query,lang="en").items(max_tweets)]
```

In [46]:
```
searched_tweets[50]
```

Out[46]:
```
Status(_api=<tweepy.api.API object at 0x0000014166085B80>, _json={'created_at': 'Tue Dec 07 11:18:46 +0000
2021', 'id': 1468178164887298048, 'id_str': '1468178164887298048', 'text': 'RT @XaLaRa_Se_Lew: BBC News - V
ishal Garg: US boss fires 900 employees over Zoom\nhttps://t.co/p6FsGlSPq4', 'truncated': False, 'entitie
s': {'hashtags': [], 'symbols': [], 'user_mentions': [{'screen_name': 'XaLaRa_Se_Lew', 'name': 'Juan - { Pn
MnKtDmYp } ᴄᴘ ✊ᴇᴛ', 'id': 87005734, 'id_str': '87005734', 'indices': [3, 17]}], 'urls': [{'url': 'https://
t.co/p6FsGlSPq4', 'expanded_url': 'https://www.bbc.co.uk/news/business-59554585', 'display_url': 'bbc.co.u
k/news/business-…', 'indices': [81, 104]}]}, 'metadata': {'iso_language_code': 'en', 'result_type': 'recen
t'}, 'source': '<a href="https://mobile.twitter.com" rel="nofollow">Twitter Web App</a>', 'in_reply_to_stat
us_id': None, 'in_reply_to_status_id_str': None, 'in_reply_to_user_id': None, 'in_reply_to_user_id_str': No
ne, 'in_reply_to_screen_name': None, 'user': {'id': 1300076450473816065, 'id_str': '1300076450473816065',
'name': '🛸Γιωργος Μελιτζανας👽Ουφο με πατεντα🎟️', 'screen_name': 'melitzanas_UFO', 'location': 'Κατοικος
της επιπεδης Γης.', 'description': 'Δεν κανω το εμβολιο γιατι θα αλλαξει το Ειναι μου.\nΗ πρωτη μου επαφη μ
ε εξωγηινο εγινε στις 8/8/18👽\nΑυτοδιδακτος επιστημονας-ερευνητης.🔬👚\nΕχω μπει σε ουφο.🛸', 'url': Non
e, 'entities': {'description': {'urls': []}}, 'protected': False, 'followers_count': 461, 'friends_count':
527, 'listed_count': 0, 'created_at': 'Sun Aug 30 14:22:56 +0000 2020', 'favourites_count': 49347, 'utc_off
set': None, 'time_zone': None, 'geo_enabled': False, 'verified': False, 'statuses_count': 3743, 'lang': Non
e, 'contributors_enabled': False, 'is_translator': False, 'is_translation_enabled': False, 'profile_backgro
und_color': 'F5F8FA', 'profile_background_image_url': None, 'profile_background_image_url_https': None, 'pr
ofile_background_tile': False, 'profile_image_url': 'http://pbs.twimg.com/profile_images/146643807768201216
```

The try block lets you test a block of code for errors. The except block lets you handle the error.

In [47]:
```
columns = set()
allowed_types = [str,int]
tweets_data = []

for status in searched_tweets:
    status_dict = dict(vars(status))
    keys = status_dict.keys()
    single_tweet_data = {}
    for k in keys:
        try:
            v_type = type(status_dict[k])
        except:
            v_type = None

        if v_type != None:

            if v_type in allowed_types:
                single_tweet_data[k] = status_dict[k]
                columns.add(k)
    tweets_data.append(single_tweet_data)
```

In [48]:
```
header_cols = list(columns)
```

In [49]:
```
header_cols
```

Out[49]:
```
['in_reply_to_screen_name',
 'quoted_status_id',
 'source',
 'text',
 'quoted_status_id_str',
 'id_str',
 'in_reply_to_status_id_str',
 'in_reply_to_user_id_str',
 'retweet_count',
 'favorite_count',
 'in_reply_to_status_id',
 'in_reply_to_user_id',
 'lang',
 'id',
 'source_url']
```

In [50]:
```
tweets_data
```

```
  'favorite_count': 0,
  'lang': 'en'},
 {'id': 1468178180548837377,
  'id_str': '1468178180548837377',
  'text': 'RT @datingdecisions: One time early in my career, I forwarded my mom one of my paper acceptances
along with the reviews. She replied,"Aww I…',
  'source': 'Twitter for Android',
  'source_url': 'http://twitter.com/download/android',
  'quoted_status_id': 1467952087841624064,
  'quoted_status_id_str': '1467952087841624064',
  'retweet_count': 2,
  'favorite_count': 0,
  'lang': 'en'},
 {'id': 1468178179550367746,
  'id_str': '1468178179550367746',
  'text': 'RT @shayararar: Reporters from all major news channels are waiting outside Six Senses Fort Barwa
ra. I guess they are our best sources for u…',
  'source': 'Twitter Web App',
  'source_url': 'https://mobile.twitter.com',
  'retweet_count': 11
```

In [51]:
```
df = pd.DataFrame(tweets_data,columns=header_cols)
```

In [52]:
```
df
```

Out[52]:

	in_reply_to_screen_name	quoted_status_id	source	text	quoted_status_id_str	id_str	in_reply_to_statu
0	NaN	NaN	Techie Wiz bot	RT @SalesTechStar: Anova Elevates The Bar On C...	NaN	1468178182335520769	
1	NaN	NaN	Twitter Web App	RT @shivKR007: Main Stream Media is silent Aft...	NaN	1468178182012502016	
2	NaN	NaN	Twitter for Android	RT @RealDLHughley: Former Restaurant Workers A...	NaN	1468178180762656768	
3	NaN	1.467952e+18	Twitter for Android	RT @datingdecisions: One time early in my care...	1467952087841624064	1468178180548837377	
4	NaN	NaN	Twitter Web App	RT @shayararar: Reporters from all major news ...	NaN	1468178179550367746	
...	...	...	...	...	...	...	
