```python
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from wordcloud import WordCloud
from textblob import TextBlob
df=pd.read_csv('Twitter.csv')
df.head()
```

|	Tweet_ID	Topic	Sentiment	Tweet
0	3364	Facebook	Irrelevant	I mentioned on Facebook that I was struggling ...
1	352	Amazon	Neutral	BBC News - Amazon boss Jeff Bezos rejects clai...
2	8312	Microsoft	Negative	@Microsoft Why do I pay for WORD when it funct...
3	4371	CS-GO	Negative	CSGO matchmaking is so full of closet hacking,...
4	4433	Google	Neutral	Now the President is slapping Americans in the...

```python
df=df.dropna(subset=['Tweet'])
```

```python
def get_sentiment(text):
  return TextBlob(text).sentiment.polarity
df['sentiment']=df['Tweet'].apply(get_sentiment)
df['sentiment_label'] = df['sentiment'].apply(lambda x: 'Positive' if x > 0 else ('Negative' if x < 0 else 'Neutral'))
```

```python
plt.figure(figsize=(8,6))
sns.countplot(x='sentiment_label',data=df,palette='coolwarm')
plt.title('Sentiment Distribution')
plt.xlabel('Sentiment')
plt.ylabel('Count')
plt.show()
```

```
<ipython-input-5-8c3c08627123>:2: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14.0. Assign the `x` variable to
 sns.countplot(x='sentiment_label',data=df,palette='coolwarm')
```


Sentiment Distribution
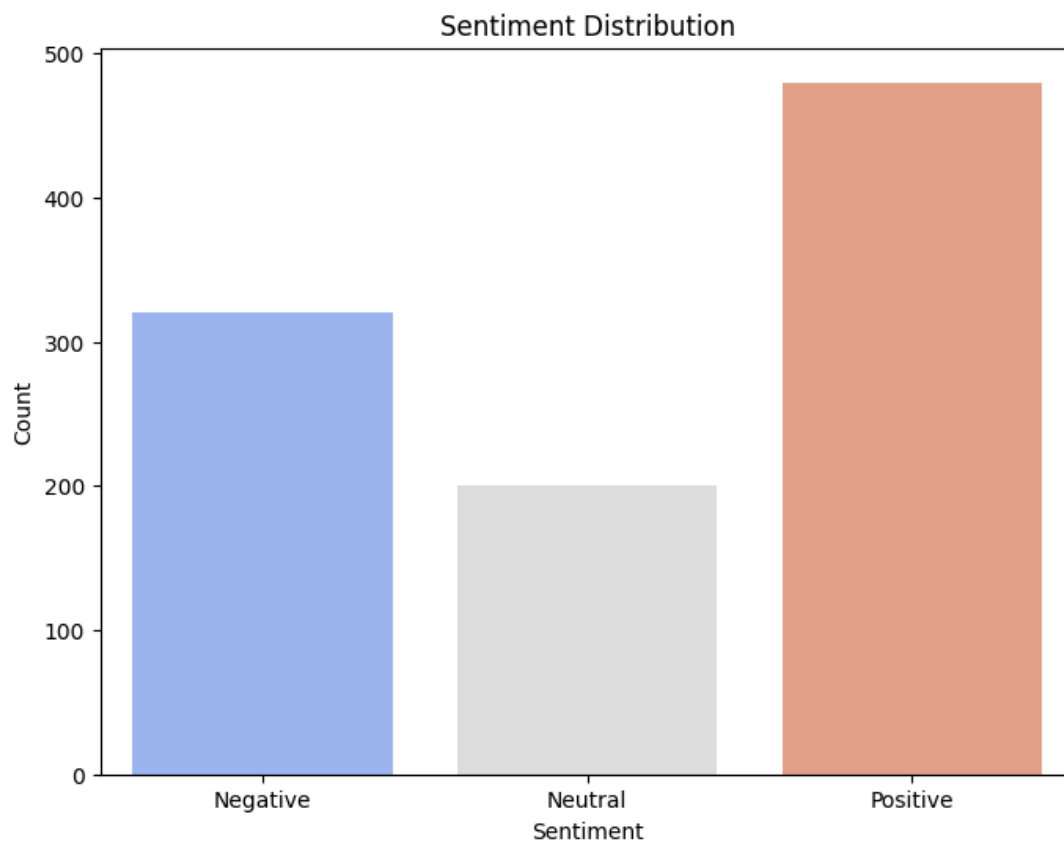
```
positive_tweets=df[df['sentiment_label']=='Positive']['Tweet']
negative_tweets = df[df['sentiment_label'] == 'Negative']['Tweet']


positive_words=' '.join(positive_tweets)
wordcloud_positive = WordCloud(width=800, height=400, background_color='white').generate(positive_words)


plt.figure(figsize=(10,8))
plt.imshow(wordcloud_positive,interpolation='bilinear')
plt.axis('off')
plt.title('Positive Tweets WordCloud')
plt.show()
```

Positive Tweets WordCloud


```python
negative_words=' '.join(positive_tweets)
wordcloud_negative = WordCloud(width=800, height=400, background_color='white').generate(negative_words)


plt.figure(figsize=(10,8))
plt.imshow(wordcloud_negative,interpolation='bilinear')
plt.axis('off')
plt.title('Negative Tweets wordcloud')
plt.show()
```

Negative Tweets wordcloud
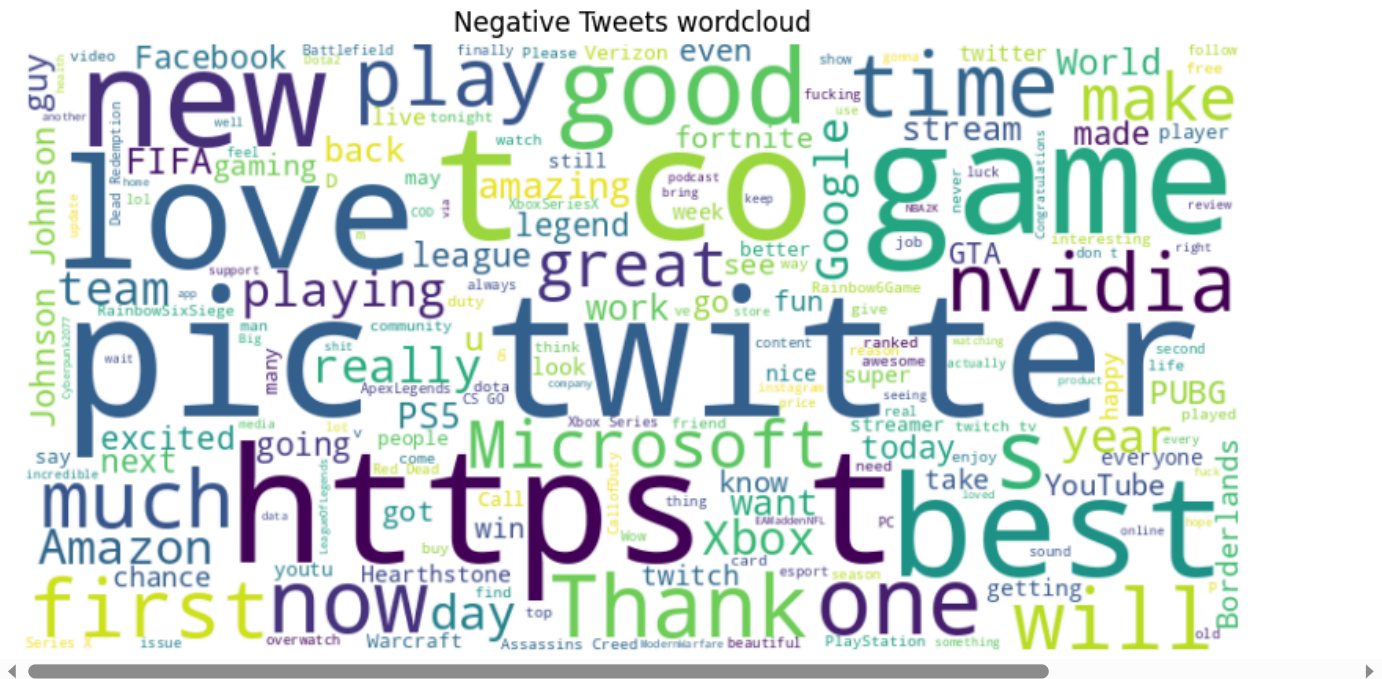
```
df.groupby('Topic')['Sentiment'].value_counts().unstack().plot(kind='bar', stacked=True, figsize=(12,6))
plt.title('Sentiment by Topic')
plt.ylabel('Count')
plt.xlabel('Topic')
plt.legend(title='Sentiment')
plt.show()
```
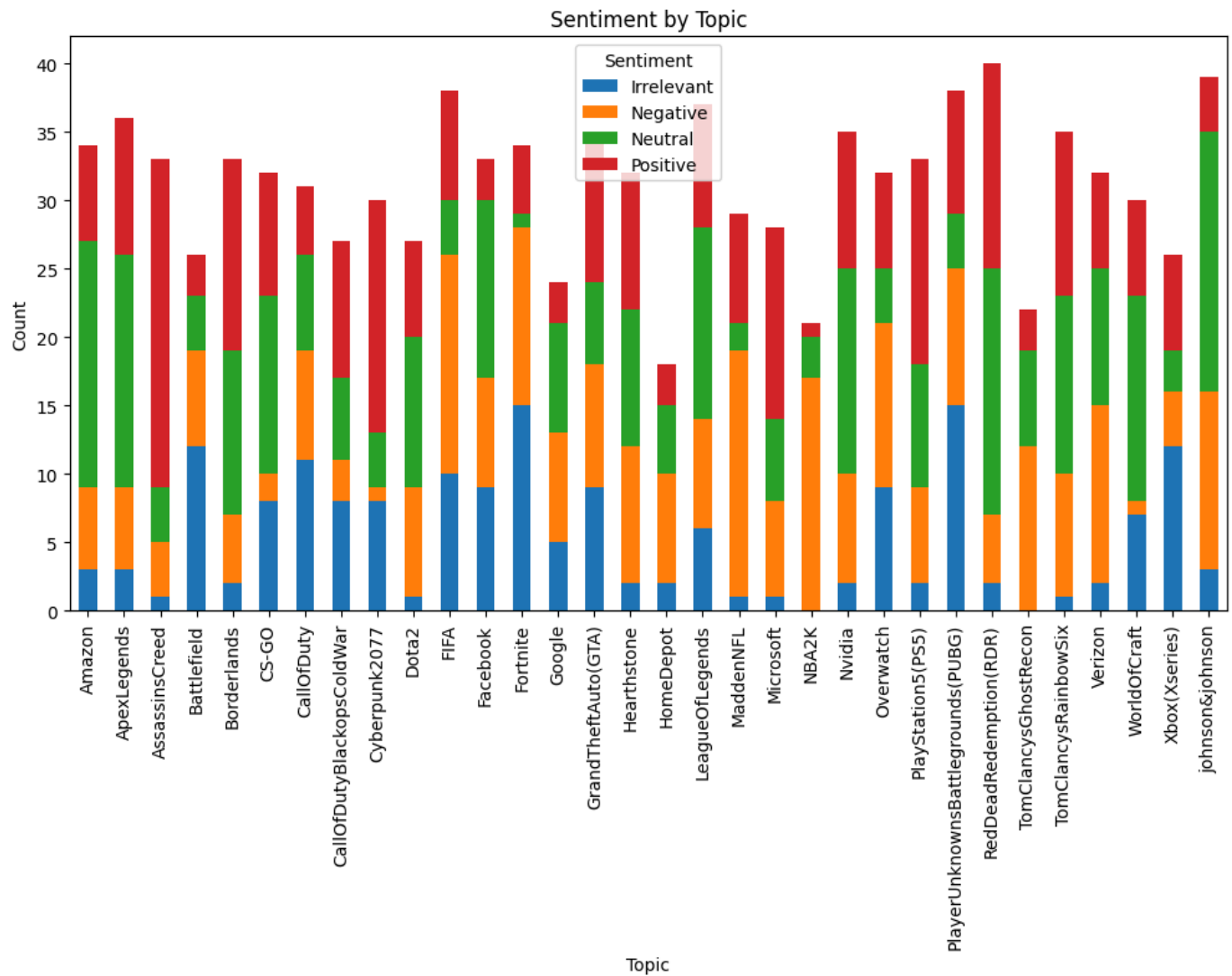

df

	Tweet_ID	Topic	Sentiment	Tweet	sentiment	sentiment_label
0	3364	Facebook	Irrelevant	I mentioned on Facebook that I was struggling ...	-0.143750	Negative
1	352	Amazon	Neutral	BBC News - Amazon boss Jeff Bezos rejects clai...	0.000000	Neutral
2	8312	Microsoft	Negative	@Microsoft Why do I pay for WORD when it funct...	-0.400000	Negative
3	4371	CS-GO	Negative	CSGO matchmaking is so full of closet hacking,...	-0.350000	Negative
4	4433	Google	Neutral	Now the President is slapping Americans in the...	0.250000	Positive
...	...	...	...	...	...	...
995	4891	GrandTheftAuto(GTA)	Irrelevant	⭐ Toronto is the arts and culture capital of ...	0.233333	Positive
996	4359	CS-GO	Irrelevant	tHIS IS ACTUALLY A GOOD MOVE TOT BRING MORE VI...	0.262500	Positive
997	2652	Borderlands	Positive	Today sucked so it's time to drink wine n play...	-0.800000	Negative

```
if 'entity' in df.columns:
    entity_sentiment = df.groupby('entity')['sentiment_label'].value_counts().unstack().fillna(0)
    entity_sentiment.plot(kind='bar', stacked=True, figsize=(10,6))
    plt.title('Sentiment by Entity')
    plt.ylabel('Count')
    plt.xlabel('Entity')
    plt.show()


plt.show()
```
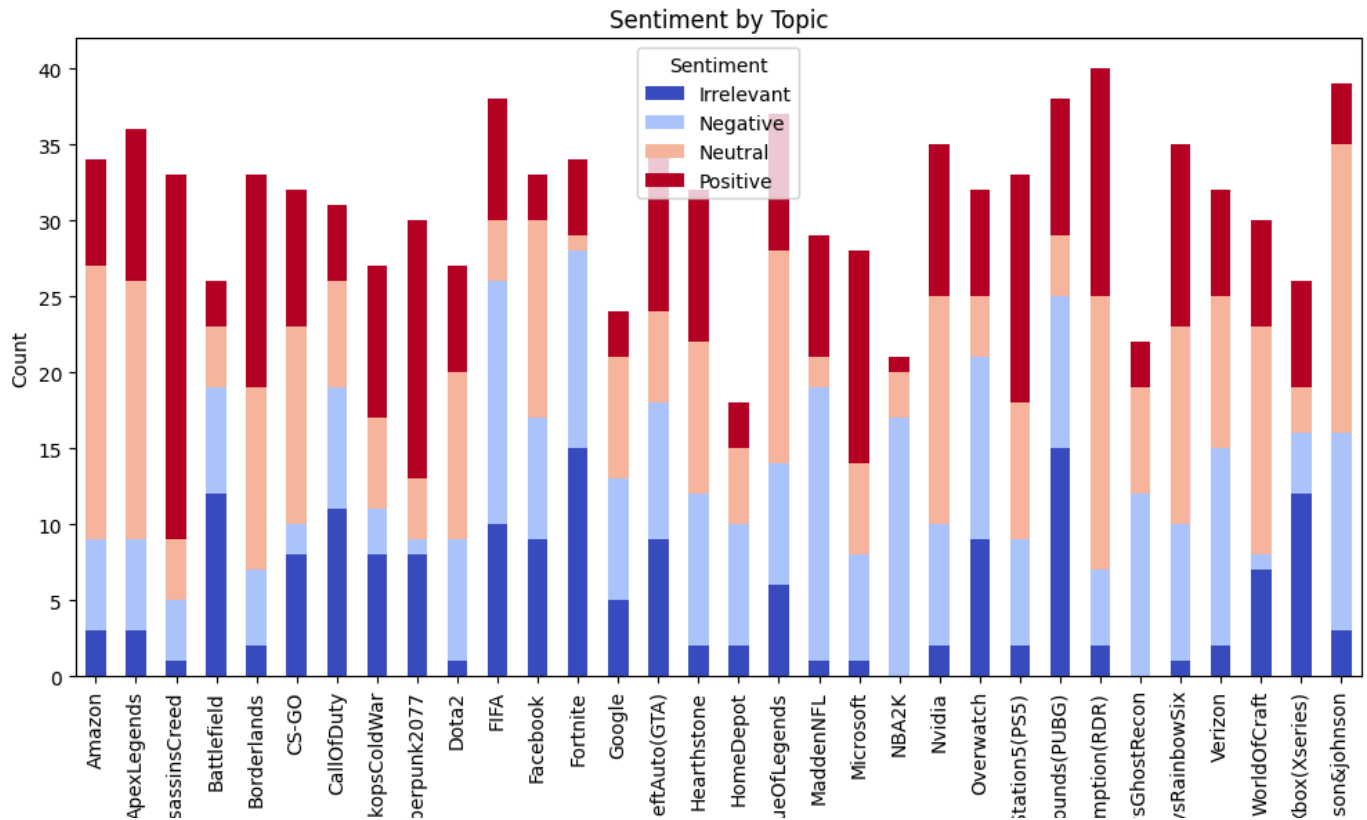
```python
if 'Topic' in df.columns:
    topic_sentiment = df.groupby('Topic')['Sentiment'].value_counts().unstack().fillna(0)
    topic_sentiment.plot(kind='bar', stacked=True, figsize=(12, 6), colormap='coolwarm')
    plt.title('Sentiment by Topic')
    plt.ylabel('Count')
    plt.xlabel('Topic')
    plt.legend(title='Sentiment')
    plt.show()
else:
    print("The dataset does not contain a 'Topic' column.")
```



```python
from wordcloud import WordCloud

# WordCloud for Positive Tweets
positive_tweets = ' '.join(df[df['Sentiment'] == 'Positive']['Tweet'])
wordcloud_positive = WordCloud(width=800, height=400, background_color='white').generate(positive_tweets)

plt.figure(figsize=(10, 8))
plt.imshow(wordcloud_positive, interpolation='bilinear')
plt.axis('off')
plt.title('Positive Tweets WordCloud')
plt.show()
```

Positive Tweets WordCloud


```python
negative_tweets = ' '.join(df[df['Sentiment'] == 'Negative']['Tweet'])
wordcloud_negative = WordCloud(width=800, height=400, background_color='black').generate(negative_tweets)

plt.figure(figsize=(10, 8))
plt.imshow(wordcloud_negative, interpolation='bilinear')
plt.axis('off')
plt.title('Negative Tweets WordCloud')
plt.show()
```

Negative Tweets WordCloud