

```
In [3]: import pandas as pd
        from textblob import TextBlob
```

```
In [4]: # Load the dataset
df = pd.read_csv("C:/Users/HP/Desktop/Sentiment_Analysis/stock_tweets.csv")
df
```

Out[4]:

	Date	Tweet	Stock Name	Company Name
0	2022-09-29 23:41:16+00:00	Mainstream media has done an amazing job at br...	TSLA	Tesla, Inc.
1	2022-09-29 23:24:43+00:00	Tesla delivery estimates are at around 364k fr...	TSLA	Tesla, Inc.
2	2022-09-29 23:18:08+00:00	3/ Even if I include 63.0M unvested RSUs as of...	TSLA	Tesla, Inc.
3	2022-09-29 22:40:07+00:00	@RealDanODowd @WholeMarsBlog @Tesla Hahaha why...	TSLA	Tesla, Inc.
4	2022-09-29 22:27:05+00:00	@RealDanODowd @Tesla Stop trying to kill kids,...	TSLA	Tesla, Inc.
...	...	...	...	...
80788	2021-10-07 17:11:57+00:00	Some of the fastest growing tech stocks on the...	XPEV	XPeng Inc.
80789	2021-10-04 17:05:59+00:00	With earnings on the horizon, here is a quick ...	XPEV	XPeng Inc.
80790	2021-10-01 04:43:41+00:00	Our record delivery results are a testimony of...	XPEV	XPeng Inc.
80791	2021-10-01 00:03:32+00:00	We delivered 10,412 Smart EVs in Sep 2021, rea...	XPEV	XPeng Inc.
80792	2021-09-30 10:22:52+00:00	Why can XPeng P5 deliver outstanding performan...	XPEV	XPeng Inc.

80793 rows × 4 columns

```
In [5]: # Preprocess the text data
def preprocess_text(text):
    # Convert text to lowercase
    text = text.lower()
    # Remove special characters and URLs
    text = ' '.join(word for word in text.split() if not word.startswith('http'))
    text = ''.join(character for character in text if character.isalnum() or character.isspace())
    return text

df['Cleaned Tweet'] = df['Tweet'].apply(preprocess_text)
```

In [6]: df

Out[6]:

	Date	Tweet	Stock Name	Company Name	Cleaned Tweet
0	2022-09-29 23:41:16+00:00	Mainstream media has done an amazing job at br...	TSLA	Tesla, Inc.	mainstream media has done an amazing job at br...
1	2022-09-29 23:24:43+00:00	Tesla delivery estimates are at around 364k fr...	TSLA	Tesla, Inc.	tesla delivery estimates are at around 364k fr...
2	2022-09-29 23:18:08+00:00	3/ Even if I include 63.0M unvested RSUs as of...	TSLA	Tesla, Inc.	3 even if i include 630m unvested rsus as of 6...
3	2022-09-29 22:40:07+00:00	@RealDanODowd @WholeMarsBlog @Tesla Hahaha why...	TSLA	Tesla, Inc.	realdanodowd wholemarsblog tesla hahaha why ar...
4	2022-09-29 22:27:05+00:00	@RealDanODowd @Tesla Stop trying to kill kids,...	TSLA	Tesla, Inc.	realdanodowd tesla stop trying to kill kids yo...
...	...	...	...	...	...
80788	2021-10-07 17:11:57+00:00	Some of the fastest growing tech stocks on the...	XPEV	XPeng Inc.	some of the fastest growing tech stocks on the...
80789	2021-10-04 17:05:59+00:00	With earnings on the horizon, here is a quick ...	XPEV	XPeng Inc.	with earnings on the horizon here is a quick s...
80790	2021-10-01 04:43:41+00:00	Our record delivery results are a testimony of...	XPEV	XPeng Inc.	our record delivery results are a testimony of...
80791	2021-10-01 00:03:32+00:00	We delivered 10,412 Smart EVs in Sep 2021, rea...	XPEV	XPeng Inc.	we delivered 10412 smart evs in sep 2021 reach...
80792	2021-09-30 10:22:52+00:00	Why can XPeng P5 deliver outstanding performan...	XPEV	XPeng Inc.	why can xpeng p5 deliver outstanding performan...

