

```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

```
df=pd.read_csv('/content/combined.csv')
```

```
df.head()
```



	text	label
0	The weather is nice today.	0.0
1	I need to buy some groceries.	0.0
2	What time does the store open?	0.0
3	She is reading a book.	0.0
4	The train arrives at 5 PM.	0.0

```
df.isnull().sum()
```



	0
text	0
label	1

dtype: int64

```
df.info()
```



```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 15013 entries, 0 to 15012
Data columns (total 2 columns):
#   Column  Non-Null Count  Dtype
---  -
0    text    15013 non-null     object
1    label    15012 non-null     float64
dtypes: float64(1), object(1)
memory usage: 234.7+ KB
```

```
df.drop_duplicates(inplace=True)
```

```
df
```



	text	label
0	The weather is nice today.	0.0
1	I need to buy some groceries.	0.0
2	What time does the store open?	0.0
3	She is reading a book.	0.0
4	The train arrives at 5 PM.	0.0
5	I have a meeting in the afternoon.	0.0
6	He enjoys playing football.	0.0
7	The cat is sleeping on the couch.	0.0
8	Water boils at 100 degrees Celsius.	0.0
9	I like to listen to music.	0.0
5000	You are an amazing person!	1.0
5001	Keep up the great work!	1.0
5002	Your kindness makes the world a better place.	1.0
5003	Believe in yourself, you are capable of great ...	1.0
5004	You bring joy to those around you.	1.0
5005	Your hard work and dedication inspire others.	1.0
5006	Never stop chasing your dreams.	1.0
5007	You have a wonderful heart.	1.0
5008	Your positivity is contagious.	1.0
5009	Keep smiling, it brightens up everyone's day.	1.0
10000	I will hunt you down and make you suffer.	2.0
10001	You are the worst thing that ever happened to ...	2.0
10002	People like you deserve to be erased from exis...	2.0
10003	I will destroy everything you love.	2.0
10004	You should just disappear from this planet.	2.0
10005	You are a worthless piece of trash.	2.0
10006	Everyone hates you and always will.	2.0
10007	i will kill you.	2.0
10008	kill you till death.	2.0
10009	i will beat you untill you bleed.	NaN
10010	No one cares if you live or die.	2.0
10011	I swear I will make your life a living nightmare.	2.0
10012	You are nothing but a failure and a burden.	2.0
10013	The world would be better off without you.	2.0
10014	I will ruin you in every possible way.	2.0
10015	You are the most disgusting person I've ever s...	2.0
10016	You should be locked up and never let out.	2.0
10017	I hope you experience the worst pain imaginable.	2.0
10018	If I see you, I won't hold back my anger.	2.0
10019	You better watch your back.	2.0
10020	I will make sure you regret everything.	2.0
10021	People like you should not exist.	2.0
10022	You are a walking disaster, and everyone knows...	2.0
14999	i will make you suffer and kill till death.	2.0
15000	i will kill your parents.	2.0
15001	i will kill your friends.	2.0
15002	i will kill that girl.	2.0
15003	i will kill that guy.	2.0
15004	i will kill your family.	2.0

15005	i will kill your father.	2.0
15006	i will kill this girl.	2.0
15007	i will kill this boys.	2.0
15008	i will kill the boy you love.	2.0
15009	i will kill anyone you love.	2.0
15010	i will kill you classmate.	2.0

```
df.duplicated().sum()
```

```
np.int64(0)
```

```
df["label"].fillna(df["label"].mean(),inplace=True)
```

<ipython-input-10-9905625c9890>:1: FutureWarning: A value is trying to be set on a copy of a DataFrame or Series through chained assignment. The behavior will change in pandas 3.0. This inplace method will never work because the intermediate object on which we are setting For example, when doing 'df[col].method(value, inplace=True)', try using 'df.method({col: value}, inplace=True)' or df[col] = df[col]

```
df["label"].fillna(df["label"].mean(),inplace=True)
```

```
df.isnull().sum()
```

```
0
text  0
label 0
```

```
dtype: int64
```

```
from sklearn.preprocessing import StandardScaler
scaler=StandardScaler()
df_scaled=df.copy()
df_scaled[["label"]]=scaler.fit_transform(df[["label"]])
df_scaled
```



	text	label
0	The weather is nice today.	-1.855422
1	I need to buy some groceries.	-1.855422
2	What time does the store open?	-1.855422
3	She is reading a book.	-1.855422
4	The train arrives at 5 PM.	-1.855422
5	I have a meeting in the afternoon.	-1.855422
6	He enjoys playing football.	-1.855422
7	The cat is sleeping on the couch.	-1.855422
8	Water boils at 100 degrees Celsius.	-1.855422
9	I like to listen to music.	-1.855422
5000	You are an amazing person!	-0.570899
5001	Keep up the great work!	-0.570899
5002	Your kindness makes the world a better place.	-0.570899
5003	Believe in yourself, you are capable of great ...	-0.570899
5004	You bring joy to those around you.	-0.570899
5005	Your hard work and dedication inspire others.	-0.570899
5006	Never stop chasing your dreams.	-0.570899
5007	You have a wonderful heart.	-0.570899
5008	Your positivity is contagious.	-0.570899
5009	Keep smiling, it brightens up everyone's day.	-0.570899
10000	I will hunt you down and make you suffer.	0.713624
10001	You are the worst thing that ever happened to ...	0.713624
10002	People like you deserve to be erased from exis...	0.713624
10003	I will destroy everything you love.	0.713624
10004	You should just disappear from this planet.	0.713624
10005	You are a worthless piece of trash.	0.713624
10006	Everyone hates you and always will.	0.713624
10007	i will kill you.	0.713624
10008	kill you till death.	0.713624
10009	i will beat you untill you bleed.	0.000000
10010	No one cares if you live or die.	0.713624
10011	I swear I will make your life a living nightmare.	0.713624
10012	You are nothing but a failure and a burden.	0.713624
10013	The world would be better off without you.	0.713624
10014	I will ruin you in every possible way.	0.713624
10015	You are the most disgusting person I've ever s...	0.713624
10016	You should be locked up and never let out.	0.713624
10017	I hope you experience the worst pain imaginable.	0.713624
10018	If I see you, I won't hold back my anger.	0.713624
10019	You better watch your back.	0.713624
10020	I will make sure you regret everything.	0.713624
10021	People like you should not exist.	0.713624
10022	You are a walking disaster, and everyone knows...	0.713624
14999	i will make you suffer and kill till death.	0.713624
15000	i will kill your parents.	0.713624
15001	i will kill your friends.	0.713624
15002	i will kill that girl.	0.713624
15003	i will kill that guy.	0.713624
15004	i will kill your family.	0.713624

15005	i will kill your father.	0.713624
15006	i will kill this girl.	0.713624
15007	i will kill this boys.	0.713624
15008	i will kill the boy you love.	0.713624
15009	i will kill anyone you love.	0.713624
15010	i will kill you classmate.	0.713624

```
#minmax scaler
from sklearn.preprocessing import MinMaxScaler
scaler=MinMaxScaler()
df_scaled=df.copy()
df_scaled[["label"]]=scaler.fit_transform(df[["label"]])
df_scaled
```



	text	label
0	The weather is nice today.	0.000000
1	I need to buy some groceries.	0.000000
2	What time does the store open?	0.000000
3	She is reading a book.	0.000000
4	The train arrives at 5 PM.	0.000000
5	I have a meeting in the afternoon.	0.000000
6	He enjoys playing football.	0.000000
7	The cat is sleeping on the couch.	0.000000
8	Water boils at 100 degrees Celsius.	0.000000
9	I like to listen to music.	0.000000
5000	You are an amazing person!	0.500000
5001	Keep up the great work!	0.500000
5002	Your kindness makes the world a better place.	0.500000
5003	Believe in yourself, you are capable of great ...	0.500000
5004	You bring joy to those around you.	0.500000
5005	Your hard work and dedication inspire others.	0.500000
5006	Never stop chasing your dreams.	0.500000
5007	You have a wonderful heart.	0.500000
5008	Your positivity is contagious.	0.500000
5009	Keep smiling, it brightens up everyone's day.	0.500000
10000	I will hunt you down and make you suffer.	1.000000
10001	You are the worst thing that ever happened to ...	1.000000
10002	People like you deserve to be erased from exis...	1.000000
10003	I will destroy everything you love.	1.000000
10004	You should just disappear from this planet.	1.000000
10005	You are a worthless piece of trash.	1.000000
10006	Everyone hates you and always will.	1.000000
10007	i will kill you.	1.000000
10008	kill you till death.	1.000000
10009	i will beat you untill you bleed.	0.722222
10010	No one cares if you live or die.	1.000000
10011	I swear I will make your life a living nightmare.	1.000000
10012	You are nothing but a failure and a burden.	1.000000
10013	The world would be better off without you.	1.000000
10014	I will ruin you in every possible way.	1.000000
10015	You are the most disgusting person I've ever s...	1.000000
10016	You should be locked up and never let out.	1.000000
10017	I hope you experience the worst pain imaginable.	1.000000
10018	If I see you, I won't hold back my anger.	1.000000
10019	You better watch your back.	1.000000
10020	I will make sure you regret everything.	1.000000
10021	People like you should not exist.	1.000000
10022	You are a walking disaster, and everyone knows...	1.000000
14999	i will make you suffer and kill till death.	1.000000
15000	i will kill your parents.	1.000000
15001	i will kill your friends.	1.000000
15002	i will kill that girl.	1.000000
15003	i will kill that guy.	1.000000
15004	i will kill your family.	1.000000

15005	i will kill your father.	1.000000
15006	i will kill this girl.	1.000000
15007	i will kill this boys.	1.000000
15008	i will kill the boy you love.	1.000000
15009	i will kill anyone you love.	1.000000
15010	i will kill you classmate.	1.000000

```
#sentimental analysis
```

```
import nltk
```

```
from nltk.sentiment.vader import SentimentIntensityAnalyzer
```

```
nltk.download('vader_lexicon')
```

```
[nltk_data] Downloading package vader_lexicon to /root/nltk_data...  
[nltk_data] Package vader_lexicon is already up-to-date!  
True
```

```
#sentment analysis model
```

```
sid = SentimentIntensityAnalyzer()
```

```
df['sentiment_scores'] = df['text'].apply(lambda x: sid.polarity_scores(x))
```

```
df
```



	text	label	sentiment_scores
0	The weather is nice today.	0.000000	{'neg': 0.0, 'neu': 0.588, 'pos': 0.412, 'comp...
1	I need to buy some groceries.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
2	What time does the store open?	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
3	She is reading a book.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
4	The train arrives at 5 PM.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
5	I have a meeting in the afternoon.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
6	He enjoys playing football.	0.000000	{'neg': 0.0, 'neu': 0.282, 'pos': 0.718, 'comp...
7	The cat is sleeping on the couch.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
8	Water boils at 100 degrees Celsius.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
9	I like to listen to music.	0.000000	{'neg': 0.0, 'neu': 0.615, 'pos': 0.385, 'comp...
5000	You are an amazing person!	1.000000	{'neg': 0.0, 'neu': 0.494, 'pos': 0.506, 'comp...
5001	Keep up the great work!	1.000000	{'neg': 0.0, 'neu': 0.477, 'pos': 0.523, 'comp...
5002	Your kindness makes the world a better place.	1.000000	{'neg': 0.0, 'neu': 0.459, 'pos': 0.541, 'comp...
5003	Believe in yourself, you are capable of great ...	1.000000	{'neg': 0.0, 'neu': 0.511, 'pos': 0.489, 'comp...
5004	You bring joy to those around you.	1.000000	{'neg': 0.0, 'neu': 0.612, 'pos': 0.388, 'comp...
5005	Your hard work and dedication inspire others.	1.000000	{'neg': 0.139, 'neu': 0.495, 'pos': 0.366, 'co...
5006	Never stop chasing your dreams.	1.000000	{'neg': 0.0, 'neu': 0.395, 'pos': 0.605, 'comp...
5007	You have a wonderful heart.	1.000000	{'neg': 0.0, 'neu': 0.448, 'pos': 0.552, 'comp...
5008	Your positivity is contagious.	1.000000	{'neg': 0.312, 'neu': 0.26, 'pos': 0.429, 'com...
5009	Keep smiling, it brightens up everyone's day.	1.000000	{'neg': 0.0, 'neu': 0.476, 'pos': 0.524, 'comp...
10000	I will hunt you down and make you suffer.	2.000000	{'neg': 0.333, 'neu': 0.667, 'pos': 0.0, 'comp...
10001	You are the worst thing that ever happened to ...	2.000000	{'neg': 0.291, 'neu': 0.709, 'pos': 0.0, 'comp...
10002	People like you deserve to be erased from exis...	2.000000	{'neg': 0.0, 'neu': 0.762, 'pos': 0.238, 'comp...
10003	I will destroy everything you love.	2.000000	{'neg': 0.327, 'neu': 0.28, 'pos': 0.393, 'com...
10004	You should just disappear from this planet.	2.000000	{'neg': 0.241, 'neu': 0.759, 'pos': 0.0, 'comp...
10005	You are a worthless piece of trash.	2.000000	{'neg': 0.367, 'neu': 0.633, 'pos': 0.0, 'comp...
10006	Everyone hates you and always will.	2.000000	{'neg': 0.367, 'neu': 0.633, 'pos': 0.0, 'comp...
10007	i will kill you.	2.000000	{'neg': 0.701, 'neu': 0.299, 'pos': 0.0, 'comp...
10008	kill you till death.	2.000000	{'neg': 0.811, 'neu': 0.189, 'pos': 0.0, 'comp...
10009	i will beat you untill you bleed.	1.444444	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
10010	No one cares if you live or die.	2.000000	{'neg': 0.433, 'neu': 0.355, 'pos': 0.213, 'co...
10011	I swear I will make your life a living nightmare.	2.000000	{'neg': 0.167, 'neu': 0.833, 'pos': 0.0, 'comp...
10012	You are nothing but a failure and a burden.	2.000000	{'neg': 0.31, 'neu': 0.403, 'pos': 0.286, 'com...
10013	The world would be better off without you.	2.000000	{'neg': 0.0, 'neu': 0.707, 'pos': 0.293, 'comp...
10014	I will ruin you in every possible way.	2.000000	{'neg': 0.388, 'neu': 0.612, 'pos': 0.0, 'comp...
10015	You are the most disgusting person I've ever s...	2.000000	{'neg': 0.316, 'neu': 0.684, 'pos': 0.0, 'comp...
10016	You should be locked up and never let out.	2.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
10017	I hope you experience the worst pain imaginable.	2.000000	{'neg': 0.517, 'neu': 0.28, 'pos': 0.203, 'com...
10018	If I see you, I won't hold back my anger.	2.000000	{'neg': 0.346, 'neu': 0.654, 'pos': 0.0, 'comp...
10019	You better watch your back.	2.000000	{'neg': 0.0, 'neu': 0.58, 'pos': 0.42, 'compou...
10020	I will make sure you regret everything.	2.000000	{'neg': 0.308, 'neu': 0.44, 'pos': 0.253, 'com...
10021	People like you should not exist.	2.000000	{'neg': 0.0, 'neu': 0.667, 'pos': 0.333, 'comp...
10022	You are a walking disaster, and everyone knows...	2.000000	{'neg': 0.369, 'neu': 0.631, 'pos': 0.0, 'comp...
14999	i will make you suffer and kill till death.	2.000000	{'neg': 0.708, 'neu': 0.292, 'pos': 0.0, 'comp...
15000	i will kill your parents.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15001	i will kill your friends.	2.000000	{'neg': 0.48, 'neu': 0.204, 'pos': 0.316, 'com...
15002	i will kill that girl.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15003	i will kill that guy.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15004	i will kill your family.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...



15005	i will kill your father.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15006	i will kill this girl.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15007	i will kill this boys.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15008	i will kill the boy you love.	2.000000	{'neg': 0.364, 'neu': 0.31, 'pos': 0.326, 'com...
15009	i will kill anyone you love.	2.000000	{'neg': 0.395, 'neu': 0.252, 'pos': 0.353, 'co...
15010	i will kill you classmate.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...

```
#import sentiment analysis model
from nltk.sentiment.vader import SentimentIntensityAnalyzer
sid = SentimentIntensityAnalyzer()
df['sentiment_scores'] = df['text'].apply(lambda x: sid.polarity_scores(x))
df
```



	text	label	sentiment_scores
0	The weather is nice today.	0.000000	{'neg': 0.0, 'neu': 0.588, 'pos': 0.412, 'comp...
1	I need to buy some groceries.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
2	What time does the store open?	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
3	She is reading a book.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
4	The train arrives at 5 PM.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
5	I have a meeting in the afternoon.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
6	He enjoys playing football.	0.000000	{'neg': 0.0, 'neu': 0.282, 'pos': 0.718, 'comp...
7	The cat is sleeping on the couch.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
8	Water boils at 100 degrees Celsius.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
9	I like to listen to music.	0.000000	{'neg': 0.0, 'neu': 0.615, 'pos': 0.385, 'comp...
5000	You are an amazing person!	1.000000	{'neg': 0.0, 'neu': 0.494, 'pos': 0.506, 'comp...
5001	Keep up the great work!	1.000000	{'neg': 0.0, 'neu': 0.477, 'pos': 0.523, 'comp...
5002	Your kindness makes the world a better place.	1.000000	{'neg': 0.0, 'neu': 0.459, 'pos': 0.541, 'comp...
5003	Believe in yourself, you are capable of great ...	1.000000	{'neg': 0.0, 'neu': 0.511, 'pos': 0.489, 'comp...
5004	You bring joy to those around you.	1.000000	{'neg': 0.0, 'neu': 0.612, 'pos': 0.388, 'comp...
5005	Your hard work and dedication inspire others.	1.000000	{'neg': 0.139, 'neu': 0.495, 'pos': 0.366, 'co...
5006	Never stop chasing your dreams.	1.000000	{'neg': 0.0, 'neu': 0.395, 'pos': 0.605, 'comp...
5007	You have a wonderful heart.	1.000000	{'neg': 0.0, 'neu': 0.448, 'pos': 0.552, 'comp...
5008	Your positivity is contagious.	1.000000	{'neg': 0.312, 'neu': 0.26, 'pos': 0.429, 'com...
5009	Keep smiling, it brightens up everyone's day.	1.000000	{'neg': 0.0, 'neu': 0.476, 'pos': 0.524, 'comp...
10000	I will hunt you down and make you suffer.	2.000000	{'neg': 0.333, 'neu': 0.667, 'pos': 0.0, 'comp...
10001	You are the worst thing that ever happened to ...	2.000000	{'neg': 0.291, 'neu': 0.709, 'pos': 0.0, 'comp...
10002	People like you deserve to be erased from exis...	2.000000	{'neg': 0.0, 'neu': 0.762, 'pos': 0.238, 'comp...
10003	I will destroy everything you love.	2.000000	{'neg': 0.327, 'neu': 0.28, 'pos': 0.393, 'com...
10004	You should just disappear from this planet.	2.000000	{'neg': 0.241, 'neu': 0.759, 'pos': 0.0, 'comp...
10005	You are a worthless piece of trash.	2.000000	{'neg': 0.367, 'neu': 0.633, 'pos': 0.0, 'comp...
10006	Everyone hates you and always will.	2.000000	{'neg': 0.367, 'neu': 0.633, 'pos': 0.0, 'comp...
10007	i will kill you.	2.000000	{'neg': 0.701, 'neu': 0.299, 'pos': 0.0, 'comp...
10008	kill you till death.	2.000000	{'neg': 0.811, 'neu': 0.189, 'pos': 0.0, 'comp...
10009	i will beat you untill you bleed.	1.444444	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
10010	No one cares if you live or die.	2.000000	{'neg': 0.433, 'neu': 0.355, 'pos': 0.213, 'co...
10011	I swear I will make your life a living nightmare.	2.000000	{'neg': 0.167, 'neu': 0.833, 'pos': 0.0, 'comp...
10012	You are nothing but a failure and a burden.	2.000000	{'neg': 0.31, 'neu': 0.403, 'pos': 0.286, 'com...
10013	The world would be better off without you.	2.000000	{'neg': 0.0, 'neu': 0.707, 'pos': 0.293, 'comp...
10014	I will ruin you in every possible way.	2.000000	{'neg': 0.388, 'neu': 0.612, 'pos': 0.0, 'comp...
10015	You are the most disgusting person I've ever s...	2.000000	{'neg': 0.316, 'neu': 0.684, 'pos': 0.0, 'comp...
10016	You should be locked up and never let out.	2.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...
10017	I hope you experience the worst pain imaginable.	2.000000	{'neg': 0.517, 'neu': 0.28, 'pos': 0.203, 'com...
10018	If I see you, I won't hold back my anger.	2.000000	{'neg': 0.346, 'neu': 0.654, 'pos': 0.0, 'comp...
10019	You better watch your back.	2.000000	{'neg': 0.0, 'neu': 0.58, 'pos': 0.42, 'compou...
10020	I will make sure you regret everything.	2.000000	{'neg': 0.308, 'neu': 0.44, 'pos': 0.253, 'com...
10021	People like you should not exist.	2.000000	{'neg': 0.0, 'neu': 0.667, 'pos': 0.333, 'comp...
10022	You are a walking disaster, and everyone knows...	2.000000	{'neg': 0.369, 'neu': 0.631, 'pos': 0.0, 'comp...
14999	i will make you suffer and kill till death.	2.000000	{'neg': 0.708, 'neu': 0.292, 'pos': 0.0, 'comp...
15000	i will kill your parents.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15001	i will kill your friends.	2.000000	{'neg': 0.48, 'neu': 0.204, 'pos': 0.316, 'com...
15002	i will kill that girl.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15003	i will kill that guy.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15004	i will kill your family.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...

15005	i will kill your father.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15006	i will kill this girl.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15007	i will kill this boys.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...
15008	i will kill the boy you love.	2.000000	{'neg': 0.364, 'neu': 0.31, 'pos': 0.326, 'com...
15009	i will kill anyone you love.	2.000000	{'neg': 0.395, 'neu': 0.252, 'pos': 0.353, 'co...
15010	i will kill you classmate.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...

```
#Sentimental analysis split the data set
```

```
df['compound'] = df['sentiment_scores'].apply(lambda x: x['compound'])  
df
```



	text	label	sentiment_scores	compound
0	The weather is nice today.	0.000000	{'neg': 0.0, 'neu': 0.588, 'pos': 0.412, 'comp...	0.4215
1	I need to buy some groceries.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000
2	What time does the store open?	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000
3	She is reading a book.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000
4	The train arrives at 5 PM.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000
5	I have a meeting in the afternoon.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000
6	He enjoys playing football.	0.000000	{'neg': 0.0, 'neu': 0.282, 'pos': 0.718, 'comp...	0.6249
7	The cat is sleeping on the couch.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000
8	Water boils at 100 degrees Celsius.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000
9	I like to listen to music.	0.000000	{'neg': 0.0, 'neu': 0.615, 'pos': 0.385, 'comp...	0.3612
5000	You are an amazing person!	1.000000	{'neg': 0.0, 'neu': 0.494, 'pos': 0.506, 'comp...	0.6239
5001	Keep up the great work!	1.000000	{'neg': 0.0, 'neu': 0.477, 'pos': 0.523, 'comp...	0.6588
5002	Your kindness makes the world a better place.	1.000000	{'neg': 0.0, 'neu': 0.459, 'pos': 0.541, 'comp...	0.7096
5003	Believe in yourself, you are capable of great ...	1.000000	{'neg': 0.0, 'neu': 0.511, 'pos': 0.489, 'comp...	0.7717
5004	You bring joy to those around you.	1.000000	{'neg': 0.0, 'neu': 0.612, 'pos': 0.388, 'comp...	0.5859
5005	Your hard work and dedication inspire others.	1.000000	{'neg': 0.139, 'neu': 0.495, 'pos': 0.366, 'co...	0.5106
5006	Never stop chasing your dreams.	1.000000	{'neg': 0.0, 'neu': 0.395, 'pos': 0.605, 'comp...	0.5556
5007	You have a wonderful heart.	1.000000	{'neg': 0.0, 'neu': 0.448, 'pos': 0.552, 'comp...	0.5719
5008	Your positivity is contagious.	1.000000	{'neg': 0.312, 'neu': 0.26, 'pos': 0.429, 'com...	0.2263
5009	Keep smiling, it brightens up everyone's day.	1.000000	{'neg': 0.0, 'neu': 0.476, 'pos': 0.524, 'comp...	0.6705
10000	I will hunt you down and make you suffer.	2.000000	{'neg': 0.333, 'neu': 0.667, 'pos': 0.0, 'comp...	-0.5423
10001	You are the worst thing that ever happened to ...	2.000000	{'neg': 0.291, 'neu': 0.709, 'pos': 0.0, 'comp...	-0.6249
10002	People like you deserve to be erased from exis...	2.000000	{'neg': 0.0, 'neu': 0.762, 'pos': 0.238, 'comp...	0.3612
10003	I will destroy everything you love.	2.000000	{'neg': 0.327, 'neu': 0.28, 'pos': 0.393, 'com...	0.1779
10004	You should just disappear from this planet.	2.000000	{'neg': 0.241, 'neu': 0.759, 'pos': 0.0, 'comp...	-0.2263
10005	You are a worthless piece of trash.	2.000000	{'neg': 0.367, 'neu': 0.633, 'pos': 0.0, 'comp...	-0.4404
10006	Everyone hates you and always will.	2.000000	{'neg': 0.367, 'neu': 0.633, 'pos': 0.0, 'comp...	-0.4404
10007	i will kill you.	2.000000	{'neg': 0.701, 'neu': 0.299, 'pos': 0.0, 'comp...	-0.6908
10008	kill you till death.	2.000000	{'neg': 0.811, 'neu': 0.189, 'pos': 0.0, 'comp...	-0.8625
10009	i will beat you untill you bleed.	1.444444	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000
10010	No one cares if you live or die.	2.000000	{'neg': 0.433, 'neu': 0.355, 'pos': 0.213, 'co...	-0.4767
10011	I swear I will make your life a living nightmare.	2.000000	{'neg': 0.167, 'neu': 0.833, 'pos': 0.0, 'comp...	-0.0516
10012	You are nothing but a failure and a burden.	2.000000	{'neg': 0.31, 'neu': 0.403, 'pos': 0.286, 'com...	-0.0765
10013	The world would be better off without you.	2.000000	{'neg': 0.0, 'neu': 0.707, 'pos': 0.293, 'comp...	0.4404
10014	I will ruin you in every possible way.	2.000000	{'neg': 0.388, 'neu': 0.612, 'pos': 0.0, 'comp...	-0.5859
10015	You are the most disgusting person I've ever s...	2.000000	{'neg': 0.316, 'neu': 0.684, 'pos': 0.0, 'comp...	-0.5709
10016	You should be locked up and never let out.	2.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000
10017	I hope you experience the worst pain imaginable.	2.000000	{'neg': 0.517, 'neu': 0.28, 'pos': 0.203, 'com...	-0.6705
10018	If I see you, I won't hold back my anger.	2.000000	{'neg': 0.346, 'neu': 0.654, 'pos': 0.0, 'comp...	-0.5719
10019	You better watch your back.	2.000000	{'neg': 0.0, 'neu': 0.58, 'pos': 0.42, 'compou...	0.4404
10020	I will make sure you regret everything.	2.000000	{'neg': 0.308, 'neu': 0.44, 'pos': 0.253, 'com...	-0.1280
10021	People like you should not exist.	2.000000	{'neg': 0.0, 'neu': 0.667, 'pos': 0.333, 'comp...	0.3612
10022	You are a walking disaster, and everyone knows...	2.000000	{'neg': 0.369, 'neu': 0.631, 'pos': 0.0, 'comp...	-0.6249
14999	i will make you suffer and kill till death.	2.000000	{'neg': 0.708, 'neu': 0.292, 'pos': 0.0, 'comp...	-0.9201
15000	i will kill your parents.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908
15001	i will kill your friends.	2.000000	{'neg': 0.48, 'neu': 0.204, 'pos': 0.316, 'com...	-0.3818
15002	i will kill that girl.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908
15003	i will kill that guy.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908
15004	i will kill your family.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908

15005	i will kill your father.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908
15006	i will kill this girl.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908
15007	i will kill this boys.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908
15008	i will kill the boy you love.	2.000000	{'neg': 0.364, 'neu': 0.31, 'pos': 0.326, 'com...	-0.1280
15009	i will kill anyone you love.	2.000000	{'neg': 0.395, 'neu': 0.252, 'pos': 0.353, 'co...	-0.1280
15010	i will kill you classmate.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908

```
#split the dataset
```

```
df['sentiment_label'] = df['compound'].apply(lambda x: 'positive' if x >= 0.05 else ('negative' if x <= -0.05 else 'neutral'))
df
```



	text	label	sentiment_scores	compound	sentiment_label
0	The weather is nice today.	0.000000	{'neg': 0.0, 'neu': 0.588, 'pos': 0.412, 'comp...	0.4215	positive
1	I need to buy some groceries.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
2	What time does the store open?	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
3	She is reading a book.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
4	The train arrives at 5 PM.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
5	I have a meeting in the afternoon.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
6	He enjoys playing football.	0.000000	{'neg': 0.0, 'neu': 0.282, 'pos': 0.718, 'comp...	0.6249	positive
7	The cat is sleeping on the couch.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
8	Water boils at 100 degrees Celsius.	0.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
9	I like to listen to music.	0.000000	{'neg': 0.0, 'neu': 0.615, 'pos': 0.385, 'comp...	0.3612	positive
5000	You are an amazing person!	1.000000	{'neg': 0.0, 'neu': 0.494, 'pos': 0.506, 'comp...	0.6239	positive
5001	Keep up the great work!	1.000000	{'neg': 0.0, 'neu': 0.477, 'pos': 0.523, 'comp...	0.6588	positive
5002	Your kindness makes the world a better place.	1.000000	{'neg': 0.0, 'neu': 0.459, 'pos': 0.541, 'comp...	0.7096	positive
5003	Believe in yourself, you are capable of great ...	1.000000	{'neg': 0.0, 'neu': 0.511, 'pos': 0.489, 'comp...	0.7717	positive
5004	You bring joy to those around you.	1.000000	{'neg': 0.0, 'neu': 0.612, 'pos': 0.388, 'comp...	0.5859	positive
5005	Your hard work and dedication inspire others.	1.000000	{'neg': 0.139, 'neu': 0.495, 'pos': 0.366, 'co...	0.5106	positive
5006	Never stop chasing your dreams.	1.000000	{'neg': 0.0, 'neu': 0.395, 'pos': 0.605, 'comp...	0.5556	positive
5007	You have a wonderful heart.	1.000000	{'neg': 0.0, 'neu': 0.448, 'pos': 0.552, 'comp...	0.5719	positive
5008	Your positivity is contagious.	1.000000	{'neg': 0.312, 'neu': 0.26, 'pos': 0.429, 'com...	0.2263	positive
5009	Keep smiling, it brightens up everyone's day.	1.000000	{'neg': 0.0, 'neu': 0.476, 'pos': 0.524, 'comp...	0.6705	positive
10000	I will hunt you down and make you suffer.	2.000000	{'neg': 0.333, 'neu': 0.667, 'pos': 0.0, 'comp...	-0.5423	negative
10001	You are the worst thing that ever happened to ...	2.000000	{'neg': 0.291, 'neu': 0.709, 'pos': 0.0, 'comp...	-0.6249	negative
10002	People like you deserve to be erased from exis...	2.000000	{'neg': 0.0, 'neu': 0.762, 'pos': 0.238, 'comp...	0.3612	positive
10003	I will destroy everything you love.	2.000000	{'neg': 0.327, 'neu': 0.28, 'pos': 0.393, 'com...	0.1779	positive
10004	You should just disappear from this planet.	2.000000	{'neg': 0.241, 'neu': 0.759, 'pos': 0.0, 'comp...	-0.2263	negative
10005	You are a worthless piece of trash.	2.000000	{'neg': 0.367, 'neu': 0.633, 'pos': 0.0, 'comp...	-0.4404	negative
10006	Everyone hates you and always will.	2.000000	{'neg': 0.367, 'neu': 0.633, 'pos': 0.0, 'comp...	-0.4404	negative
10007	i will kill you.	2.000000	{'neg': 0.701, 'neu': 0.299, 'pos': 0.0, 'comp...	-0.6908	negative
10008	kill you till death.	2.000000	{'neg': 0.811, 'neu': 0.189, 'pos': 0.0, 'comp...	-0.8625	negative
10009	i will beat you untill you bleed.	1.444444	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
10010	No one cares if you live or die.	2.000000	{'neg': 0.433, 'neu': 0.355, 'pos': 0.213, 'co...	-0.4767	negative
10011	I swear I will make your life a living nightmare.	2.000000	{'neg': 0.167, 'neu': 0.833, 'pos': 0.0, 'comp...	-0.0516	negative
10012	You are nothing but a failure and a burden.	2.000000	{'neg': 0.31, 'neu': 0.403, 'pos': 0.286, 'com...	-0.0765	negative
10013	The world would be better off without you.	2.000000	{'neg': 0.0, 'neu': 0.707, 'pos': 0.293, 'comp...	0.4404	positive
10014	I will ruin you in every possible way.	2.000000	{'neg': 0.388, 'neu': 0.612, 'pos': 0.0, 'comp...	-0.5859	negative
10015	You are the most disgusting person I've ever s...	2.000000	{'neg': 0.316, 'neu': 0.684, 'pos': 0.0, 'comp...	-0.5709	negative
10016	You should be locked up and never let out.	2.000000	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
10017	I hope you experience the worst pain imaginable.	2.000000	{'neg': 0.517, 'neu': 0.28, 'pos': 0.203, 'com...	-0.6705	negative
10018	If I see you, I won't hold back my anger.	2.000000	{'neg': 0.346, 'neu': 0.654, 'pos': 0.0, 'comp...	-0.5719	negative
10019	You better watch your back.	2.000000	{'neg': 0.0, 'neu': 0.58, 'pos': 0.42, 'compou...	0.4404	positive
10020	I will make sure you regret everything.	2.000000	{'neg': 0.308, 'neu': 0.44, 'pos': 0.253, 'com...	-0.1280	negative
10021	People like you should not exist.	2.000000	{'neg': 0.0, 'neu': 0.667, 'pos': 0.333, 'comp...	0.3612	positive
10022	You are a walking disaster, and everyone knows...	2.000000	{'neg': 0.369, 'neu': 0.631, 'pos': 0.0, 'comp...	-0.6249	negative
14999	i will make you suffer and kill till death.	2.000000	{'neg': 0.708, 'neu': 0.292, 'pos': 0.0, 'comp...	-0.9201	negative
15000	i will kill your parents.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15001	i will kill your friends.	2.000000	{'neg': 0.48, 'neu': 0.204, 'pos': 0.316, 'com...	-0.3818	negative
15002	i will kill that girl.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15003	i will kill that guy.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15004	i will kill your family.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative

15005	i will kill your father.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15006	i will kill this girl.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15007	i will kill this boys.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15008	i will kill the boy you love.	2.000000	{'neg': 0.364, 'neu': 0.31, 'pos': 0.326, 'com...	-0.1280	negative
15009	i will kill anyone you love.	2.000000	{'neg': 0.395, 'neu': 0.252, 'pos': 0.353, 'co...	-0.1280	negative
15010	i will kill you classmate.	2.000000	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative

#target variable

```
df['label'] = df['sentiment_label'].apply(lambda x: 1 if x == 'positive' else (0 if x == 'neutral' else -1))
df
```



	text	label	sentiment_scores	compound	sentiment_label
0	The weather is nice today.	1	{'neg': 0.0, 'neu': 0.588, 'pos': 0.412, 'comp...	0.4215	positive
1	I need to buy some groceries.	0	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
2	What time does the store open?	0	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
3	She is reading a book.	0	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
4	The train arrives at 5 PM.	0	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
5	I have a meeting in the afternoon.	0	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
6	He enjoys playing football.	1	{'neg': 0.0, 'neu': 0.282, 'pos': 0.718, 'comp...	0.6249	positive
7	The cat is sleeping on the couch.	0	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
8	Water boils at 100 degrees Celsius.	0	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
9	I like to listen to music.	1	{'neg': 0.0, 'neu': 0.615, 'pos': 0.385, 'comp...	0.3612	positive
5000	You are an amazing person!	1	{'neg': 0.0, 'neu': 0.494, 'pos': 0.506, 'comp...	0.6239	positive
5001	Keep up the great work!	1	{'neg': 0.0, 'neu': 0.477, 'pos': 0.523, 'comp...	0.6588	positive
5002	Your kindness makes the world a better place.	1	{'neg': 0.0, 'neu': 0.459, 'pos': 0.541, 'comp...	0.7096	positive
5003	Believe in yourself, you are capable of great ...	1	{'neg': 0.0, 'neu': 0.511, 'pos': 0.489, 'comp...	0.7717	positive
5004	You bring joy to those around you.	1	{'neg': 0.0, 'neu': 0.612, 'pos': 0.388, 'comp...	0.5859	positive
5005	Your hard work and dedication inspire others.	1	{'neg': 0.139, 'neu': 0.495, 'pos': 0.366, 'co...	0.5106	positive
5006	Never stop chasing your dreams.	1	{'neg': 0.0, 'neu': 0.395, 'pos': 0.605, 'comp...	0.5556	positive
5007	You have a wonderful heart.	1	{'neg': 0.0, 'neu': 0.448, 'pos': 0.552, 'comp...	0.5719	positive
5008	Your positivity is contagious.	1	{'neg': 0.312, 'neu': 0.26, 'pos': 0.429, 'com...	0.2263	positive
5009	Keep smiling, it brightens up everyone's day.	1	{'neg': 0.0, 'neu': 0.476, 'pos': 0.524, 'comp...	0.6705	positive
10000	I will hunt you down and make you suffer.	-1	{'neg': 0.333, 'neu': 0.667, 'pos': 0.0, 'comp...	-0.5423	negative
10001	You are the worst thing that ever happened to ...	-1	{'neg': 0.291, 'neu': 0.709, 'pos': 0.0, 'comp...	-0.6249	negative
10002	People like you deserve to be erased from exis...	1	{'neg': 0.0, 'neu': 0.762, 'pos': 0.238, 'comp...	0.3612	positive
10003	I will destroy everything you love.	1	{'neg': 0.327, 'neu': 0.28, 'pos': 0.393, 'com...	0.1779	positive
10004	You should just disappear from this planet.	-1	{'neg': 0.241, 'neu': 0.759, 'pos': 0.0, 'comp...	-0.2263	negative
10005	You are a worthless piece of trash.	-1	{'neg': 0.367, 'neu': 0.633, 'pos': 0.0, 'comp...	-0.4404	negative
10006	Everyone hates you and always will.	-1	{'neg': 0.367, 'neu': 0.633, 'pos': 0.0, 'comp...	-0.4404	negative
10007	i will kill you.	-1	{'neg': 0.701, 'neu': 0.299, 'pos': 0.0, 'comp...	-0.6908	negative
10008	kill you till death.	-1	{'neg': 0.811, 'neu': 0.189, 'pos': 0.0, 'comp...	-0.8625	negative
10009	i will beat you untill you bleed.	0	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
10010	No one cares if you live or die.	-1	{'neg': 0.433, 'neu': 0.355, 'pos': 0.213, 'co...	-0.4767	negative
10011	I swear I will make your life a living nightmare.	-1	{'neg': 0.167, 'neu': 0.833, 'pos': 0.0, 'comp...	-0.0516	negative
10012	You are nothing but a failure and a burden.	-1	{'neg': 0.31, 'neu': 0.403, 'pos': 0.286, 'com...	-0.0765	negative
10013	The world would be better off without you.	1	{'neg': 0.0, 'neu': 0.707, 'pos': 0.293, 'comp...	0.4404	positive
10014	I will ruin you in every possible way.	-1	{'neg': 0.388, 'neu': 0.612, 'pos': 0.0, 'comp...	-0.5859	negative
10015	You are the most disgusting person I've ever s...	-1	{'neg': 0.316, 'neu': 0.684, 'pos': 0.0, 'comp...	-0.5709	negative
10016	You should be locked up and never let out.	0	{'neg': 0.0, 'neu': 1.0, 'pos': 0.0, 'compound...	0.0000	neutral
10017	I hope you experience the worst pain imaginable.	-1	{'neg': 0.517, 'neu': 0.28, 'pos': 0.203, 'com...	-0.6705	negative
10018	If I see you, I won't hold back my anger.	-1	{'neg': 0.346, 'neu': 0.654, 'pos': 0.0, 'comp...	-0.5719	negative
10019	You better watch your back.	1	{'neg': 0.0, 'neu': 0.58, 'pos': 0.42, 'compou...	0.4404	positive
10020	I will make sure you regret everything.	-1	{'neg': 0.308, 'neu': 0.44, 'pos': 0.253, 'com...	-0.1280	negative
10021	People like you should not exist.	1	{'neg': 0.0, 'neu': 0.667, 'pos': 0.333, 'comp...	0.3612	positive
10022	You are a walking disaster, and everyone knows...	-1	{'neg': 0.369, 'neu': 0.631, 'pos': 0.0, 'comp...	-0.6249	negative
14999	i will make you suffer and kill till death.	-1	{'neg': 0.708, 'neu': 0.292, 'pos': 0.0, 'comp...	-0.9201	negative
15000	i will kill your parents.	-1	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15001	i will kill your friends.	-1	{'neg': 0.48, 'neu': 0.204, 'pos': 0.316, 'com...	-0.3818	negative
15002	i will kill that girl.	-1	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15003	i will kill that guy.	-1	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15004	i will kill your family.	-1	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative

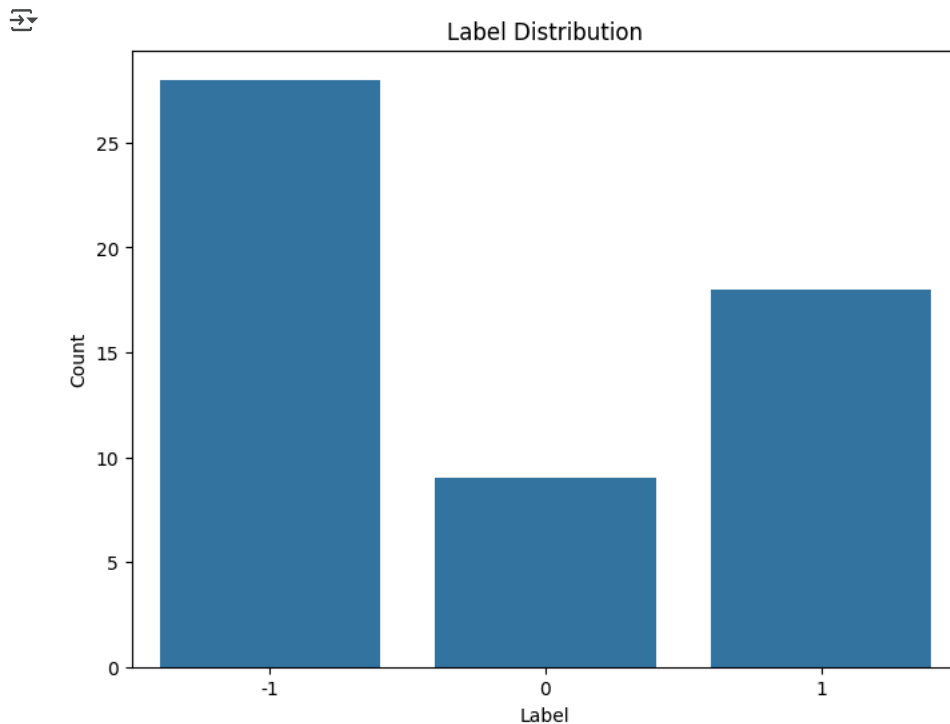


15005	i will kill your father.	-1	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15006	i will kill this girl.	-1	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15007	i will kill this boys.	-1	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative
15008	i will kill the boy you love.	-1	{'neg': 0.364, 'neu': 0.31, 'pos': 0.326, 'com...	-0.1280	negative
15009	i will kill anyone you love.	-1	{'neg': 0.395, 'neu': 0.252, 'pos': 0.353, 'co...	-0.1280	negative
15010	i will kill you classmate.	-1	{'neg': 0.61, 'neu': 0.39, 'pos': 0.0, 'compou...	-0.6908	negative

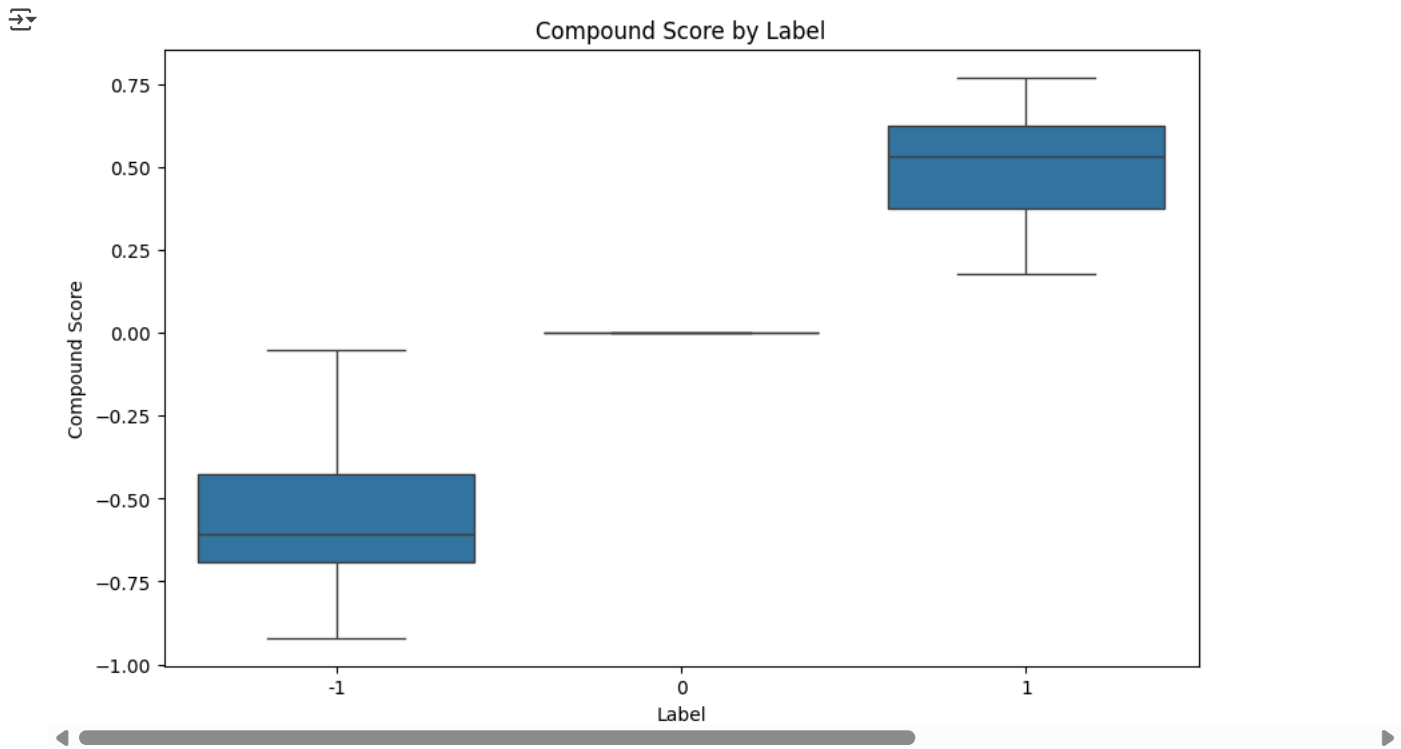
```
#univariate analysis
df['label'].value_counts()
```

	count
label	
-1	28
1	18
0	9

```
#chart
plt.figure(figsize=(8, 6))
sns.countplot(x='label', data=df)
plt.title('Label Distribution')
plt.xlabel('Label')
plt.ylabel('Count')
plt.show()
```



```
#bivariate analysis
plt.figure(figsize=(10, 6))
sns.boxplot(x='label', y='compound', data=df)
plt.title('Compound Score by Label')
plt.xlabel('Label')
plt.ylabel('Compound Score')
plt.show()
```



```
#split the train and test data
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(df['text'], df['label'], test_size=0.2, random_state=42)
```

```
x=df['text']
y=df['label']
```

x



text

0 The weather is nice today.

1 I need to buy some groceries.

2 What time does the store open?

3 She is reading a book.

4 The train arrives at 5 PM.

5 I have a meeting in the afternoon.

6 He enjoys playing football.

7 The cat is sleeping on the couch.

8 Water boils at 100 degrees Celsius.

9 I like to listen to music.

5000 You are an amazing person!

5001 Keep up the great work!

5002 Your kindness makes the world a better place.

5003 Believe in yourself, you are capable of great ...

5004 You bring joy to those around you.

5005 Your hard work and dedication inspire others.

5006 Never stop chasing your dreams.

5007 You have a wonderful heart.

5008 Your positivity is contagious.

5009 Keep smiling, it brightens up everyone's day.

10000 I will hunt you down and make you suffer.

10001 You are the worst thing that ever happened to ...

10002 People like you deserve to be erased from exis...

10003 I will destroy everything you love.

10004 You should just disappear from this planet.

10005 You are a worthless piece of trash.

10006 Everyone hates you and always will.

10007 i will kill you.

10008 kill you till death.

10009 i will beat you untill you bleed.

10010 No one cares if you live or die.

10011 I swear I will make your life a living nightmare.

10012 You are nothing but a failure and a burden.

10013 The world would be better off without you.

10014 I will ruin you in every possible way.

10015 You are the most disgusting person I've ever s...

10016 You should be locked up and never let out.

10017 I hope you experience the worst pain imaginable.

10018 If I see you, I won't hold back my anger.

10019 You better watch your back.

10020 I will make sure you regret everything.

10021 People like you should not exist.

10022 You are a walking disaster, and everyone knows...

14999 i will make you suffer and kill till death.

15000 i will kill your parents.

15001 i will kill your friends.

15002 i will kill that girl.

15003 i will kill that guy.

15004 i will kill your family.

15005	i will kill your father.
15006	i will kill this girl.
15007	i will kill this boys.
15008	i will kill the boy you love.
15009	i will kill anyone you love.
15010	i will kill you classmate.

turn sheet



y



label

0	1
1	0
2	0
3	0
4	0
5	0
6	1
7	0
8	0
9	1
5000	1
5001	1
5002	1
5003	1
5004	1
5005	1
5006	1
5007	1
5008	1
5009	1
10000	-1
10001	-1
10002	1
10003	1
10004	-1
10005	-1
10006	-1
10007	-1
10008	-1
10009	0
10010	-1
10011	-1
10012	-1
10013	1
10014	-1
10015	-1
10016	0
10017	-1
10018	-1
10019	1
10020	-1
10021	1
10022	-1
14999	-1
15000	-1
15001	-1
15002	-1
15003	-1
15004	-1

```
15005 -1
15006 -1
15007 -1
15008 -1
15009 -1
15010 -1
```

▶

```
#model building
from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score, classification_report

#knn clustering
from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import accuracy_score, classification_report
vectorizer = TfidfVectorizer()
X_train_tfidf = vectorizer.fit_transform(X_train)
X_test_tfidf = vectorizer.transform(X_test)

#knn cluster
model = KNeighborsClassifier(n_neighbors=5)
model.fit(X_train_tfidf, y_train)
y_pred = model.predict(X_test_tfidf)
print( "y_pred",y_pred)

↵ y_pred [-1  1 -1 -1  1 -1 -1 -1 -1 -1]

from sklearn.cluster import KMeans

# Assuming 'X_train_tfidf' is your preprocessed data (as in your previous code)
kmeans = KMeans(n_clusters=3, random_state=0) # Choose an appropriate number of clusters
kmeans.fit(X_train_tfidf)
cluster_labels = kmeans.labels_

# You can now analyze the clusters
# For example, print the cluster labels for each data point in X_train
print(cluster_labels)

# Or, analyze the cluster centers
kmeans.cluster_centers_

↵      0.      , 0.04115031, 0.      , 0.02332121, 0.      ,
      0.      , 0.      , 0.      , 0.02758598, 0.02934182,
```

```

0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.06423999, 0.      , 0.06423999,
0.      , 0.11523995, 0.      , 0.      , 0.06054593,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.41493805, 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.05157494,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.06423999, 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.10292014,
0.      , 0.      , 0.09821531, 0.      , 0.05787264,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.      , 0.      , 0.33490709,
0.      , 0.      , 0.      , 0.      , 0.      ,
0.      , 0.      , 0.      , 0.11282434, 0.12777149]]))

```

```
from sklearn.metrics import silhouette_score
```

```
# Calculate Silhouette Score
```

```
silhouette_avg = silhouette_score(X_train_tfidf, cluster_labels)
```

```
print(f"Silhouette Score: {silhouette_avg}")
```

```
→ Silhouette Score: 0.043105747928963954
```

```
# Evaluate KNN Classification
```

```
from sklearn.metrics import accuracy_score, precision_score, recall_score, f1_score, confusion_matrix
```

```
accuracy = accuracy_score(y_test, y_pred)
```

```
print(f"Accuracy: {accuracy}")
```

```
precision = precision_score(y_test, y_pred, average='weighted') # Use 'weighted' for multi-class
```

```
print(f"Precision: {precision}")
```

```
recall = recall_score(y_test, y_pred, average='weighted')
```

```
print(f"Recall: {recall}")
```

```
f1 = f1_score(y_test, y_pred, average='weighted')
```

```
print(f"F1-score: {f1}")
```

```
conf_matrix = confusion_matrix(y_test, y_pred)
```

```
print(f"Confusion Matrix:\n{conf_matrix}")
```

```
print(classification_report(y_test, y_pred))
```

```
→ Accuracy: 0.6363636363636364
```

```
Precision: 0.5454545454545454
```

```
Recall: 0.6363636363636364
```

```
F1-score: 0.5575757575757576
```

```
Confusion Matrix:
```

```
[[6 0 0]
```

```
 [0 0 1]
```

```
 [3 0 1]]
```

	precision	recall	f1-score	support
-1	0.67	1.00	0.80	6
0	0.00	0.00	0.00	1
1	0.50	0.25	0.33	4
accuracy			0.64	11
macro avg	0.39	0.42	0.38	11
weighted avg	0.55	0.64	0.56	11

```

/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

```

```

from sklearn.feature_extraction.text import TfidfVectorizer
from sklearn.ensemble import GradientBoostingClassifier
from sklearn.model_selection import train_test_split
from sklearn.metrics import classification_report, accuracy_score
import pandas as pd

# Load dataset
df = pd.read_csv("/content/combined.csv")

# Drop missing and duplicate values
df = df.dropna(subset=["label"])
df = df.drop_duplicates(subset=["text", "label"]).reset_index(drop=True)

# TF-IDF Vectorization
vectorizer = TfidfVectorizer()
X = vectorizer.fit_transform(df["text"])

# Labels (no need to scale for classification)
y = df["label"]

# Train-test split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Gradient Boosting Classifier
model = GradientBoostingClassifier()
model.fit(X_train, y_train)

# Predictions and Evaluation
y_pred = model.predict(X_test)
print("Accuracy:", accuracy_score(y_test, y_pred))
print("\nClassification Report:\n", classification_report(y_test, y_pred))

```

→ Accuracy: 0.6363636363636364

Classification Report:				
	precision	recall	f1-score	support
0.0	0.50	1.00	0.67	2
1.0	0.00	0.00	0.00	4
2.0	0.71	1.00	0.83	5
accuracy			0.64	11
macro avg	0.40	0.67	0.50	11
weighted avg	0.42	0.64	0.50	11

```

/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

```

```

from sklearn.metrics import classification_report, accuracy_score

# After predictions
print("Accuracy:", accuracy_score(y_test, y_pred))
print("\nClassification Report:\n", classification_report(y_test, y_pred))

```

→ Accuracy: 0.6363636363636364

Classification Report:				
	precision	recall	f1-score	support
0.0	0.50	1.00	0.67	2
1.0	0.00	0.00	0.00	4
2.0	0.71	1.00	0.83	5
accuracy			0.64	11
macro avg	0.40	0.67	0.50	11
weighted avg	0.42	0.64	0.50	11

```

/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))

```

```
import numpy as np
```



```
# Get feature importance from the model
importances = model.feature_importances_

# Match them to feature names from TF-IDF
feature_names = vectorizer.get_feature_names_out()
important_features = sorted(zip(importances, feature_names), reverse=True)

# Show top 10 important words
print("Top 10 important features:")
for score, name in important_features[:10]:
    print(f"{name}: {score:.4f}")
```

```
↗ Top 10 important features:
```

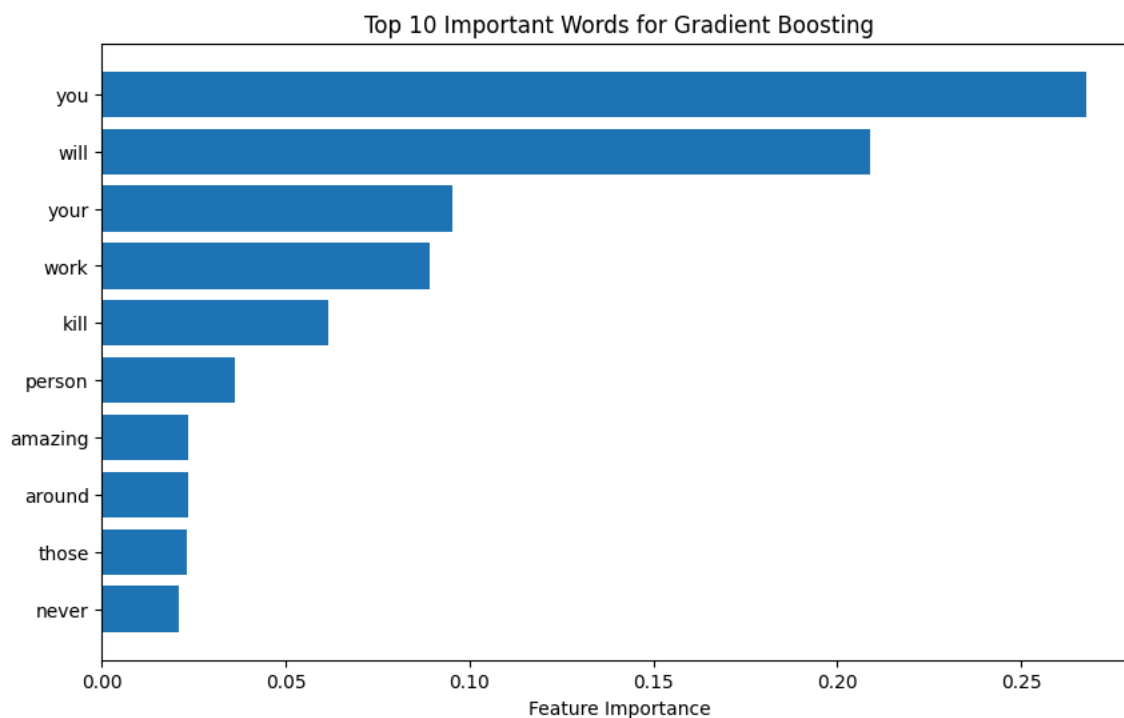
```
you: 0.2679
will: 0.2089
your: 0.0955
work: 0.0892
kill: 0.0616
person: 0.0360
amazing: 0.0234
around: 0.0233
those: 0.0232
never: 0.0208
```

```
import matplotlib.pyplot as plt
```

```
# Plot top 10 important features
top_features = important_features[:10]
names = [name for _, name in top_features]
scores = [score for score, _ in top_features]
```

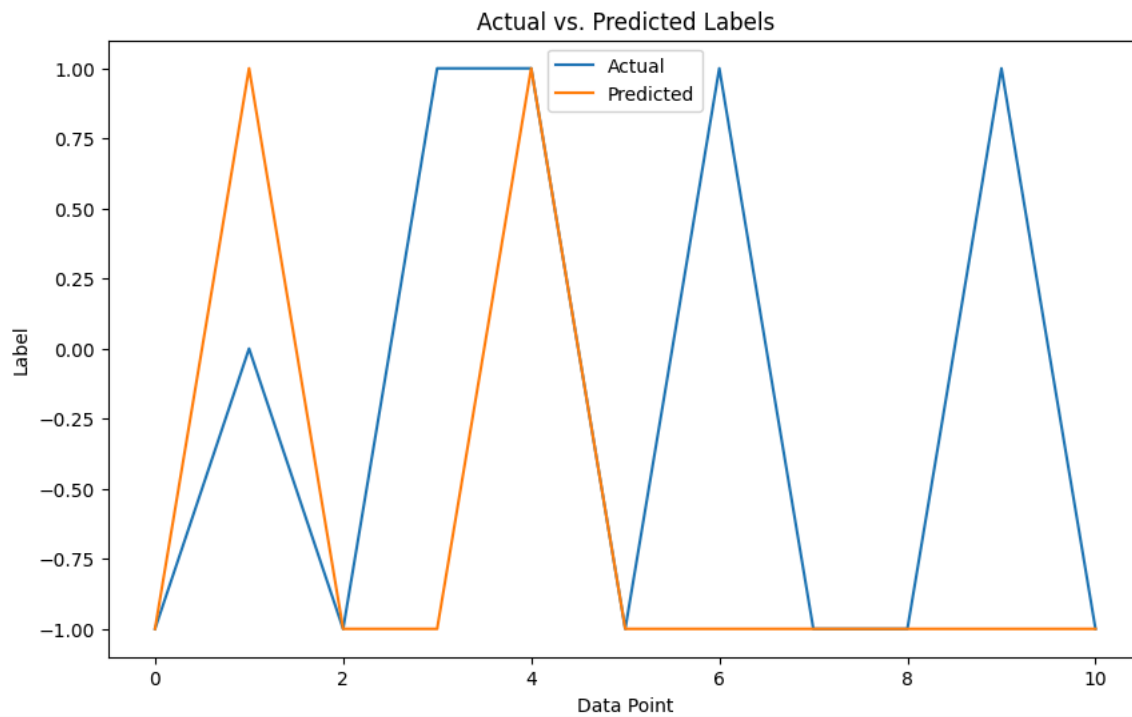
```
plt.figure(figsize=(10, 6))
plt.barh(names[::-1], scores[::-1])
plt.xlabel("Feature Importance")
plt.title("Top 10 Important Words for Gradient Boosting")
plt.show()
```

```
↗
```



```
import matplotlib.pyplot as plt
```

```
# Assuming y_test and y_pred are already defined from your model's predictions
plt.figure(figsize=(10, 6))
plt.plot(y_test.values, label='Actual')
plt.plot(y_pred, label='Predicted')
plt.xlabel('Data Point')
plt.ylabel('Label')
plt.title('Actual vs. Predicted Labels')
plt.legend()
plt.show()
```



```
# Accuracy
accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy: {accuracy}")

# Classification Report
print(classification_report(y_test, y_pred))

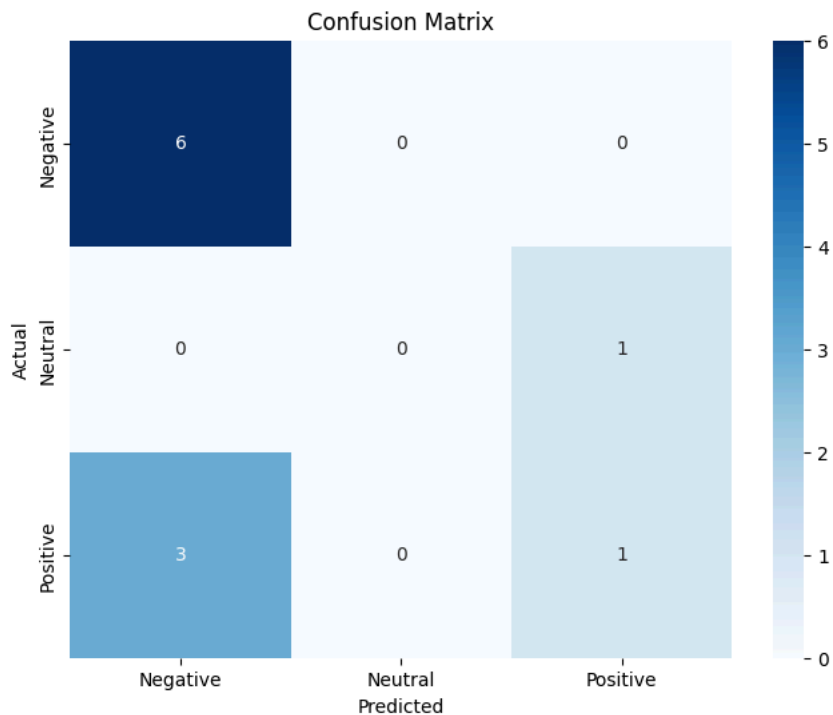
# Confusion Matrix
cm = confusion_matrix(y_test, y_pred)
plt.figure(figsize=(8, 6))
sns.heatmap(cm, annot=True, fmt="d", cmap="Blues",
            xticklabels=['Negative', 'Neutral', 'Positive'],
            yticklabels=['Negative', 'Neutral', 'Positive']) # Assuming labels are -1, 0, 1
plt.xlabel('Predicted')
plt.ylabel('Actual')
plt.title('Confusion Matrix')
plt.show()
```

```
Accuracy: 0.6363636363636364
precision    recall  f1-score   support

   -1         0.67        1.00        0.80         6
    0         0.00        0.00        0.00         1
    1         0.50        0.25        0.33         4

 accuracy          0.64         11
macro avg          0.39        0.42         11
weighted avg          0.55        0.64         11
```

```
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
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/usr/local/lib/python3.11/dist-packages/sklearn/metrics/_classification.py:1565: UndefinedMetricWarning: Precision is ill-defined ar
_warn_prf(average, modifier, f"{metric.capitalize()} is", len(result))
```



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