```
 import pandas as pd
 from nltk.sentiment import SentimentIntensityAnalyzer
 import matplotlib.pyplot as plt
 import nltk
 nltk.download('vader_lexicon')
 sia = SentimentIntensityAnalyzer()
```

```
[nltk_data] Downloading package vader_lexicon to /root/nltk_data...
```

```
 # STEP 3: Load both datasets
 train_path =("/content/drive/MyDrive/twitter_training.csv")
 valid_path =("/content/drive/MyDrive/twitter_validation.csv")
```

```
 df_train = pd.read_csv(train_path, header=None)
 df_valid = pd.read_csv(valid_path, header=None)
```

```
# Check shape and sample
print("Train shape:", df_train.shape)
print("Validation shape:", df_valid.shape)
```

```
Train shape: (74682, 4)
Validation shape: (1000, 4)
```

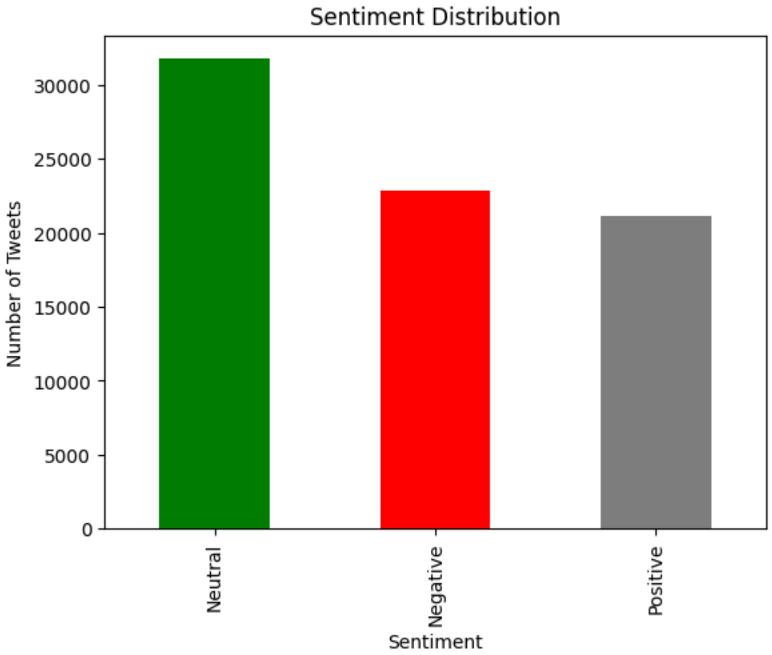
```
 # STEP 4: Rename columns if they have no headers (assumes 3rd column is the tweet t
 df_train.columns = ['id', 'label', 'text', 'sentiment']
 df_valid.columns = ['id', 'label', 'text', 'sentiment']
```

```
 # Combine both
 df = pd.concat([df_train[['text']], df_valid[['text']]], ignore_index=True)
 df.dropna(inplace=True)  # Remove empty tweets
```

```
# STEP 5: Apply sentiment analysis
def get_sentiment(text):
    score = sia.polarity_scores(str(text))['compound']
    if score > 0.05:
        return 'Positive'
    elif score < -0.05:
        return 'Negative'
    else:
        return 'Neutral'
df['sentiment'] = df['text'].apply(get_sentiment)
```

```
 # STEP 6: Display sentiment counts and plot
 print(df['sentiment'].value_counts())
 # Plot the sentiment distribution
 df['sentiment'].value_counts().plot(kind='bar', color=['green', 'red', 'gray'])
 plt.title("Sentiment Distribution")
 plt.xlabel("Sentiment")
 plt.ylabel("Number of Tweets")
 plt.show()
```

```
sentiment
Neutral     31765
Negative    22808
Positive    21109
Name: count, dtype: int64
```


Sentiment Distribution
Number of Tweets
Neutral
Negative
Positive
Sentiment