

```
In [6]:
```

```
from textblob import TextBlob
```

```
In [5]:
```

```
pip install textblob
```

```
Collecting textblob
```

```
  Using cached https://files.pythonhosted.org/packages/44/a4/595b66c1342a830f4ff476307c4367541cce3e36
```

```
1b9ee96d22a5eeddd1d/textblob-0.17.1-py2.py3-none-any.whl
```

```
Requirement already satisfied: nltk>=3.1; python_version >= "3" in c:\users\afrid\anaconda3\lib\site-packages (from textblob) (3.4.4)
```

```
Requirement already satisfied: six in c:\users\afrid\anaconda3\lib\site-packages (from nltk>=3.1; pytho
```

```
n_version >= "3">textblob) (1.12.0)
```

```
Installing collected packages: textblob
```

```
Successfully installed textblob-0.17.1
```

```
Note: you may need to restart the kernel to use updated packages.
```

```
In [7]:
```

```
from textblob import TextBlob
```

```
In [12]:
```

```
feedback1 = "The product is really good."
feedback2 = "The product is really worth using."
feedback3 = "The product is worse."
feedback4 = "The product is shit."
blob1 = TextBlob(feedback1)
blob2 = TextBlob(feedback2)
blob3 = TextBlob(feedback3)
blob4 = TextBlob(feedback4)
print(blob1.sentiment)
print(blob2.sentiment)
print(blob3.sentiment)
print(blob4.sentiment)
```

```
Sentiment(polarity=0.7, subjectivity=0.6000000000000001)
```

```
Sentiment(polarity=0.3, subjectivity=0.1)
```

```
Sentiment(polarity=-0.4, subjectivity=0.6)
```

```
Sentiment(polarity=-0.2, subjectivity=0.8)
```

```
In [1]:
```

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

In [14]:

```
pip install tweepy
```

```
Collecting tweepy
  Downloading https://files.pythonhosted.org/packages/20/29/d07ca458ed84fa173f3bff5e67697066b8ebb0c31957d4fa8aaed14a891f/tweepy-4.10.0-py3-none-any.whl (94kB)
Collecting requests<3,>=2.27.0 (from tweepy)
  Downloading https://files.pythonhosted.org/packages/ca/91/6d9b8ccacd0412c08820f72cebaa4f0c0441b5cd699c90f618b6f8a1b42/requests-2.28.1-py3-none-any.whl (62kB)
Collecting oauthlib<4,>=3.2.0 (from tweepy)
  Downloading https://files.pythonhosted.org/packages/1d/46/5ee2475e1b46a26ca0fa10d3c1d479577fde6ee289f8c6aa6d7ec33e31fd/oauthlib-3.2.0-py3-none-any.whl (151kB)
Collecting requests-oauthlib<2,>=1.2.0 (from tweepy)
  Downloading https://files.pythonhosted.org/packages/6f/bb/5deac77a9af870143c684ab46a7934038a53eb4aa975bc0687ed6ca2c610/requests_oauthlib-1.3.1-py2.py3-none-any.whl
Requirement already satisfied: certifi>=2017.4.17 in c:\users\afrid\anaconda3\lib\site-packages (from requests<3,>=2.27.0->tweepy) (2019.6.16)
Requirement already satisfied: idna<4,>=2.5 in c:\users\afrid\anaconda3\lib\site-packages (from requests<3,>=2.27.0->tweepy) (2.8)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in c:\users\afrid\anaconda3\lib\site-packages (from requests<3,>=2.27.0->tweepy) (1.26.9)
Collecting charset-normalizer<3,>=2 (from requests<3,>=2.27.0->tweepy)
  Downloading https://files.pythonhosted.org/packages/94/69/64b11e8c2fb21f08634468caef885112e682b0ebe2908e74d3616eb1c113/charset_normalizer-2.1.0-py3-none-any.whl
Installing collected packages: charset-normalizer, requests, oauthlib, requests-oauthlib, tweepy
  Found existing installation: requests 2.22.0
    Uninstalling requests-2.22.0:
      Successfully uninstalled requests-2.22.0
Successfully installed charset-normalizer-2.1.0 oauthlib-3.2.0 requests-2.28.1 requests-oauthlib-1.3.1 tweepy-4.10.0
Note: you may need to restart the kernel to use updated packages.
```

ERROR: conda 4.13.0 requires ruamel\_yaml>=0.11.14, which is not installed.

In [16]:

```
import tweepy
```

In [17]:

```
pip install pandas
```

```
Requirement already satisfied: pandas in c:\users\afrid\anaconda3\lib\site-packages (0.24.2)
Requirement already satisfied: pytz>=2011k in c:\users\afrid\anaconda3\lib\site-packages (from pandas) (2019.1)
Requirement already satisfied: python-dateutil>=2.5.0 in c:\users\afrid\anaconda3\lib\site-packages (from pandas) (2.8.0)
Requirement already satisfied: numpy>=1.12.0 in c:\users\afrid\anaconda3\lib\site-packages (from pandas) (1.16.4)
Requirement already satisfied: six>=1.5 in c:\users\afrid\anaconda3\lib\site-packages (from python-dateutil>=2.5.0->pandas) (1.12.0)
Note: you may need to restart the kernel to use updated packages.
```

In [2]:

```
pip install matplotlib
```

```
Requirement already satisfied: matplotlib in c:\users\afrid\anaconda3\lib\site-packages (3.1.0)
Requirement already satisfied: cycler>=0.10 in c:\users\afrid\anaconda3\lib\site-packages (from matplotlib) (0.10.0)
Requirement already satisfied: kiwisolver>=1.0.1 in c:\users\afrid\anaconda3\lib\site-packages (from matplotlib) (1.1.0)
Requirement already satisfied: pyparsing!=2.0.4,!=2.1.2,!=2.1.6,>=2.0.1 in c:\users\afrid\anaconda3\lib\site-packages (from matplotlib) (2.4.0)
Requirement already satisfied: python-dateutil>=2.1 in c:\users\afrid\anaconda3\lib\site-packages (from matplotlib) (2.8.0)
Requirement already satisfied: numpy>=1.11 in c:\users\afrid\anaconda3\lib\site-packages (from matplotlib) (1.16.4)
Requirement already satisfied: six in c:\users\afrid\anaconda3\lib\site-packages (from cycler>=0.10->matplotlib) (1.12.0)
Requirement already satisfied: setuptools in c:\users\afrid\anaconda3\lib\site-packages (from kiwisolver>=1.0.1->matplotlib) (41.0.1)
Note: you may need to restart the kernel to use updated packages.
```

In [1]:

```
pip install wordcloud
```

```
Collecting wordcloud
  Downloading https://files.pythonhosted.org/packages/e5/fd/6f5639019f32d45b28fc763b8c58cac72b2dbd070f4581195dfe219ef3a9/wordcloud-1.8.2.2-cp37-cp37m-win_amd64.whl (152kB)
Requirement already satisfied: matplotlib in c:\users\afrid\anaconda3\lib\site-packages (from wordcloud) (3.1.0)
Requirement already satisfied: numpy>=1.6.1 in c:\users\afrid\anaconda3\lib\site-packages (from wordcloud) (1.16.4)
Requirement already satisfied: pillow in c:\users\afrid\anaconda3\lib\site-packages (from wordcloud) (6.1.0)
Requirement already satisfied: cycler>=0.10 in c:\users\afrid\anaconda3\lib\site-packages (from matplotlib->wordcloud) (0.10.0)
Requirement already satisfied: kiwisolver>=1.0.1 in c:\users\afrid\anaconda3\lib\site-packages (from matplotlib->wordcloud) (1.1.0)
Requirement already satisfied: pyparsing!=2.0.4,!=2.1.2,!=2.1.6,>=2.0.1 in c:\users\afrid\anaconda3\lib\site-packages (from matplotlib->wordcloud) (2.4.0)
Requirement already satisfied: python-dateutil>=2.1 in c:\users\afrid\anaconda3\lib\site-packages (from matplotlib->wordcloud) (2.8.0)
Requirement already satisfied: six in c:\users\afrid\anaconda3\lib\site-packages (from cycler>=0.10->matplotlib->wordcloud) (1.12.0)
Requirement already satisfied: setuptools in c:\users\afrid\anaconda3\lib\site-packages (from kiwisolver>=1.0.1->matplotlib->wordcloud) (41.0.1)
Installing collected packages: wordcloud
Successfully installed wordcloud-1.8.2.2
Note: you may need to restart the kernel to use updated packages.
```

In [2]:

```
consumer_key = 'YHrCzBULzkvwO22xH1Q8Rz2Vf'
consumer_secret = 'pNRffFiTLSQmKLOX8ynal1vGPnbkPWP29ONArxJb2db5ZUb1NIT'
access_token = '3271586599-mCf4MG99yEa1RDYjccLgp9m8sEOgaiJP5r3Rcp3'
access_token_secret = '9mPhPZfDwej7uaiWaU6KtOKGrmHhXy8ad9qa9iKF4otX8'
```

In [12]:

```
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)
```

In [43]:

```
posts = api.user_timeline(screen_name = "BillGates", count = 50, tweet_mode = "extended")
for i,tweet in enumerate(posts[0:5]):
    print(str(i) + " " + tweet.full_text+'\n')
    blob = TextBlob(tweet.full_text)
    print(blob.sentiment)
    print('')
```

0) While our fight against climate change is far from over, I'm more optimistic than ever that by working together, we can make a net-zero future of abundant, affordable, and clean energy a reality to people everywhere.

Sentiment(polarity=0.3133333333333335, subjectivity=0.655)

1) This \$369 billion investment will spark innovation, drive job creation, and reduce energy prices and emissions. It sets a clear example of what serious climate action looks like.

Sentiment(polarity=-0.04444444444444425, subjectivity=0.3833333333333333)

2) The Inflation Reduction Act's passage through Congress is nothing short of extraordinary. The United States is taking a historic step towards the clean energy economy we need to meet our climate goals.

Sentiment(polarity=0.175, subjectivity=0.5)

3) In the past decade, @OERProject has reached more than 1 million students and 20,000 teachers around the world. Here's a look at the team's new three-week course on climate: <https://t.co/2BizQyNLHA> <https://t.co/htkH7WB3cZ>

Sentiment(polarity=0.128787878787878, subjectivity=0.401515151515155)

4) Prime Minister Shinzo Abe understood that improving health is not only the right thing to do, it also makes the world safer and more prosperous. <https://t.co/TH5hTlXtyP>

Sentiment(polarity=0.2619047619047619, subjectivity=0.6785714285714285)

In [57]:

```
df = pd.DataFrame({'tweets': [tweet.full_text for tweet in posts]})
df.head()
```

Out[57]:

	tweets
0	While our fight against climate change is far ...
1	This \$369 billion investment will spark innova...
2	The Inflation Reduction Act's passage through ...
3	In the past decade, @OERProject has reached mo...
4	Prime Minister Shinzo Abe understood that impr...

In [58]:

```
def cleanTxt(text):
    text = re.sub(r'@[A-Za-z0-9]+', '', text)
    text = re.sub(r'#', '', text)
    text = re.sub(r'RT[\s]+', '', text)
    text = re.sub(r'https?:\/\/\S+', '', text)

    return text
df['tweets'] = df['tweets'].apply(cleanTxt)
df
```

Out[58]:

	tweets
0	While our fight against climate change is far ...
1	This \$369 billion investment will spark innova...
2	The Inflation Reduction Act's passage through ...
3	In the past decade, has reached more than 1 m...
4	Prime Minister Shinzo Abe understood that impr...
5	Wow, I'm blown away by your support.
6	"Outbreaks are inevitable, but pandemics are o...
7	If you want to help teachers and students in t...
8	Teachers deserve our thanks – and support. I'm...
9	News that polio has been detected in New York ...
10	Solving climate change is the hardest challeng...
11	I've long admired his courage to ask tough que...
12	I never thought of fighting poverty and diseas...
13	We cannot look away from the impact climate ch...
14	Jerad taught me how to make my own deerskin me...
15	: It's more important than ever that we unders...
16	Jerad Koepp is the first Native educator to re...
17	: The Inflation Reduction Act of 2022 is a his...
18	There's never been a more important time to su...
19	I'm inspired by Jerad's commitment to helping ...
20	Win or lose, I can't think of a better way to ...
21	Spending time with my best friend Warren never...
22	During AIDS2022, we're celebrating partnershi...
23	We're announcing the second phase of 's diagno...
24	Now, we need Congress to act quickly. I'm opti...
25	Really excited to see Senators Schumer and Man...
26	..._pb any tips for my form?
27	Fifty years ago, I started playing this little...
28	Hey , sharks are cool, but mosquitoes are dead...
29	From Malawi to the United States, new cases of...
30	This is heartbreaking. The world had made so m...
31	Congratulations for yet another milestone of ...
32	Mr. Mandela exemplified how we can fight for p...
33	This is one of my favorite photos ever. My dad...
34	Nelson Mandela's legacy lives on as a reminder...
35	Who better to recruit the next generation of c...
36	If we had stopped the COVID pandemic in less t...
37	I have an obligation to return my resources to...
38	As I look to the future, I plan to give virtua...
39	Although the foundation bears our names, basic...
40	I am very proud of the foundation's role in he...
41	With the support and guidance of our board, we...
42	Melinda and I started the in 2000 because we ...
43	But I'm still optimistic. These setbacks are h...

**tweets**

---

- 44** The pandemic is one of the biggest setbacks in...
- 45** Several huge global setbacks over the past few...
- 46** When I was 13, computer science changed the co...
- 47** Fusion will need to be an important part of ou...
- 48** If you're a big tennis fan like I am, 's profi...
- 49** Prime Minister Abe was a friend and partner of...

In [67]:

```
def getsubjectivity(text):
    return TextBlob(text).sentiment.subjectivity
def getpolarity(text):
    return TextBlob(text).sentiment.polarity
df['Subjectivity'] = df['tweets'].apply(getsubjectivity)
df['Polarity'] = df['tweets'].apply(getpolarity)
df
```

Out[67]:

		tweets	Subjectivity	Polarity
0	While our fight against climate change is far ...	0.655000	0.313333	
1	This \$369 billion investment will spark innova...	0.383333	-0.044444	
2	The Inflation Reduction Act's passage through ...	0.500000	0.175000	
3	In the past decade, has reached more than 1 m...	0.401515	0.128788	
4	Prime Minister Shinzo Abe understood that impr...	0.678571	0.261905	
5	Wow, I'm blown away by your support.	1.000000	0.100000	
6	"Outbreaks are inevitable, but pandemics are o...	0.337500	-0.062500	
7	If you want to help teachers and students in t...	0.513889	0.236111	
8	Teachers deserve our thanks – and support. I'm...	0.100000	0.100000	
9	News that polio has been detected in New York ...	0.351515	0.278788	
10	Solving climate change is the hardest challeng...	0.305000	0.380000	
11	I've long admired his courage to ask tough que...	0.481313	0.099579	
12	I never thought of fighting poverty and diseas...	0.658333	0.525000	
13	We cannot look away from the impact climate ch...	0.500000	0.000000	
14	Jerad taught me how to make my own deerskin me...	0.566667	0.066667	
15	: It's more important than ever that we unders...	0.750000	0.450000	
16	Jerad Koepp is the first Native educator to re...	0.333333	0.250000	
17	: The Inflation Reduction Act of 2022 is a his...	0.000000	0.000000	
18	There's never been a more important time to su...	0.825000	0.450000	
19	I'm inspired by Jerad's commitment to helping ...	0.500000	0.500000	
20	Win or lose, I can't think of a better way to ...	0.450000	0.650000	
21	Spending time with my best friend Warren never...	0.250000	0.550000	
22	During AIDS2022, we're celebrating partnershi...	0.166667	0.166667	
23	We're announcing the second phase of 's diagno...	0.227273	0.068182	
24	Now, we need Congress to act quickly. I'm opti...	0.331250	0.125000	
25	Really excited to see Senators Schumer and Man...	0.375000	0.187500	
26	_pb any tips for my form?	0.000000	0.000000	
27	Fifty years ago, I started playing this little...	1.000000	0.250000	
28	Hey , sharks are cool, but mosquitoes are dead...	0.516667	0.216667	
29	From Malawi to the United States, new cases of...	0.527273	0.418182	
30	This is heartbreaking. The world had made so m...	0.100000	0.100000	
31	Congratulations for yet another milestone of ...	0.000000	0.000000	
32	Mr. Mandela exemplified how we can fight for p...	1.000000	0.050000	
33	This is one of my favorite photos ever. My dad...	0.666667	0.378788	
34	Nelson Mandela's legacy lives on as a reminder...	0.466667	0.000000	
35	Who better to recruit the next generation of c...	0.400000	0.288889	
36	If we had stopped the COVID pandemic in less t...	0.066667	-0.166667	
37	I have an obligation to return my resources to...	0.875000	0.900000	
38	As I look to the future, I plan to give virtua...	0.206944	-0.077778	
39	Although the foundation bears our names, basic...	0.553571	0.273810	
40	I am very proud of the foundation's role in he...	0.450000	0.416667	
41	With the support and guidance of our board, we...	0.700000	0.050000	
42	Melinda and I started the in 2000 because we ...	0.475000	0.387273	
43	But I'm still optimistic. These setbacks are h...	0.275000	0.075000	

		tweets	Subjectivity	Polarity
44	The pandemic is one of the biggest setbacks in...	0.656250	0.125000	
45	Several huge global setbacks over the past few...	0.293750	0.006250	
46	When I was 13, computer science changed the co...	0.419444	0.144444	
47	Fusion will need to be an important part of ou...	0.641667	0.233333	
48	If you're a big tennis fan like I am, 's profi...	0.453333	0.276667	
49	Prime Minister Abe was a friend and partner of...	0.266667	-0.233333	

In [62]:

```
pol_sub = pd.DataFrame({'Polarity':[TextBlob(tweet.full_text).sentiment.polarity for tweet in posts], 'Subjectivity':[TextBlob(tweet.full_text).sentiment.subjectivity for tweet in posts]})  
pol_sub
```

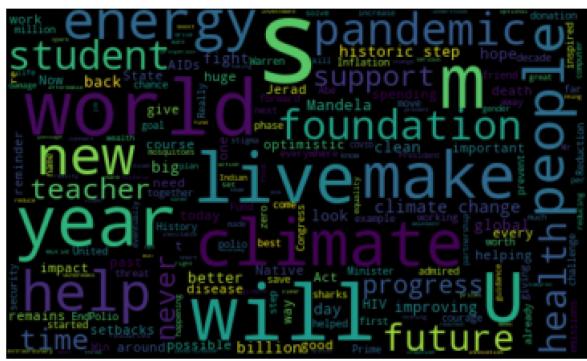
Out[62]:

	Polarity	Subjectivity
0	0.313333	0.655000
1	-0.044444	0.383333
2	0.175000	0.500000
3	0.128788	0.401515
4	0.261905	0.678571
5	0.100000	1.000000
6	-0.062500	0.337500
7	0.236111	0.513889
8	0.100000	0.100000
9	0.278788	0.351515
10	0.380000	0.305000
11	0.099579	0.481313
12	0.525000	0.658333
13	0.000000	0.500000
14	0.066667	0.566667
15	0.450000	0.750000
16	0.250000	0.333333
17	0.000000	0.000000
18	0.450000	0.825000
19	0.500000	0.500000
20	0.650000	0.450000
21	0.550000	0.250000
22	0.166667	0.166667
23	0.068182	0.227273
24	0.125000	0.331250
25	0.187500	0.375000
26	0.000000	0.000000
27	0.250000	1.000000
28	0.216667	0.516667
29	0.418182	0.527273
30	0.100000	0.100000
31	0.000000	0.000000
32	0.050000	1.000000
33	0.378788	0.666667
34	0.000000	0.466667
35	0.288889	0.400000
36	-0.166667	0.066667
37	0.900000	0.875000
38	-0.077778	0.206944
39	0.273810	0.553571
40	0.416667	0.450000
41	0.050000	0.700000
42	0.387273	0.475000
43	0.075000	0.275000

	Polarity	Subjectivity
44	0.125000	0.656250
45	0.006250	0.293750
46	0.144444	0.419444
47	0.233333	0.641667
48	0.276667	0.453333
49	-0.233333	0.266667

In [81]:

```
allwords = ' '.join([twts for twts in df['tweets']]) #joining all the tweets together
wordcloud = WordCloud(width = 500, height = 300, random_state = 42, max_font_size = 100).generate(allwords)
plt.imshow(wordcloud, interpolation = "bilinear")
plt.axis('off')
plt.show()
```



In [82]:

```
def getanalysis(score):
    if score == 0:
        return "Neutral"
    elif score > 0:
        return "Positive"
    else:
        return "Negative"
df['Analysis'] = df['Polarity'].apply(getanalysis)
df
```

Out[82]:

		tweets	Subjectivity	Polarity	Analysis
0		While our fight against climate change is far ...	0.655000	0.313333	Positive
1		This \$369 billion investment will spark innova...	0.383333	-0.044444	Negative
2		The Inflation Reduction Act's passage through ...	0.500000	0.175000	Positive
3		In the past decade, has reached more than 1 m...	0.401515	0.128788	Positive
4		Prime Minister Shinzo Abe understood that impr...	0.678571	0.261905	Positive
5		Wow, I'm blown away by your support.	1.000000	0.100000	Positive
6		"Outbreaks are inevitable, but pandemics are o...	0.337500	-0.062500	Negative
7		If you want to help teachers and students in t...	0.513889	0.236111	Positive
8		Teachers deserve our thanks – and support. I'm...	0.100000	0.100000	Positive
9		News that polio has been detected in New York ...	0.351515	0.278788	Positive
10		Solving climate change is the hardest challeng...	0.305000	0.380000	Positive
11		I've long admired his courage to ask tough que...	0.481313	0.099579	Positive
12		I never thought of fighting poverty and diseas...	0.658333	0.525000	Positive
13		We cannot look away from the impact climate ch...	0.500000	0.000000	Neutral
14		Jerad taught me how to make my own deerskin me...	0.566667	0.066667	Positive
15		: It's more important than ever that we unders...	0.750000	0.450000	Positive
16		Jerad Koepp is the first Native educator to re...	0.333333	0.250000	Positive
17		: The Inflation Reduction Act of 2022 is a his...	0.000000	0.000000	Neutral
18		There's never been a more important time to su...	0.825000	0.450000	Positive
19		I'm inspired by Jerad's commitment to helping ...	0.500000	0.500000	Positive
20		Win or lose, I can't think of a better way to ...	0.450000	0.650000	Positive
21		Spending time with my best friend Warren never...	0.250000	0.550000	Positive
22		During AIDS2022, we're celebrating partnershi...	0.166667	0.166667	Positive
23		We're announcing the second phase of 's diagno...	0.227273	0.068182	Positive
24		Now, we need Congress to act quickly. I'm opti...	0.331250	0.125000	Positive
25		Really excited to see Senators Schumer and Man...	0.375000	0.187500	Positive
26		_pb any tips for my form?	0.000000	0.000000	Neutral
27		Fifty years ago, I started playing this little...	1.000000	0.250000	Positive
28		Hey , sharks are cool, but mosquitoes are dead...	0.516667	0.216667	Positive
29		From Malawi to the United States, new cases of...	0.527273	0.418182	Positive
30		This is heartbreaking. The world had made so m...	0.100000	0.100000	Positive
31		Congratulations for yet another milestone of ...	0.000000	0.000000	Neutral
32		Mr. Mandela exemplified how we can fight for p...	1.000000	0.050000	Positive
33		This is one of my favorite photos ever. My dad...	0.666667	0.378788	Positive
34		Nelson Mandela's legacy lives on as a reminder...	0.466667	0.000000	Neutral
35		Who better to recruit the next generation of c...	0.400000	0.288889	Positive
36		If we had stopped the COVID pandemic in less t...	0.066667	-0.166667	Negative
37		I have an obligation to return my resources to...	0.875000	0.900000	Positive
38		As I look to the future, I plan to give virtua...	0.206944	-0.077778	Negative
39		Although the foundation bears our names, basic...	0.553571	0.273810	Positive
40		I am very proud of the foundation's role in he...	0.450000	0.416667	Positive
41		With the support and guidance of our board, we...	0.700000	0.050000	Positive
42		Melinda and I started the in 2000 because we ...	0.475000	0.387273	Positive
43		But I'm still optimistic. These setbacks are h...	0.275000	0.075000	Positive

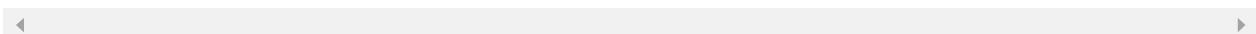
		tweets	Subjectivity	Polarity	Analysis
44	The pandemic is one of the biggest setbacks in...	0.656250	0.125000	Positive	
45	Several huge global setbacks over the past few...	0.293750	0.006250	Positive	
46	When I was 13, computer science changed the co...	0.419444	0.144444	Positive	
47	Fusion will need to be an important part of ou...	0.641667	0.233333	Positive	
48	If you're a big tennis fan like I am, 's profi...	0.453333	0.276667	Positive	
49	Prime Minister Abe was a friend and partner of...	0.266667	-0.233333	Negative	

In [108]:

```
sortedddf = df.sort_values(by=["Polarity"])
j = 1
for i in range(len(sortedddf['tweets'])):
    if sortedddf['Analysis'][i] == "Positive":
        print(str(j) + " " + sortedddf['tweets'][i])
        j+=1
    print('')
```

- 1) While our fight against climate change is far from over, I'm more optimistic than ever that by working together, we can make a net-zero future of abundant, affordable, and clean energy a reality to people everywhere.
- 2) The Inflation Reduction Act's passage through Congress is nothing short of extraordinary. The United States is taking a historic step towards the clean energy economy we need to meet our climate goals.
- 3) In the past decade, has reached more than 1 million students and 20,000 teachers around the world. Here's a look at the team's new three-week course on climate:
- 4) Prime Minister Shinzo Abe understood that improving health is not only the right thing to do, it also makes the world safer and more prosperous.
- 5) Wow, I'm blown away by your support.
- 6) If you want to help teachers and students in the U.S., it's hard to do better than giving through — and you won't find a better time to do it than now. I'm giving a 50% boost for every donation to DoNorsChoose today.
- 7) Teachers deserve our thanks — and support. I'm partnering with and boosting all donations today by 50% to help students get back to learning!
- 8) News that polio has been detected in New York wastewater samples is an urgent reminder: until we EndPolio for good, it remains a threat to us all. The global eradication strategy must be fully supported to protect people everywhere.
- 9) Solving climate change is the hardest challenge humanity has ever faced but this would be a historic step forward. It represents our best chance to build an energy future in America that is cleaner, cheaper, and more secure. Let's get it done.
- 10) I've long admired his courage to ask tough questions and answer them in a way that is direct and entertaining. John's new project, working to support maternal health, is worth checking out.
- 11) I never thought of fighting poverty and disease as decreasing "world suck" and increasing awesome, but during our trip to Africa, convinced me that it's as good a description as any other.
- 12) Jerad taught me how to make my own deerskin medicine bag while he explained the deeper meaning behind a Native tradition that goes back thousands of years.
- 13) : It's more important than ever that we understand how climate change will worsen existing health disparities. That's why I...
- 14) Jerad Koepp is the first Native educator to receive the Washington State Teacher of the Year award. I hope you're as inspired by his work as I am.
- 15) There's never been a more important time to support teachers. 's goal is to empower them with free innovative curriculum and teaching tools:
- 16) I'm inspired by Jerad's commitment to helping Native students embrace their culture and make the most of their talents. backtoschool
- 17) Win or lose, I can't think of a better way to spend a summer day than as a Pickler.
- 18) Spending time with my best friend Warren never gets old. I'd flip Blizzards with you any day.
- 19) During AIDS2022, we're celebrating partnerships that have helped cut AIDS-related deaths by 65%. But the fight isn't over. Investing in the Global Fund can help save 20 million more lives by 2026 and help prevent the next pandemic.
- 20) We're announcing the second phase of 's diagnostics accelerator. I'm hopeful that this new phase will make advances that help change the course of Alzheimer's.
- 21) Now, we need Congress to act quickly. I'm optimistic the U.S. can deliver on a clean energy future, but there's no time to waste.
- 22) Really excited to see Senators Schumer and Manchin come together in what could be a historic step forward for the climate.
- 23) Fifty years ago, I started playing this little-known sport with a funny name. Now it's all the rage.

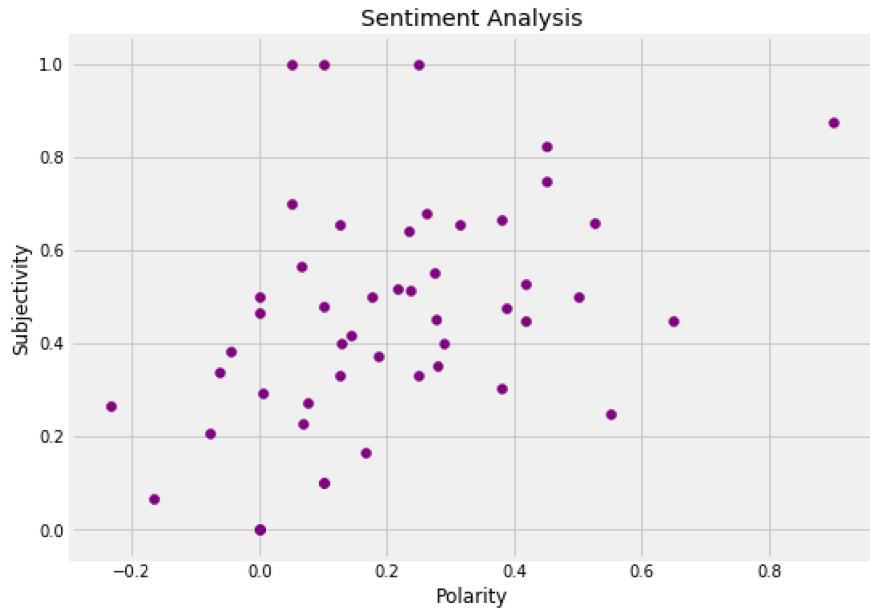
- 24) Hey , sharks are cool, but mosquitoes are deadly. Did you know mosquitoes kill more people in one day than sharks kill in 100 years?
- 25) From Malawi to the United States, new cases of polio are a reminder that until we EndPolio for good, it remains a threat to all of us.
- 26) This is heartbreaking. The world had made so much progress before COVID. There's a lot of work ahead to get back to, and eventually exceed, pre-pandemic vaccination levels.
- 27) Mr. Mandela exemplified how we can fight for progress, diminish stigmas, and spread hope. He played a crucial role in the progress we have made so far against HIV/AIDs. I will never forget the example that he set.
- 28) This is one of my favorite photos ever. My dad, Mr. Mandela, and President Jimmy Carter hold infants born with HIV to dismiss the fear and stigma around touching people who live with the disease.
- 29) Who better to recruit the next generation of clean tech innovators than Iron Man?
- 30) I have an obligation to return my resources to society in ways that have the greatest impact for reducing suffering and improving lives. And I hope others in positions of great wealth and privilege will step up in this moment too.
- 31) Although the foundation bears our names, basically half our resources have come from Warren Buffett. His incredible generosity is a huge reason why the foundation has been able to be so ambitious. I can never adequately express how much I appreciate his friendship and guidance.
- 32) I am very proud of the foundation's role in helping solve big problems like preventing pandemics, reducing childhood deaths, eradicating diseases, improving food security and climate adaptation, achieving gender equality, and improving educational outcomes.
- 33) With the support and guidance of our board, we plan to increase our spending from nearly \$6 billion per year today to \$9 billion per year by 2026. To help make this spending increase possible, I am transferring \$20 billion to the foundation's endowment this month.
- 34) Melinda and I started the in 2000 because we believed that every person should have the chance to live a healthy and productive life. That vision remains the same, but the great crises of our time require all of us to do more.
- 35) But I'm still optimistic. These setbacks are happening in the context of two decades' worth of historic progress and I believe it is possible to mitigate the damage and get back to the progress the world was making.
- 36) The pandemic is one of the biggest setbacks in history. The war on Ukraine is a gigantic tragedy for the entire world. The damage from climate change is already worse than most models predicted. The U.S. has taken a huge step backwards for gender equality and women's health.
- 37) Several huge global setbacks over the past few years have left many people discouraged and wondering whether the world is destined to get worse.
- 38) When I was 13, computer science changed the course of my life. I was really lucky to have access to a computer that early on. I hope this initiative will give every student the same opportunity.
- 39) Fusion will need to be an important part of our zero-emissions future. That's why the work that zap does is so exciting.
- 40) If you're a big tennis fan like I am, 's profile on Althea Gibson is a grand slam. She was the first Black player to win Wimbledon.



In [119]:

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

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



In [128]:

```
#percentage of positive and negative tweets
ptweets = df[df.Analysis == "Positive"]
ptweets = ptweets['tweets']
round(ptweets.shape[0]/df.shape[0],2)
```

Out[128]:

0.8

In [130]:

```
ntweets = df[df.Analysis == 'Negative']
ntweets = ntweets['tweets']
round(ntweets.shape[0]/df.shape[0],2)
```

Out[130]:

0.1

In [131]:

```
neutweets = df[df.Analysis == 'Neutral']
neutweets = neutweets['tweets']
round(neutweets.shape[0]/df.shape[0],2)
```

Out[131]:

0.1

In [134]:

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

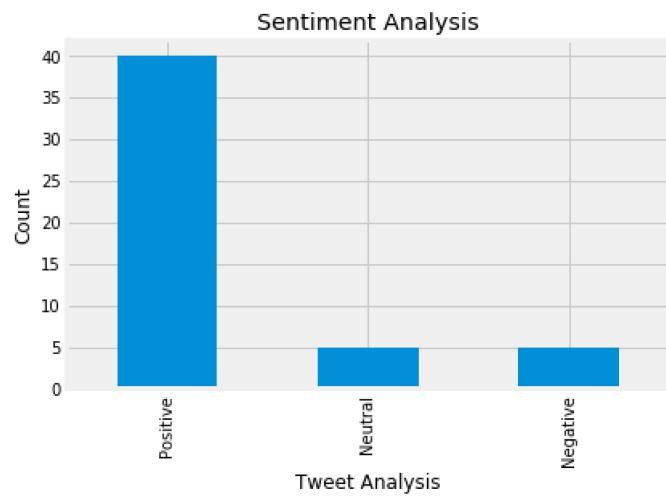
Out[134]:

```
Positive    40
Neutral     5
Negative    5
Name: Analysis, dtype: int64
```

In [139]:

```
#plot and visualize counts
```

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



In [109]:

```
pos = [i for i,twt in zip(df['tweets'],df['Analysis']) if twt == "Positive"]
pos
sorteddf
```

Out[109]:

		tweets	Subjectivity	Polarity	Analysis
49	Prime Minister Abe was a friend and partner of...	0.266667	-0.233333	Negative	
36	If we had stopped the COVID pandemic in less t...	0.066667	-0.166667	Negative	
38	As I look to the future, I plan to give virtua...	0.206944	-0.077778	Negative	
6	"Outbreaks are inevitable, but pandemics are o...	0.337500	-0.062500	Negative	
1	This \$369 billion investment will spark innova...	0.383333	-0.044444	Negative	
34	Nelson Mandela's legacy lives on as a reminder...	0.466667	0.000000	Neutral	
17	: The Inflation Reduction Act of 2022 is a his...	0.000000	0.000000	Neutral	
31	Congratulations for yet another milestone of ...	0.000000	0.000000	Neutral	
13	We cannot look away from the impact climate ch...	0.500000	0.000000	Neutral	
26	..._pb any tips for my form?	0.000000	0.000000	Neutral	
45	Several huge global setbacks over the past few...	0.293750	0.006250	Positive	
32	Mr. Mandela exemplified how we can fight for p...	1.000000	0.050000	Positive	
41	With the support and guidance of our board, we...	0.700000	0.050000	Positive	
14	Jerad taught me how to make my own deerskin me...	0.566667	0.066667	Positive	
23	We're announcing the second phase of 's diagno...	0.227273	0.068182	Positive	
43	But I'm still optimistic. These setbacks are h...	0.275000	0.075000	Positive	
11	I've long admired his courage to ask tough que...	0.481313	0.099579	Positive	
5	Wow, I'm blown away by your support.	1.000000	0.100000	Positive	
30	This is heartbreaking. The world had made so m...	0.100000	0.100000	Positive	
8	Teachers deserve our thanks – and support. I'm...	0.100000	0.100000	Positive	
24	Now, we need Congress to act quickly. I'm opti...	0.331250	0.125000	Positive	
44	The pandemic is one of the biggest setbacks in...	0.656250	0.125000	Positive	
3	In the past decade, has reached more than 1 m...	0.401515	0.128788	Positive	
46	When I was 13, computer science changed the co...	0.419444	0.144444	Positive	
22	During AIDS2022, we're celebrating partnershi...	0.166667	0.166667	Positive	
2	The Inflation Reduction Act's passage through ...	0.500000	0.175000	Positive	
25	Really excited to see Senators Schumer and Man...	0.375000	0.187500	Positive	
28	Hey , sharks are cool, but mosquitoes are dead...	0.516667	0.216667	Positive	
47	Fusion will need to be an important part of ou...	0.641667	0.233333	Positive	
7	If you want to help teachers and students in t...	0.513889	0.236111	Positive	
27	Fifty years ago, I started playing this little...	1.000000	0.250000	Positive	
16	Jerad Koepp is the first Native educator to re...	0.333333	0.250000	Positive	
4	Prime Minister Shinzo Abe understood that impr...	0.678571	0.261905	Positive	
39	Although the foundation bears our names, basic...	0.553571	0.273810	Positive	
48	If you're a big tennis fan like I am, 's profi...	0.453333	0.276667	Positive	
9	News that polio has been detected in New York ...	0.351515	0.278788	Positive	
35	Who better to recruit the next generation of c...	0.400000	0.288889	Positive	
0	While our fight against climate change is far ...	0.655000	0.313333	Positive	
33	This is one of my favorite photos ever. My dad...	0.666667	0.378788	Positive	
10	Solving climate change is the hardest challeng...	0.305000	0.380000	Positive	
42	Melinda and I started the in 2000 because we ...	0.475000	0.387273	Positive	
40	I am very proud of the foundation's role in he...	0.450000	0.416667	Positive	
29	From Malawi to the United States, new cases of...	0.527273	0.418182	Positive	
15	: It's more important than ever that we unders...	0.750000	0.450000	Positive	

		tweets	Subjectivity	Polarity	Analysis
18	There's never been a more important time to su...	0.825000	0.450000	Positive	
19	I'm inspired by Jerad's commitment to helping ...	0.500000	0.500000	Positive	
12	I never thought of fighting poverty and diseas...	0.658333	0.525000	Positive	
21	Spending time with my best friend Warren never...	0.250000	0.550000	Positive	
20	Win or lose, I can't think of a better way to ...	0.450000	0.650000	Positive	
37	I have an obligation to return my resources to...	0.875000	0.900000	Positive	

In [ ]: