# *Import Library*

```
import tweepy
from textblob import TextBlob
from wordcloud import WordCloud,STOPWORDS
import pandas as pd
import numpy as np
import re
import matplotlib.pyplot as plt
plt.style.use('fivethirtyeight')

import csv
```

### Masukan Credential Twitter

```
consumer_key = 'Wn02Vkt660TAWh22cGPHgYVVN'
consumer_secret = 'K00OcKr1F8hUYNjd55QEvaAsGkGVeRp95J0v1Wq8QWQGt7g9my'
access_token = '2464327753-Q1LiTjp7kXD3xHJlTudQJFvbsEqVRXZj7YkMZaf'
access_token_secret = 'zDc9de9oxYo5JLs5QxnGbVXD9mnPPPg9Kw20NirDoSc5k'

auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
auth.set_access_token(access_token, access_token_secret)
api = tweepy.API(auth, wait_on_rate_limit=True)
```

### Crawling untuk mengambil data FirstMedia

```
new_search= "First+media"

tweets = tweepy.Cursor(api.search,
                   q= new_search,
                   lang="id",
                   since='2019-11-01').items(2000)

all_tweets=[tweet.text for tweet in tweets]
all_tweets[:5]
```

```
['@varreeen kbl LAN Modem ke PC/Laptop dan Capture data my result dr https://t.co/gb
 '@FirstMediaCares wifi first media wilayah vila dago tol error ya min?duh lg PJJ ni
 'RT @alyycomell: bismillah first media \U0001f97a\n(nanti kalau insecure datang ak
 'RT @alyycomell: bismillah first media \U0001f97a\n(nanti kalau insecure datang ak
 '@Vitrimaslow Hi First People. Terimakasih atas informasinya. Terimakasih telah ber
```

### Simpan ke file CSV

```
df = pd.DataFrame(data=all_tweets,
                  columns=["Tweets"])
```

```
df.to_csv(r'FirstMedia.csv')
df
```

| | Tweets |
|---|---|
| **0** | @varreeen kbl LAN Modem ke PC/Laptop dan Captu... |
| **1** | @FirstMediaCares wifi first media wilayah vila... |
| **2** | RT @alyycomell: bismillah first media  \n(nan... |
| **3** | RT @alyycomell: bismillah first media  \n(nan... |
| **4** | @Vitrimaslow Hi First People. Terimakasih atas... |
| **...** | ... |
| **1995** | @FirstMediaCares Seperti ini. Saya menggunakan... |
| **1996** | RT @aMaLsUy: Kenapa mainstream media tak sebut... |
| **1997** | RT @aMaLsUy: Kenapa mainstream media tak sebut... |
| **1998** | RT @aMaLsUy: Kenapa mainstream media tak sebut... |
| **1999** | @Julian18592475 Hi First People. Baik, terima ... |

2000 rows × 1 columns

```
df["Tweets"]
```

```
0       @varreeen kbl LAN Modem ke PC/Laptop dan Captu...
1       @FirstMediaCares wifi first media wilayah vila...
2       RT @alyycomell: bismillah first media □□\n(nan...
3       RT @alyycomell: bismillah first media □□\n(nan...
4       @Vitrimaslow Hi First People. Terimakasih atas...
                              ...
1995    @FirstMediaCares Seperti ini. Saya menggunakan...
1996    RT @aMaLsUy: Kenapa mainstream media tak sebut...
1997    RT @aMaLsUy: Kenapa mainstream media tak sebut...
1998    RT @aMaLsUy: Kenapa mainstream media tak sebut...
1999    @Julian18592475 Hi First People. Baik, terima ...
Name: Tweets, Length: 2000, dtype: object
```

## Lakukan Pra Proses ( Cleaning Data )

```
def praproses(teks):
    teks = re.sub(r'http\S+','',teks)
    #teks = hapus_tanda(teks)
    teks = re.sub(r'#([^\s]+)', r'\1', teks) #hapus #tagger
    teks = re.sub('@[A-Za-z0-9]+', '',teks)  #hapus @
    teks = re.sub(r':([^\s]+)', r'\1', teks) #hapus #tagger
    teks = re.sub('RT[\s]+', '',teks)#hapus RT
    teks = re.sub('https?:\/\/\S+', '',teks)#hapus hyperlink
    teks = re.sub(r'\w*\d\w*', '',teks).strip()#hapus angka dan angka yang berada dalam st
    teks = hapus_katadouble(teks)#hapus repetisi karakter
    teks = teks.lower() #ubah jadi lower case
    teks = hapus_emoji(teks)
```

```
        teks = hapus_emoji(teks)
        teks = re.sub(r"[-()\"#/@;_%:<>{}=~|.?,]", "", teks)
        teks = re.sub(r"aku","saya",teks)
        teks = re.sub(r"kamu","anda",teks)
        teks = re.sub(r"&amp",":",teks)
        teks = re.sub(r"yg","yang",teks)
        return teks


    def hapus_emoji(teks):
        regrex_pattern = re.compile(pattern = "["
            u"\U0001F600-\U0001F64F"  # emoticons
            u"\U0001F300-\U0001F5FF"  # symbols & pictographs
            u"\U0001F680-\U0001F6FF"  # transport & map symbols
            u"\U0001F1E0-\U0001F1FF"  # flags (iOS)
                               "]+", flags = re.UNICODE)
        return regrex_pattern.sub(r'',teks)


    #Untuk Menghapus kata Double
    def hapus_katadouble(s):
        pattern = re.compile(r"(.)\1{1,}", re.DOTALL)
        return pattern.sub(r"\1\1", s)


    #Removing the stopwords from text
    def remove_stopwords(text):
        final_text = []
        for i in text.split():
            if i.strip().lower() not in stop_w:
                final_text.append(i.strip())
        return " ".join(final_text)


    # Load stopword Bahasa Indonesia
    stopword_id = pd.read_csv('stopterm.csv', sep='\t', header=None)
    stopword_id.columns = ['word']
    stop_w = stopword_id['word'].to_list() #diubah ke list


    #Removing the noisy text
    def cleanText(text):
        text = remove_stopwords(text)
        text = praproses(text)
        return text



    #Apply function on review column
    df["Tweets"] = df["Tweets"].apply(cleanText)

    df
```

| | Tweets |
|---|---|
| **0** | kbl lan modem pclaptop capture data my result ... |
| **1** | wifi first media wilayah vila dago tol error m... |
| **2** | bismillah first media nanti insecure delet... |
| **3** | bismillah first media nanti insecure delet... |
| **4** | hi first people terimakasih informasinya terim... |
| **...** | ... |
| **1995** | ini wifi tetring giliran pake first media kaya... |
| **1996** | mainstream media syed saddiq kena crowd fundi... |
| **1997** | mainstream media syed saddiq kena crowd fundi... |
| **1998** | mainstream media syed saddiq kena crowd fundi... |
| **1999** | hi first people baik kasih berlangganan first ... |

### Tentukan Polarity dan Subjectivity

```
def getSubjectivity(text):
    return TextBlob(text).sentiment.subjectivity

def getPolarity(text):
    return TextBlob(text).sentiment.polarity


df['Polarity'] = df["Tweets"].apply(getPolarity)
df['Subjectivity'] = df["Tweets"].apply(getSubjectivity)

df
```

| | Tweets | Polarity | Subjectivity |
|---|---|---|---|
| 1 | wifi first media wilayah vila dago tol error m... | 0.225 | 0.466667 |

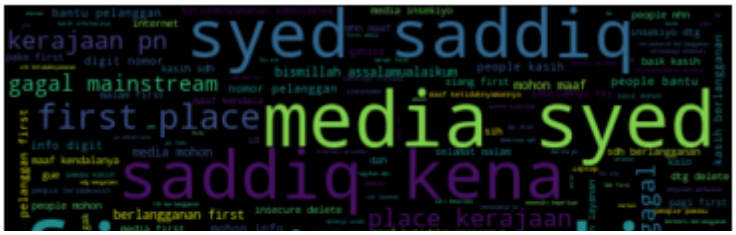
### Berikan Sentimen pada setiap tweet

```
#untuk menambahkan sentimen positif, negatif / netral dari polarity yg sudah dihitung
def getAnalysisSentiment(score):
    if score < 0:
        return 'Negative'
    elif score == 0:
        return 'Neutral'
    else:
        return 'Positive'


df['Analysis'] = df['Polarity'].apply(getAnalysisSentiment)

df
```

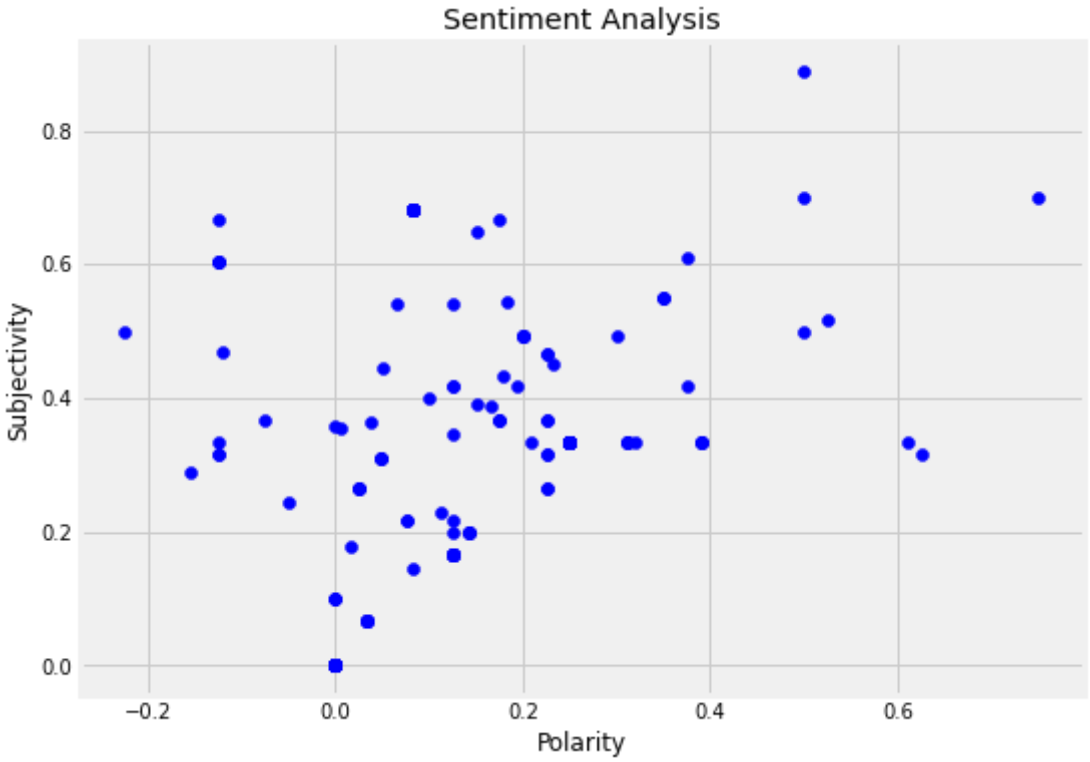
| | Tweets | Polarity | Subjectivity | Analysis |
|---|---|---|---|---|
| **0** | kbl lan modem pclaptop capture data my result ... | 0.250 | 0.333333 | Positive |
| **1** | wifi first media wilayah vila dago tol error m... | 0.225 | 0.466667 | Positive |
| **2** | bismillah first media nanti insecure delet... | -0.125 | 0.604167 | Negative |
| **3** | bismillah first media nanti insecure delet... | -0.125 | 0.604167 | Negative |
| **4** | hi first people terimakasih informasinya terim... | 0.250 | 0.333333 | Positive |
| **...** | ... | ... | ... | ... |
| **1995** | ini wifi tetring giliran pake first media kaya... | 0.250 | 0.333333 | Positive |
| **1996** | mainstream media syed saddiq kena crowd fundi... | 0.250 | 0.333333 | Positive |
| **1997** | mainstream media syed saddiq kena crowd fundi... | 0.250 | 0.333333 | Positive |
| **1998** | mainstream media syed saddiq kena crowd fundi... | 0.250 | 0.333333 | Positive |
| **1999** | hi first people baik kasih berlangganan first ... | 0.250 | 0.333333 | Positive |

2000 rows × 4 columns

```
allWords =' '.join([twts for twts in df["Tweets"]])
wc = WordCloud(width = 500 , height = 300 , random_state=10, max_font_size=110).generate(a
plt.imshow(wc , interpolation = 'bilinear')
plt.axis('off')
plt.show()
```




```
plt.figure(figsize=(8,6))
for i in range(0, df.shape[0]):
    plt.scatter(df["Polarity"][i], df["Subjectivity"][i], color="Blue")

plt.title('Sentiment Analysis')
plt.xlabel('Polarity')
plt.ylabel('Subjectivity')
plt.show()
```




**Kesimpulan**

Sesuai data yang ada ternyata analisis sentimen yang didapat yaitu lebih banyak tweet yang Positif. Saya mengambil "First Media" karena ini merupakan provider internet di Indonesia. Melihat saat ini sedang banyak yang memasang wifi dirumahnya. Crawling yang saya gunakan yaitu menggunakan bahasa Indonesia. Untuk mendapat hasil yang lebih baik bisa di lakukan cleaning dan pembobotan kata.

Aminurachma Aisyah (17.52.0001)

```
df['Analysis'].value_counts()
```

```
Positive    1914
Neutral       73
```

```
Negative      13
Name: Analysis, dtype: int64
```

```
plt.title('Sentiment Analysis')
plt.xlabel('Sentiment')
plt.ylabel('Counts')
df['Analysis'].value_counts().plot(kind ='bar')
plt.show()
```