SMA EXPERIMENT NO - 5

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```
! pip install praw textblob wordcloud emoji vaderSentiment seaborn matplotlib pillow
```

```
Collecting praw
  Downloading praw-7.8.1-py3-none-any.whl.metadata (9.4 kB)
Requirement already satisfied: textblob in /usr/local/lib/python3.10/dist-packages (0.17.1)
Requirement already satisfied: wordcloud in /usr/local/lib/python3.10/dist-packages (1.9.4)
Collecting emoji
  Downloading emoji-2.14.1-py3-none-any.whl.metadata (5.7 kB)
Collecting vaderSentiment
  Downloading vaderSentiment-3.3.2-py2.py3-none-any.whl.metadata (572 bytes)
Requirement already satisfied: seaborn in /usr/local/lib/python3.10/dist-packages (0.13.2)
Requirement already satisfied: matplotlib in /usr/local/lib/python3.10/dist-packages (3.8.0)
Requirement already satisfied: pillow in /usr/local/lib/python3.10/dist-packages (11.0.0)
Collecting prawcore<3,>=2.4 (from praw)
  Downloading prawcore-2.4.0-py3-none-any.whl.metadata (5.0 kB)
Collecting update_checker>=0.18 (from praw)
  Downloading update_checker-0.18.0-py3-none-any.whl.metadata (2.3 kB)
Requirement already satisfied: websocket-client>=0.54.0 in /usr/local/lib/python3.10/dist-packages (from praw) (1.8.0)
Requirement already satisfied: nltk>=3.1 in /usr/local/lib/python3.10/dist-packages (from textblob) (3.9.1)
Requirement already satisfied: numpy>=1.6.1 in /usr/local/lib/python3.10/dist-packages (from wordcloud) (1.26.4)
Requirement already satisfied: requests in /usr/local/lib/python3.10/dist-packages (from vaderSentiment) (2.32.3)
Requirement already satisfied: pandas>=1.2 in /usr/local/lib/python3.10/dist-packages (from seaborn) (2.2.2)
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.3.1)
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (4.55.3)
Requirement already satisfied: kiwisolver>=1.0.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (1.4.7)
Requirement already satisfied: packaging>=20.0 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (24.2)
Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (3.2.0)
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.10/dist-packages (from matplotlib) (2.8.2)
Requirement already satisfied: click in /usr/local/lib/python3.10/dist-packages (from nltk>=3.1->textblob) (8.1.7)
Requirement already satisfied: joblib in /usr/local/lib/python3.10/dist-packages (from nltk>=3.1->textblob) (1.4.2)
Requirement already satisfied: regex>=2021.8.3 in /usr/local/lib/python3.10/dist-packages (from nltk>=3.1->textblob) (2024.11.6)
Requirement already satisfied: tqdm in /usr/local/lib/python3.10/dist-packages (from nltk>=3.1->textblob) (4.67.1)
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.10/dist-packages (from pandas>=1.2->seaborn) (2024.2)
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.10/dist-packages (from pandas>=1.2->seaborn) (2024.2)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist-packages (from python-dateutil>=2.7->matplotlib) (1.17.0)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests->vaderSentiment)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests->vaderSentiment) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests->vaderSentiment) (2.2.3
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests->vaderSentiment) (2024.
Downloading praw-7.8.1-py3-none-any.whl (189 kB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 189.3/189.3 kB 3.9 MB/s eta 0:00:00
Downloading emoji-2.14.1-py3-none-any.whl (590 kB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 590.6/590.6 kB 16.1 MB/s eta 0:00:00
Downloading vaderSentiment-3.3.2-py2.py3-none-any.whl (125 kB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 126.0/126.0 kB 10.8 MB/s eta 0:00:00
Downloading prawcore-2.4.0-py3-none-any.whl (17 kB)
Downloading update_checker-0.18.0-py3-none-any.whl (7.0 kB)
Installing collected packages: emoji, vaderSentiment, update_checker, prawcore, praw
Successfully installed emoji-2.14.1 praw-7.8.1 prawcore-2.4.0 update_checker-0.18.0 vaderSentiment-3.3.2
```

```
import praw
import re
import emoji
import matplotlib.pyplot as plt
import seaborn as sns
from vaderSentiment.vaderSentiment import SentimentIntensityAnalyzer
import pandas as pd

reddit = praw.Reddit(
client_id="JsmvtICXZGE0q4yMnb4i2w",
client_secret="9JY0sQul5OBUM2klZTMr9hAI1X3_9g",
user_agent="myRedditScraper/1.0 by yash"
)
```

```
subreddit_name = "AmazonReviews"
comments = []
emoticons = []

for submission in reddit.subreddit(subreddit_name).hot(limit=10):
    for comment in submission.comments:
        if hasattr(comment, "body"):
            comments.append(comment.body)
            found_emojis = emoji.emoji_list(comment.body)
            if found_emojis:
```

```
                emoticons.extend([e["emoji"] for e in found_emojis])

print(f"Total Comments: {len(comments)}")
```

```
WARNING:praw:It appears that you are using PRAW in an asynchronous environment.
It is strongly recommended to use Async PRAW: https://asyncpraw.readthedocs.io.
See https://praw.readthedocs.io/en/latest/getting_started/multiple_instances.html#discord-bots-and-asynchronous-environments for mo

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Total Comments: 18
Total Emoticons: 5
```
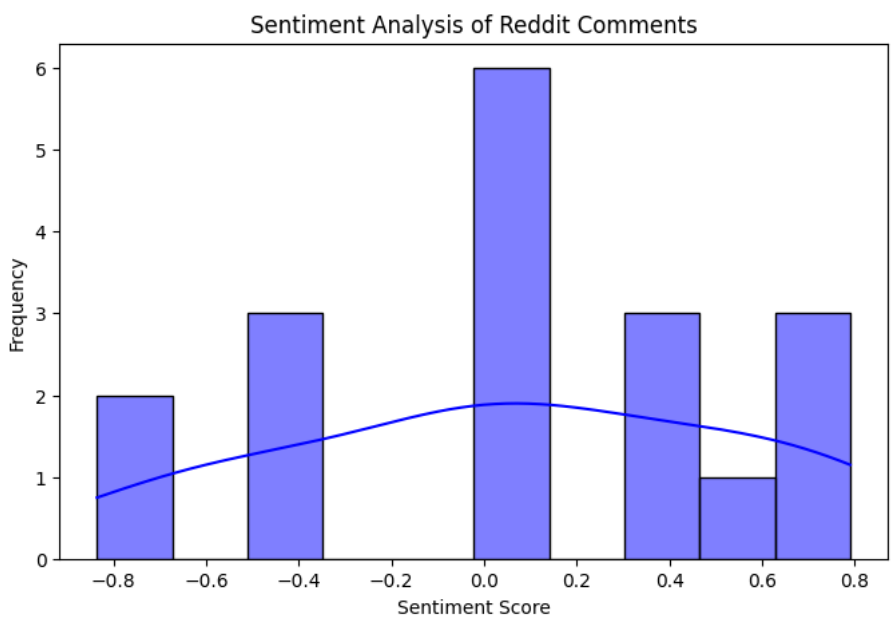
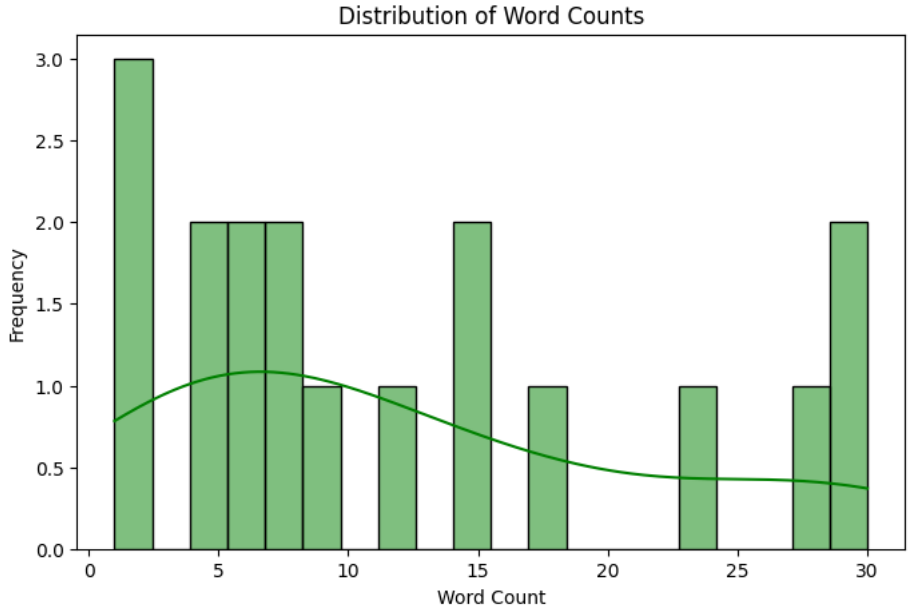

```
df_comments = pd.DataFrame({'Comment': comments})
df_emoticons = pd.DataFrame({'Emoticon': emoticons})

df_comments.to_csv("reddit_comments.csv", index=False)
df_emoticons.to_csv("reddit_emoticons.csv", index=False)

analyzer = SentimentIntensityAnalyzer()
text_sentiments = [analyzer.polarity_scores(comment)["compound"] for comment in comments]
word_counts = [len(comment.split()) for comment in comments]

df_comments['Sentiment'] = text_sentiments
df_comments['Word_Count'] = word_counts
```

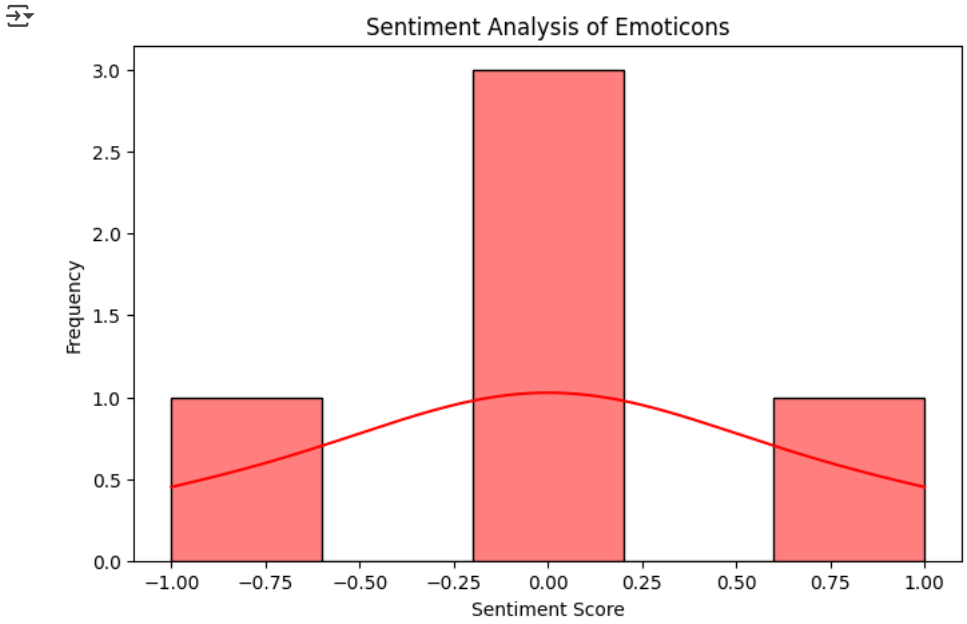
```
plt.figure(figsize=(8, 5))
sns.histplot(df_comments['Sentiment'], bins=10, kde=True, color="blue")
plt.xlabel("Sentiment Score")
plt.ylabel("Frequency")
plt.title("Sentiment Analysis of Reddit Comments")
plt.show()
```




```
plt.figure(figsize=(8, 5))
sns.histplot(df_comments['Word_Count'], bins=20, kde=True, color="green")
plt.xlabel("Word Count")
plt.ylabel("Frequency")
plt.title("Distribution of Word Counts")
plt.show()
```




```
emoticon_sentiment = {
    "😀": 1, "😃": 1, "😄": 1, "😁": 1, "😂": 1, "😊": 1, "😇": 1,
    "😐": 0, "😑": 0, "😶": 0,
    "😟": -1, "😭": -1, "😢": -1, "😠": -1, "😞": -1, "😔": -1,
}

emoticon_scores = [emoticon_sentiment.get(e, 0) for e in emoticons]
df_emoticons['Sentiment'] = emoticon_scores

plt.figure(figsize=(8, 5))
sns.histplot(df_emoticons['Sentiment'], bins=5, kde=True, color="red")
plt.xlabel("Sentiment Score")
plt.ylabel("Frequency")
plt.title("Sentiment Analysis of Emoticons")
plt.show()
```


Sentiment Analysis of Emoticons
Frequency
Sentiment Score
0.0
0.5
1.0
1.5
2.0
2.5
3.0
−1.00
−0.75
−0.50
−0.25
0.00
0.25
0.50
0.75
1.00