In [176]:
```
#adding libraries
import tweepy
from textblob import TextBlob as tb
from wordcloud import WordCloud as wc
import pandas as pd
import numpy as np
import re
import matplotlib.pyplot as plt
plt.style.use('fivethirtyeight')
```

In [6]:
```
#adding key file
from google.colab import files
uploaded = files.upload()
```

Choose Files No file chosen

Upload widget is only available when the cell has been executed in the current browser session. Please rerun this cell to enable.

```
Saving login.csv to login.csv
```

In [7]:
```
log = pd.read_csv('login.csv')
```

In [8]:
```
#keys
consumer_key = log['key'][0]
consumer_secret = log['key'][1]
Access_token = log['key'][2]
token_secret = log['key'][3]
```

In [9]:
```
#authentication
authenticate = tweepy.OAuthHandler(consumer_key, consumer_secret)
authenticate.set_access_token(Access_token, token_secret)
api = tweepy.API(authenticate, wait_on_rate_limit = True)
```

In [201]:
```
#getting tweets from twitter
posts = api.user_timeline(screen_name = 'Amazon', count= 200, lang = 'en', tweet_
print("show the 5 tweets: \n")
i =1
for tweet in posts[0:5]:
  print(str(i) + ') '+ tweet.full_text + '\n')
  i = i + 1
```

```
show the 5 tweets:

1) @Sandeep129612 policy and we prefer to work towards correcting any inconsist
encies in our processes. Please don’t provide your order details as we consider
them to be personal information. Our page is visible to public. (2/2)

-Anand

2) @Sandeep129612 We apologize for the disappointment with regard to the cancel
lation of your order. Once the order is canceled, we won't be able to reinstate
the same. We will be sure to forward this as feedback to the relevant team inte
rnally. We do not have a compensation (1/2)

-Anand

3) @Sandeep129612 You can view/cancel/ manage your subscriptions here: https://
t.co/UOIayLTW0l. (https://t.co/UOIayLTW0l.) -Rebecca

4) @Andrew____Ryan Hi, we'd like to take a closer look at this with you. When y
ou have a moment, please contact us here: https://t.co/YyJL5t4r2h. (https://t.c
o/YyJL5t4r2h.) We're here to help in any way we can. -Brielle

5) @ArtsyStuffMaker Thank you for the additional information. When you have a f
ree moment, please contact us here: https://t.co/YyJL5t4r2h. (https://t.co/YyJL
5t4r2h.) We'll get this further looked into. -Kali
```

In [202]:
```
df = pd.DataFrame([ tweet.full_text for tweet in posts], columns = ['Tweets'])
df.head
```

Out[202]:
```
<bound method NDFrame.head of                                                T
weets
0    @Sandeep129612 policy and we prefer to work to...
1    @Sandeep129612 We apologize for the disappoint...
2    @Sandeep129612 You can view/cancel/ manage you...
3    @Andrew____Ryan Hi, we'd like to take a closer...
4    @ArtsyStuffMaker Thank you for the additional ...
..                                                 ...
195  @BuddyWaters Hi there. We want to help. Can yo...
196  @hausofpri Hello! Please view this information...
197  @w_rldstar Hello! We're terribly sorry to hear...
198  @valajigar95 We're sorry for any inconvenience...
199  @OwnedbySamoyeds We're terribly sorry to hear ...

[200 rows x 1 columns]>
```

In [203]:
```
# cleaning text
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)
  text = re.sub(r':|_|@', '', text)


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

df
```

Out[203]:

	Tweets
0	policy and we prefer to work towards correcti...
1	We apologize for the disappointment with rega...
2	You can view/cancel/ manage your subscription...
3	Ryan Hi, we'd like to take a closer look at th...
4	Thank you for the additional information. Whe...
...	...
195	Hi there. We want to help. Can you tell us mo...
196	Hello! Please view this information "Release ...
197	rldstar Hello! We're terribly sorry to hear of...
198	We're sorry for any inconvenience. Could you ...
199	We're terribly sorry to hear about your recen...

200 rows × 1 columns

In [204]:
```
# polarity and subjectivity
def getSubjectivity(text):
  return tb(text).sentiment.subjectivity

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

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

df
```

Out[204]:

	Tweets	Subjectivity	Polarity
0	policy and we prefer to work towards correcti...	0.122222	-0.033333
1	We apologize for the disappointment with rega...	0.489815	0.133333
2	You can view/cancel/ manage your subscription...	0.000000	0.000000
3	Ryan Hi, we'd like to take a closer look at th...	0.000000	0.000000
4	Thank you for the additional information. Whe...	0.650000	0.200000
...	...	...	...
195	Hi there. We want to help. Can you tell us mo...	0.500000	0.500000
196	Hello! Please view this information "Release ...	0.375000	-0.125000
197	rldstar Hello! We're terribly sorry to hear of...	0.833333	0.266667
198	We're sorry for any inconvenience. Could you ...	0.750000	0.000000
199	We're terribly sorry to hear about your recen...	0.733333	-0.383333

200 rows × 3 columns

In [295]:
```
#wordcloud
allWords = ''.join(tweets for tweets in df['Tweets'])
wordCloud = wc(width = 800, height = 500, random_state =12, max_font_size = 119)

plt.imshow(wordCloud, interpolation = 'bilinear')
plt.axis('off')
plt.show()
```

In [296]:
```
#creating function to compute negative, neutral and positive analysis
def getAnalysis(score):
  if score < 0:
    return 'Negative'
  elif score == 0:
    return 'Neutral'
  else:
    return 'Positive'

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

df
```

Out[296]:

	Tweets	Subjectivity	Polarity	Analysis
0	policy and we prefer to work towards correcti...	0.122222	-0.033333	Negative
1	We apologize for the disappointment with rega...	0.489815	0.133333	Positive
2	You can view/cancel/ manage your subscription...	0.000000	0.000000	Neutral
3	Ryan Hi, we'd like to take a closer look at th...	0.000000	0.000000	Neutral
4	Thank you for the additional information. Whe...	0.650000	0.200000	Positive
...	...	...	...	...
195	Hi there. We want to help. Can you tell us mo...	0.500000	0.500000	Positive
196	Hello! Please view this information "Release ...	0.375000	-0.125000	Negative
197	rldstar Hello! We're terribly sorry to hear of...	0.833333	0.266667	Positive
198	We're sorry for any inconvenience. Could you ...	0.750000	0.000000	Neutral
199	We're terribly sorry to hear about your recen...	0.733333	-0.383333	Negative

200 rows × 4 columns

In [297]:
```
#print all +ve tweets
k=1
sortedDF = df.sort_values(by = ['Polarity'])
for i in range(0, sortedDF.shape[0]):
  if sortedDF['Analysis'][i] == 'Positive':
    print(str(k) + ') ' + sortedDF['Tweets'][i])
    print()
    k = k+1
```

```
1)  We apologize for the disappointment with regard to the cancellation of yo
ur order. Once the order is canceled, we won't be able to reinstate the same.
We will be sure to forward this as feedback to the relevant team internally.
We do not have a compensation (1/2)

-Anand

2)  Thank you for the additional information. When you have a free moment, pl
ease contact us here  We'll get this further looked into. -Kali

3)  Hi there! We're sorry to hear you're having difficulty canceling an orde
r. Can you tell us what kind of error message you're receiving when you try t
o cancel. Is this on a third-party seller order? Let us know, we want to hel
p. -Waya

4)  Thank you for clarifying. We'd like to take a closer look into your accou
nt. When you have a moment, please reach out to us directly here  -Trent

5)  Thanks for letting us know. We'd like to look into it for you. At your co
```

In [298]:
```
#print -ve tweets
j=1
sortedDF = df.sort_values(by = ['Polarity'], ascending ='False')
for i in range(0, sortedDF.shape[0]):
  if sortedDF['Analysis'][i] == 'Negative':
    print(str(j) + ') ' + sortedDF['Tweets'][i])
    print()
    j = j+1
```

```
1)  policy and we prefer to work towards correcting any inconsistencies in ou
r processes. Please don’t provide your order details as we consider them to b
e personal information. Our page is visible to public. (2/2)

-Anand

2)  Hi there. We're sorry for the poor experience. When you have a free momen
t, please check the locations listed here  Keep us posted. -Kali

3)  We're sorry for the poor experience. This is never the service we aim to
provide. Please allow us an opportunity to personally escalate this further b
y providing us with additional details using the following link  -Jonathan

4)  Looks like you've had an unpleasant experience with us. Could you please
let us know if there is any ongoing issue that went unaddressed? -Abdul

5)  Hi there. We're sorry to hear about the poor experience. You can find all
return options here  We hope this helps. -Kali
```

In [299]:
```
#print neutral tweets
j=1
sortedDF = df.sort_values(by = ['Polarity'])
for i in range(0, sortedDF.shape[0]):
  if sortedDF['Analysis'][i] == 'Neutral':
    print(str(j) + ') ' + sortedDF['Tweets'][i])
    print()
    j = j+1
```

```
view refund/replacement options available here  -Odalisa


52)  Bonjour, nos transporteurs ne sont pas en mesure de livrer un colis à un
e heure déterminée. En effet, de nombreux facteurs influent sur l’heure de li
vraison  la destination du colis et la tournée du livreur. Rencontrez-vous un
souci avec une livraison en cours ? -Hamza

53)  Our apologies! When you have a moment, please reach out to us via phone
or chat here  so we can assist you. -Bre

54) This one goes out to everyone who hit “Add to Cart” today. You know who y
ou are. 🛒

55) rldstar Apologies, thank you for the update. Please don't hesitate to con
tact us if you need any help in the future. -John

56)  We're sorry for any inconvenience. Could you tell us more about your iss
ue so that we can do the needful?
-Bilquis
```

In [302]:
```
#assigning float value to string value in Analysis
def getAnalysis(score):
  if score < 0:
    return -1.0
  elif score == 0:
    return 0.0
  else:
    return 1.0

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

df
```

Out[302]:

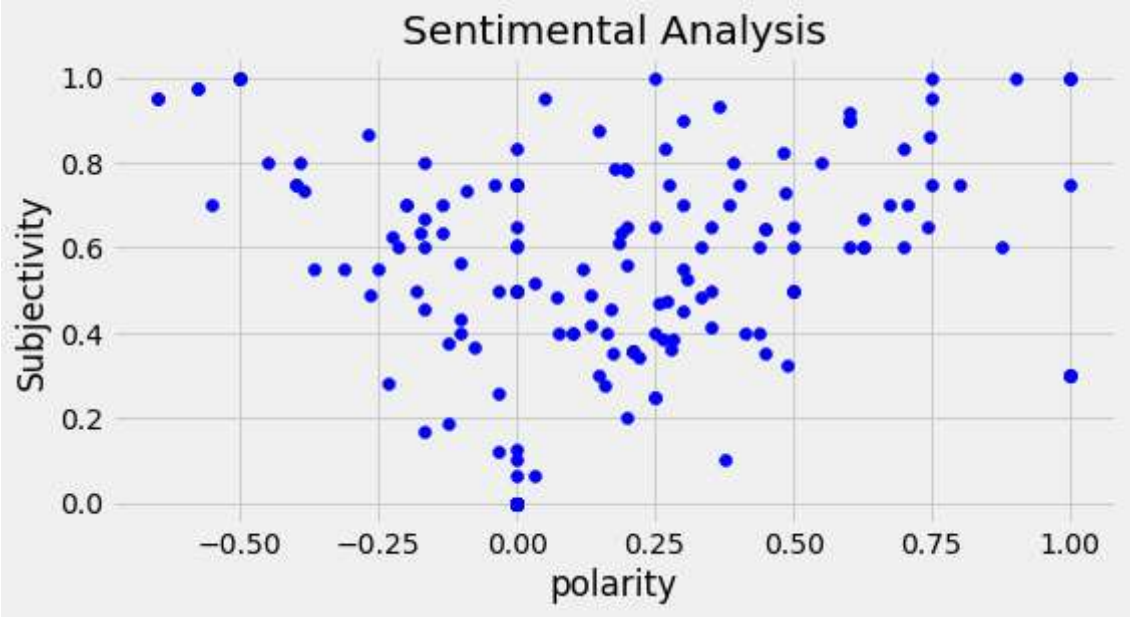
	Tweets	Subjectivity	Polarity	Analysis
0	policy and we prefer to work towards correcti...	0.122222	-0.033333	-1.0
1	We apologize for the disappointment with rega...	0.489815	0.133333	1.0
2	You can view/cancel/ manage your subscription...	0.000000	0.000000	0.0
3	Ryan Hi, we'd like to take a closer look at th...	0.000000	0.000000	0.0
4	Thank you for the additional information. Whe...	0.650000	0.200000	1.0
...	...	...	...	...
195	Hi there. We want to help. Can you tell us mo...	0.500000	0.500000	1.0
196	Hello! Please view this information "Release ...	0.375000	-0.125000	-1.0
197	rldstar Hello! We're terribly sorry to hear of...	0.833333	0.266667	1.0
198	We're sorry for any inconvenience. Could you ...	0.750000	0.000000	0.0
199	We're terribly sorry to hear about your recen...	0.733333	-0.383333	-1.0