795	AmandaDupont	NaN	Twitter for Android	@AmandaDupont calling @official_jubjub into or...	NaN	1468177949803397121	
796	NaN	NaN	Twitter for iPad	RT @paddydocherty: PROPOSAL: we abolish billio...	NaN	1468177949669171202	
797	NaN	NaN	Twitter for iPad	RT @realTuckFrumper: Why Trump hasn't been cha...	NaN	1468177949597782021	
798	NaN	NaN	Twitter Web App	RT @MForstater: Transgender critics will be pr...	NaN	1468177949203615749	
799	NaN	NaN	Twitter for Android	RT @SIPTU: Strike begins at Job Clubs in Offal...	NaN	1468177949027414020	

800 rows × 15 columns

isnull(). sum(). sum() returns the number of missing values in the data set.

In [53]:
```
df.isnull().sum()
```

Out[53]:
```
in_reply_to_screen_name      734
quoted_status_id             779
source                         0
text                           0
quoted_status_id_str         779
id_str                         0
in_reply_to_status_id_str    740
in_reply_to_user_id_str      734
retweet_count                  0
favorite_count                 0
in_reply_to_status_id        740
in_reply_to_user_id          734
lang                           0
id                             0
source_url                     0
dtype: int64
```

In [54]:
```
df
```

Out[54]:

	in_reply_to_screen_name	quoted_status_id	source	text	quoted_status_id_str	id_str	in_reply_to_statu
0	NaN	NaN	Techie Wiz bot	RT @SalesTechStar: Anova Elevates The Bar On C...	NaN	1468178182335520769	
1	NaN	NaN	Twitter Web App	RT @shivKR007: Main Stream Media is silent Aft...	NaN	1468178182012502016	
2	NaN	NaN	Twitter for Android	RT @RealDLHughley: Former Restaurant Workers A...	NaN	1468178180762656768	
3	NaN	1.467952e+18	Twitter for Android	RT @datingdecisions: One time early in my care...	1467952087841624064	1468178180548837377	
4	NaN	NaN	Twitter Web App	RT @shayararar: Reporters from all major news ...	NaN	1468178179550367746	
...	...	...	...	...	...	...	
795	AmandaDupont	NaN	Twitter for Android	@AmandaDupont calling @official_jubjub into or...	NaN	1468177949803397121	
796	NaN	NaN	Twitter for iPad	RT @paddydocherty: PROPOSAL: we abolish billio...	NaN	1468177949669171202	
797	NaN	NaN	Twitter for iPad	RT @realTuckFrumper: Why Trump hasn't been cha...	NaN	1468177949597782021	
798	NaN	NaN	Twitter Web App	RT @MForstater: Transgender critics will be pr...	NaN	1468177949203615749	
799	NaN	NaN	Twitter for Android	RT @SIPTU: Strike begins at Job Clubs in Offal...	NaN	1468177949027414020	

800 rows × 15 columns

In [55]:
```
df.to_json('sentiment_anlysis_twitter2.json')
```

In [56]:
```
df.isnull().sum()
```

Out[56]:
```
in_reply_to_screen_name      734
quoted_status_id             779
source                         0
text                           0
quoted_status_id_str         779
id_str                         0
in_reply_to_status_id_str    740
in_reply_to_user_id_str      734
retweet_count                  0
favorite_count                 0
in_reply_to_status_id        740
in_reply_to_user_id          734
lang                           0
id                             0
source_url                     0
dtype: int64
```

In [57]:
```
df.index[0]
```

Out[57]:
```
0
```

In [58]:
```
tweets_data[50]
```

Out[58]:
```
{'id': 1468178164887298048,
 'id_str': '1468178164887298048',
 'text': 'RT @XaLaRa_Se_Lew: BBC News - Vishal Garg: US boss fires 900 employees over Zoom\nhttps://t.co/p6FsG
lSPq4',
 'source': 'Twitter Web App',
 'source_url': 'https://mobile.twitter.com',
 'retweet_count': 1,
 'favorite_count': 0,
 'lang': 'en'}
```

In [59]:
```
df
```

Out[59]:

	in_reply_to_screen_name	quoted_status_id	source	text	quoted_status_id_str	id_str	in_reply_to_statu
0	NaN	NaN	Techie Wiz bot	RT @SalesTechStar: Anova Elevates The Bar On C...	NaN	1468178182335520769	
1	NaN	NaN	Twitter Web App	RT @shivKR007: Main Stream Media is silent Aft...	NaN	1468178182012502016	
2	NaN	NaN	Twitter for Android	RT @RealDLHughley: Former Restaurant Workers A...	NaN	1468178180762656768	
3	NaN	1.467952e+18	Twitter for Android	RT @datingdecisions: One time early in my care...	1467952087841624064	1468178180548837377	
4	NaN	NaN	Twitter Web App	RT @shayararar: Reporters from all major news ...	NaN	1468178179550367746	
...	...	...	...	...	...	...	
795	AmandaDupont	NaN	Twitter for Android	@AmandaDupont calling @official_jubjub into or...	NaN	1468177949803397121	
796	NaN	NaN	Twitter for iPad	RT @paddydocherty: PROPOSAL: we abolish billio...	NaN	1468177949669171202	
797	NaN	NaN	Twitter for iPad	RT @realTuckFrumper: Why Trump hasn't been cha...	NaN	1468177949597782021	
798	NaN	NaN	Twitter Web App	RT @MForstater: Transgender critics will be pr...	NaN	1468177949203615749	
799	NaN	NaN	Twitter for Android	RT @SIPTU: Strike begins at Job Clubs in Offal...	NaN	1468177949027414020	

800 rows × 15 columns

In [60]:
```
df['text'][0]
```

Out[60]:
```
'RT @SalesTechStar: Anova Elevates The Bar On Consumer Engagement And Empowerment With The Release Of Anova Co
nnect™ https://t.co/7IBSPQhPGG…' (https://t.co/7IBSPQhPGG…')
```

In [61]:
```
df.columns[:15][0]
```

Out[61]:
```
'in_reply_to_screen_name'
```

The loc() function helps us to retrieve data values from a dataset at an ease. Using the loc() function, we can access the data values fitted in the particular row or column based on the index value passed to the function.

In [62]:
```
df.loc[:15]
```

Out[62]:

	in_reply_to_screen_name	quoted_status_id	source	text	quoted_status_id_str	id_str	in_reply_t
0	NaN	NaN	Techie Wiz bot	RT @SalesTechStar: Anova Elevates The Bar On C...	NaN	1468178182335520769	
1	NaN	NaN	Twitter Web App	RT @shivKR007: Main Stream Media is silent Aft...	NaN	1468178182012502016	
2	NaN	NaN	Twitter for Android	RT @RealDLHughley: Former Restaurant Workers A...	NaN	1468178180762656768	
3	NaN	1.467952e+18	Twitter for Android	RT @datingdecisions: One time early in my care...	1467952087841624064	1468178180548837377	
4	NaN	NaN	Twitter Web App	RT @shayararar: Reporters from all major news ...	NaN	1468178179550367746	
5	NaN	NaN	Twitter for Android	RT @NewsArenaIndia: Indore News\n\nTaslim Ali ...	NaN	1468178179298709504	
6	NaN	NaN	Twitter for Android	RT @chitaglorya__: giveaway 700$ | 10,000,000 ...	NaN	1468178179063881730	
7	NaN	NaN	Twitter for iPhone	Front page news #medinaspirit https://t.co/isN...	NaN	1468178178602860545	
8	NaN	NaN	Twitter for Android	RT @ndtv: #NDTVExclusive | "BJP Development? C...	NaN	1468178178480885761	
9	NaN	NaN	Twitter for iPhone	Trump's blood oxygen levels fell 'dangerously ...	NaN	1468178178271326210	

	in_reply_to_screen_name	quoted_status_id	source	text	quoted_status_id_str	id_str	in_reply_t
10	News24	NaN	Twitter for Android	@News24 @BISouthAfrica Yes but that is very ve...	NaN	1468178177625366531	14681
11	NaN	NaN	Twitter for Android	RT @alanpps: Men who killed Bradley Gledhill i...	NaN	1468178177289826307	
12	DPDgroup_news	NaN	Twitter for iPhone	@DPDgroup_news @Chronopost @lemondefr If at le...	NaN	1468178177189158912	14679
13	gayeonjunie	NaN	Twitter for iPhone	@gayeonjunie I have some news for you zo…it's you	NaN	1468178177134678019	14681
14	VajihaQureshi	NaN	Agorapulse app	@VajihaQureshi Hello Vajiha and thank you for ...	NaN	1468178177126289409	14681
15	NaN	NaN	Twitter for Android	RT @BharadwajSpeaks: The situation was worse i...	NaN	1468178176866078722	

In [ ]: