

```
In [5]: import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
from textblob import TextBlob
from wordcloud import WordCloud
import plotly.graph_objects as go
import plotly.express as px

trump_reviews = pd.read_csv("Trumpall12.csv")
biden_reviews = pd.read_csv("Bidenall12.csv")
```

```
In [6]: print(trump_reviews.head()) #first 5 rows
print(biden_reviews.head())
```

	user	text
0	manny_rosen	@sanofi please tell us how many shares the Cr...
1	osi_abdul	https://t.co/atM98CpqF7 (https://t.co/atM98CpqF7) Like, comment, RT #P...
2	Patsyrw	Your AG Barr is as useless & corrupt as y...
3	seyedebrahimi_m	Mr. Trump! Wake Up! Most of the comments bel...
4	James09254677	After 4 years you think you would have figure...

	user	text
0	MarkHodder3	@JoeBiden And we'll find out who won in 2026...
1	K87327961G	@JoeBiden Your Democratic Nazi Party cannot be...
2	OldlaceA	@JoeBiden So did Lying Barr
3	penblogger	@JoeBiden It's clear you didnt compose this tw...
4	Aquarian0264	@JoeBiden I will vote in person thank you.

```
In [ ]: #analyzing sentiments
```

```
In [7]: textblob1 = TextBlob(trump_reviews["text"][10])
print("Trump :",textblob1.sentiment)
textblob2 = TextBlob(biden_reviews["text"][500])
print("Biden :",textblob2.sentiment)
```

```
Trump : Sentiment(polarity=0.15, subjectivity=0.3125)
Biden : Sentiment(polarity=0.6, subjectivity=0.9)
```

```
In [8]: def find_pol(review):
        return TextBlob(review).sentiment.polarity
trump_reviews["Sentiment Polarity"] = trump_reviews["text"].apply(find_pol)
print(trump_reviews.tail())

biden_reviews["Sentiment Polarity"] = biden_reviews["text"].apply(find_pol)
print(biden_reviews.tail())
```

```

      user
2783 4diva63 @realDonaldTrump For the 1/100 time, absentee ...
2784 hidge826 @realDonaldTrump If you're so scared of losing...
2785 SpencerRossy @realDonaldTrump I rarely get involved with fo...
2786 ScoobyMcperson @realDonaldTrump This is the moment when Trump...
2787 bjklinz @realDonaldTrump I'm sorry, Donald. No. #POTUS
```

```

Sentiment Polarity
2783      0.000
2784      0.000
2785      0.225
2786      0.000
2787     -0.500
```

```

      user
2535 meryn1977 @JoeBiden You'll just try to calm those waters...
2536 BSNelson114 @JoeBiden 96 days 96 dias #VoteJoeBiden2020 #...
2537 KenCapel @JoeBiden YOU THINK YOU CAN DO THAT??? YOU CAN...
2538 LeslyeHale @JoeBiden Trump wants our children back at sch...
2539 rerickre @JoeBiden ... and I know, because it's much co...
```

```

Sentiment Polarity
2535      0.15
2536      0.00
2537      0.00
2538      0.10
2539      0.20
```

```
In [ ]: #Polarity ranges from -1 to +1(negative to positive) and tells whether the
        #text has negative sentiments or positive sentiments. Polarity tells about factual information.
```

```
In [9]: trump_reviews["Expression Label"] = np.where(trump_reviews["Sentiment Polarity"]>0, "positive", "negative")
trump_reviews["Expression Label"][trump_reviews["Sentiment Polarity"]==0]="Neutral"
print(trump_reviews.tail())

biden_reviews["Expression Label"] = np.where(biden_reviews["Sentiment Polarity"]>0, "positive", "negative")
biden_reviews["Expression Label"][trump_reviews["Sentiment Polarity"]==0]="Neutral"
print(biden_reviews.tail())
```

	user	text \
2783	4diva63	@realDonaldTrump For the 1/100 time, absentee ...
2784	hidge826	@realDonaldTrump If you're so scared of losing...
2785	SpencerRossy	@realDonaldTrump I rarely get involved with fo...
2786	ScoobyMcperson	@realDonaldTrump This is the moment when Trump...
2787	bjklinz	@realDonaldTrump I'm sorry, Donald. No. #POTUS

	Sentiment Polarity	Expression Label
2783	0.000	Neutral
2784	0.000	Neutral
2785	0.225	positive
2786	0.000	Neutral
2787	-0.500	negative

	user	text \
2535	meryn1977	@JoeBiden You'll just try to calm those waters...
2536	BSNelson114	@JoeBiden 96 days 96 dias #VoteJoeBiden2020 #...
2537	KenCapel	@JoeBiden YOU THINK YOU CAN DO THAT??? YOU CAN...
2538	LeslyeHale	@JoeBiden Trump wants our children back at sch...
2539	rerickre	@JoeBiden ... and I know, because it's much co...

	Sentiment Polarity	Expression Label
2535	0.15	Neutral
2536	0.00	Neutral
2537	0.00	negative
2538	0.10	Neutral
2539	0.20	positive