200 rows × 4 columns

In [300]:
```
#plot the polarity and subjectivity

plt.figure(figsize=(8,4))
for i in range(0, df.shape[0]):
  plt.scatter(df['Polarity'][i], df['Subjectivity'][i], color ='Blue')

plt.title('Sentimental Analysis')
plt.xlabel('polarity')
plt.ylabel('Subjectivity')
plt.show()
```



In [212]:
```
#get percentage of +ve tweets
ptweets = df[df.Analysis ==1.0]
ptweets = ptweets['Tweets']

round(( ptweets.shape[0] / df.shape[0])*100 ,1)
```

Out[212]: 49.5

In [213]:
```
ntweets = df[df.Analysis == -1.0]
ntweets = ntweets['Tweets']

round(( ntweets.shape[0] / df.shape[0])*100 ,1)
```

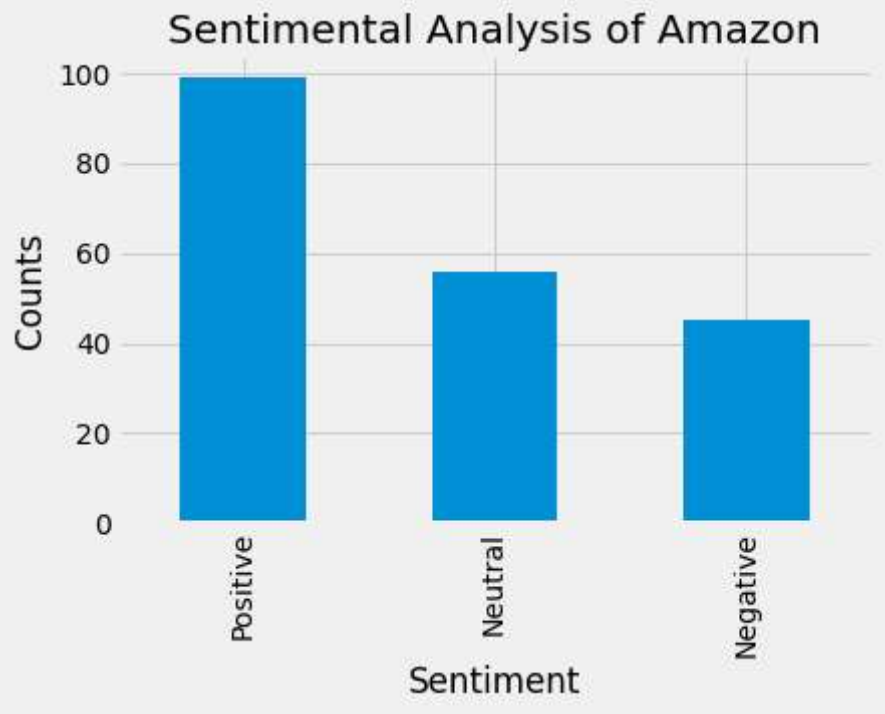
Out[213]: 22.5

In [214]:
```
Ntweets = df[df.Analysis == 0.0]
Ntweets = Ntweets['Tweets']

round(( Ntweets.shape[0] / df.shape[0])*100,1)
```

Out[214]: 28.0

In [301]:
```
#show value
df['Analysis'].value_counts()
#plot
plt.title('Sentimental Analysis of Amazon')
plt.xlabel('Sentiment')
plt.ylabel('Counts')
df['Analysis'].value_counts().plot(kind = 'bar')
plt.show()
```



In [216]:
```
from sklearn.model_selection import train_test_split
from treeinterpreter import treeinterpreter as ti
from sklearn.tree import DecisionTreeRegressor
from sklearn.ensemble import RandomForestRegressor

from sklearn import svm
from sklearn.svm import SVR

from sklearn.metrics import mean_squared_error
from math import sqrt
```

In [275]:
```
X = df.drop(["Tweets"],axis = 1)
y = df["Analysis"]
```

In [276]:
```
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_s
from sklearn.linear_model import LinearRegression as lr
```

In [277]:
```
#fit the train and test
log = lr()
log.fit(X_train, y_train)
```

Out[277]:
```
LinearRegression()
```

In [278]:
```
#prediction
pred = log.predict(X_test)
```

In [ ]:
```
from sklearn.metrics import accuracy_score
```

In [279]:
```
#finding accuracy
log.score(X_test, y_pred)*100
```

Out[279]:
```
100.0
```

In [280]:
```
#len of train and test
len(y_train),len(y_test)
```

Out[280]:
```
(160, 40)
```

In [260]:
```
X_train
```

Out[260]:

	Subjectivity	Polarity
108	0.000000	0.000
107	0.833333	0.700
189	0.125000	0.000
14	0.400000	0.100
56	0.666667	0.625
...	...	...
133	0.400000	0.075
137	0.000000	0.000
72	0.000000	0.000
140	0.750000	-0.400
37	0.900000	0.600

160 rows × 2 columns

In [158]:
```
X_test
```

Out[158]:

	Subjectivity	Polarity	Analysis
58	0.000000	0.000000	0.0
40	0.454545	0.136364	1.0
34	1.000000	1.000000	1.0
102	0.540000	0.160000	1.0
184	0.000000	0.000000	0.0
198	0.520649	0.325552	1.0
95	0.000000	0.000000	0.0
4	0.000000	0.000000	0.0
29	0.650000	0.350000	1.0
168	0.000000	0.000000	0.0
171	0.500000	0.150000	1.0
18	0.300000	1.000000	1.0
11	0.500000	0.068182	1.0
89	0.000000	0.000000	0.0
110	0.600000	0.500000	1.0
118	0.000000	0.000000	0.0
159	0.466667	-0.066667	-1.0
35	0.000000	0.000000	0.0
136	1.000000	1.000000	1.0
59	0.600000	0.250000	1.0
51	0.800000	0.675000	1.0
16	0.150000	0.050000	1.0
44	0.727273	0.485227	1.0
94	1.000000	0.000000	0.0
31	0.875000	0.325000	1.0
162	0.421970	0.277841	1.0
38	0.600000	0.700000	1.0
28	0.800000	0.383333	1.0
193	0.333333	0.250000	1.0
27	0.000000	0.000000	0.0
47	0.500000	0.500000	1.0
165	0.000000	0.000000	0.0
194	0.000000	0.000000	0.0
177	0.000000	0.000000	0.0

	Subjectivity	Polarity	Analysis
176	0.552273	0.243182	1.0
97	0.320952	0.143929	1.0
174	0.000000	0.000000	0.0
73	0.600000	-0.250000	-1.0
69	0.000000	0.000000	0.0
172	0.500000	-0.050000	-1.0
108	0.000000	0.000000	0.0
107	0.000000	0.000000	0.0
189	0.000000	0.000000	0.0
14	0.454545	0.136364	1.0
56	0.366667	0.206250	1.0
19	0.000000	0.000000	0.0
114	1.000000	0.000000	0.0
39	0.950000	0.650000	1.0
185	0.766667	0.204167	1.0
124	0.000000	0.000000	0.0
98	1.000000	0.000000	0.0
123	0.700000	0.300000	1.0
119	0.469481	0.270130	1.0
53	0.850000	0.437500	1.0
33	0.000000	0.000000	0.0
179	0.000000	0.000000	0.0
181	0.393939	0.210227	1.0
106	0.066667	0.000000	0.0
199	0.250000	0.250000	1.0
138	0.460000	0.060000	1.0