80793 rows × 5 columns

```
In [7]: # Perform sentiment analysis
def analyze_sentiment(text):
    analysis = TextBlob(text)
    # Assign sentiment polarity
    if analysis.sentiment.polarity > 0:
        return 'Positive'
    elif analysis.sentiment.polarity == 0:
        return 'Neutral'
    else:
        return 'Negative'

df['Sentiment'] = df['Cleaned Tweet'].apply(analyze_sentiment)
```

In [8]: df

Out[8]:

	Date	Tweet	Stock Name	Company Name	Cleaned Tweet	Sentiment
0	2022-09-29 23:41:16+00:00	Mainstream media has done an amazing job at br...	TSLA	Tesla, Inc.	mainstream media has done an amazing job at br...	Positive
1	2022-09-29 23:24:43+00:00	Tesla delivery estimates are at around 364k fr...	TSLA	Tesla, Inc.	tesla delivery estimates are at around 364k fr...	Neutral
2	2022-09-29 23:18:08+00:00	3/ Even if I include 63.0M unvested RSUs as of...	TSLA	Tesla, Inc.	3 even if i include 630m unvested rsus as of 6...	Positive
3	2022-09-29 22:40:07+00:00	@RealDanODowd @WholeMarsBlog @Tesla Hahaha why...	TSLA	Tesla, Inc.	realdanodowd wholemarsblog tesla hahaha why ar...	Positive
4	2022-09-29 22:27:05+00:00	@RealDanODowd @Tesla Stop trying to kill kids,...	TSLA	Tesla, Inc.	realdanodowd tesla stop trying to kill kids yo...	Negative
...	...	...	...	...	...	...
80788	2021-10-07 17:11:57+00:00	Some of the fastest growing tech stocks on the...	XPEV	XPeng Inc.	some of the fastest growing tech stocks on the...	Neutral
80789	2021-10-04 17:05:59+00:00	With earnings on the horizon, here is a quick ...	XPEV	XPeng Inc.	with earnings on the horizon here is a quick s...	Positive
80790	2021-10-01 04:43:41+00:00	Our record delivery results are a testimony of...	XPEV	XPeng Inc.	our record delivery results are a testimony of...	Neutral
80791	2021-10-01 00:03:32+00:00	We delivered 10,412 Smart EVs in Sep 2021, rea...	XPEV	XPeng Inc.	we delivered 10412 smart evs in sep 2021 reach...	Positive
80792	2021-09-30 10:22:52+00:00	Why can XPeng P5 deliver outstanding performan...	XPEV	XPeng Inc.	why can xpeng p5 deliver outstanding performan...	Positive

80793 rows × 6 columns

```
In [9]: # Sentiment distribution Category value count
sentiment_distribution = df['Sentiment'].value_counts()
print("Sentiment Distribution Count")
print(sentiment_distribution)
```

```
Sentiment Distribution Count
Positive    39348
Neutral     27015
Negative    14430
Name: Sentiment, dtype: int64
```

```
In [10]: # Calculation of proportion of distribution of sentiments
sentiment_dist_percentage = df['Sentiment'].value_counts(normalize=True) * 100
print("\nSentiment proportion/Percentage")
print(sentiment_dist_percentage)
```

```
Sentiment proportion/Percentage
Positive    48.702239
Neutral     33.437303
Negative    17.860458
Name: Sentiment, dtype: float64
```

```
In [11]: # Create DataFrame for sentiment distribution
sentiment_df = pd.DataFrame({'Sentiment': sentiment_distribution.index,
                             'Sentiment Count': sentiment_distribution.values,
                             'Sentiment Share (%)': sentiment_dist_percentage.values})

sentiment_df
```

Out[11]:

	Sentiment	Sentiment Count	Sentiment Share (%)
0	Positive	39348	48.702239
1	Neutral	27015	33.437303
2	Negative	14430	17.860458

```
In [12]: # Save results to Excel file to import it to tableau public
sentiment_df.to_excel("C:/Users/HP/Desktop/Sentiment_Analysis/output/sentiment_Analysis_results.xlsx")
print("Results saved to Sentiment_Analysis_results.xlsx")
```

Results saved to Sentiment\_Analysis\_results.xlsx'

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