C:\Users\HP\AppData\Local\Temp\ipykernel_10048\168499711.py:2: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
trump_reviews["Expression Label"][trump_reviews["Sentiment Polarity"]==0]="Neutral"
```

C:\Users\HP\AppData\Local\Temp\ipykernel_10048\168499711.py:6: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
biden_reviews["Expression Label"][trump_reviews["Sentiment Polarity"]==0]="Neutral"
```

```
In [10]: reviews1 = trump_reviews[trump_reviews['Sentiment Polarity'] == 0.0000]
print(reviews1.shape)

cond1=trump_reviews['Sentiment Polarity'].isin(reviews1['Sentiment Polarity'])
trump_reviews.drop(trump_reviews[cond1].index, inplace = True)
print(trump_reviews.shape)

reviews2 = biden_reviews[biden_reviews['Sentiment Polarity'] == 0.0000]
print(reviews2.shape)

cond2=biden_reviews['Sentiment Polarity'].isin(reviews1['Sentiment Polarity'])
biden_reviews.drop(biden_reviews[cond2].index, inplace = True)
print(biden_reviews.shape)

(1464, 4)
(1324, 4)
(1509, 4)
(1031, 4)
```

```
In [11]: # Donald Trump
np.random.seed(10)
remove_n = 324
drop_indices = np.random.choice(trump_reviews.index, remove_n, replace=False)
df_subset_trump = trump_reviews.drop(drop_indices)
print(df_subset_trump.shape)
# Joe Biden
np.random.seed(10)
remove_n = 31
drop_indices = np.random.choice(biden_reviews.index, remove_n, replace=False)
df_subset_biden = biden_reviews.drop(drop_indices)
print(df_subset_biden.shape)
```

(1000, 4)

(1000, 4)

```

In [12]: count_1 = df_subset_trump.groupby('Expression Label').count()
print(count_1)

negative_per1 = (count_1['Sentiment Polarity'][0]/1000)*100
positive_per1 = (count_1['Sentiment Polarity'][1]/1000)*100

count_2 = df_subset_biden.groupby('Expression Label').count()
print(count_2)

negative_per2 = (count_2['Sentiment Polarity'][0]/1000)*100
positive_per2 = (count_2['Sentiment Polarity'][1]/1000)*100

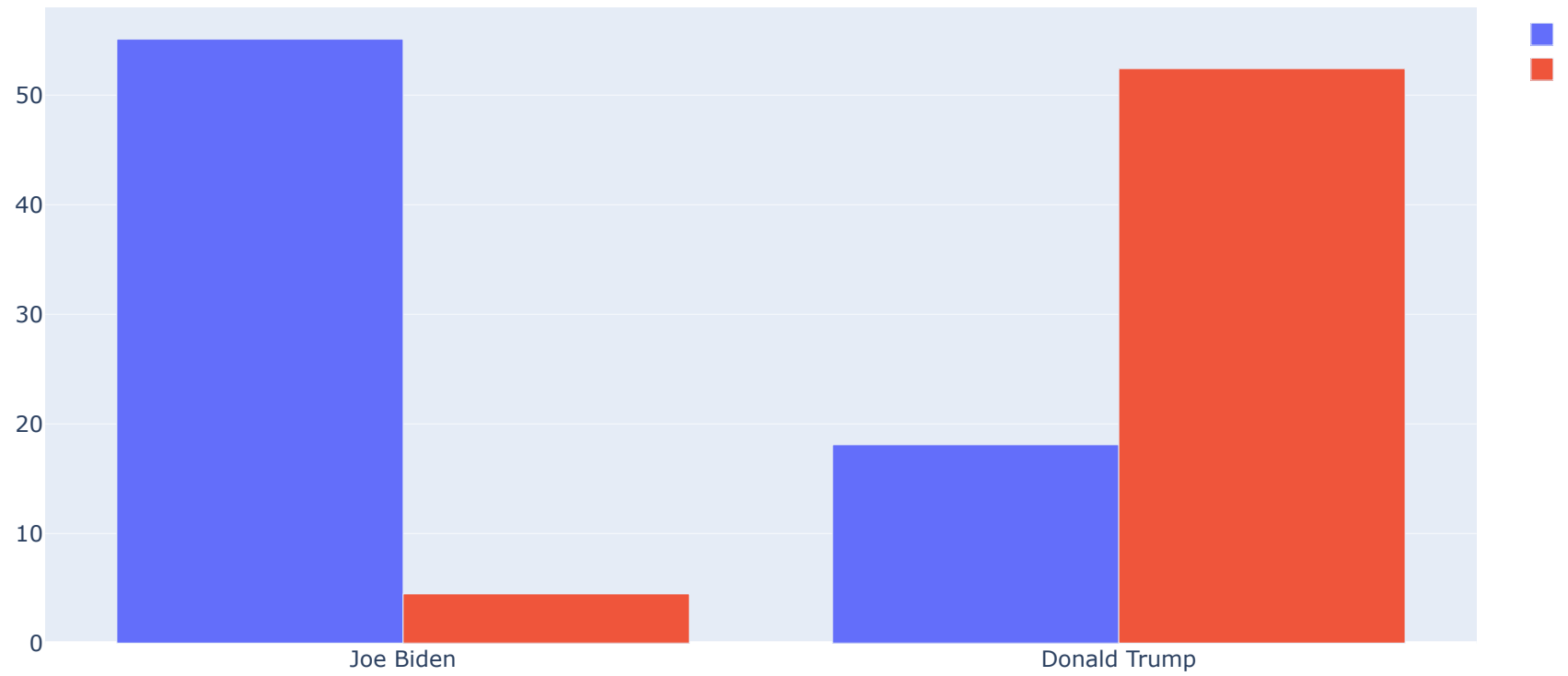
Politicians = ['Joe Biden', 'Donald Trump']
lis_pos = [positive_per1, positive_per2]
lis_neg = [negative_per1, negative_per2]

fig = go.Figure(data=[
    go.Bar(name='Positive', x=Politicians, y=lis_pos),
    go.Bar(name='Negative', x=Politicians, y=lis_neg)
])
# Change the bar mode
fig.update_layout(barmode='group')
fig.show()

```

	user	text	Sentiment Polarity
Expression Label			
negative	449	449	449
positive	551	551	551

	user	text	Sentiment Polarity
Expression Label			
Neutral	524	524	524
negative	181	181	181
positive	295	295	295



In []: