VIT Vidyalankar Institute of Technology
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DEPARTMENT OF COMPUTER ENGINEERING

Assignment No. 07

Semester	B.E. Semester VIII – Computer Engineering
Subject	Data Science Honors
Subject Professor In-charge	Prof. Amit Alyani
Academic Year	2024-25

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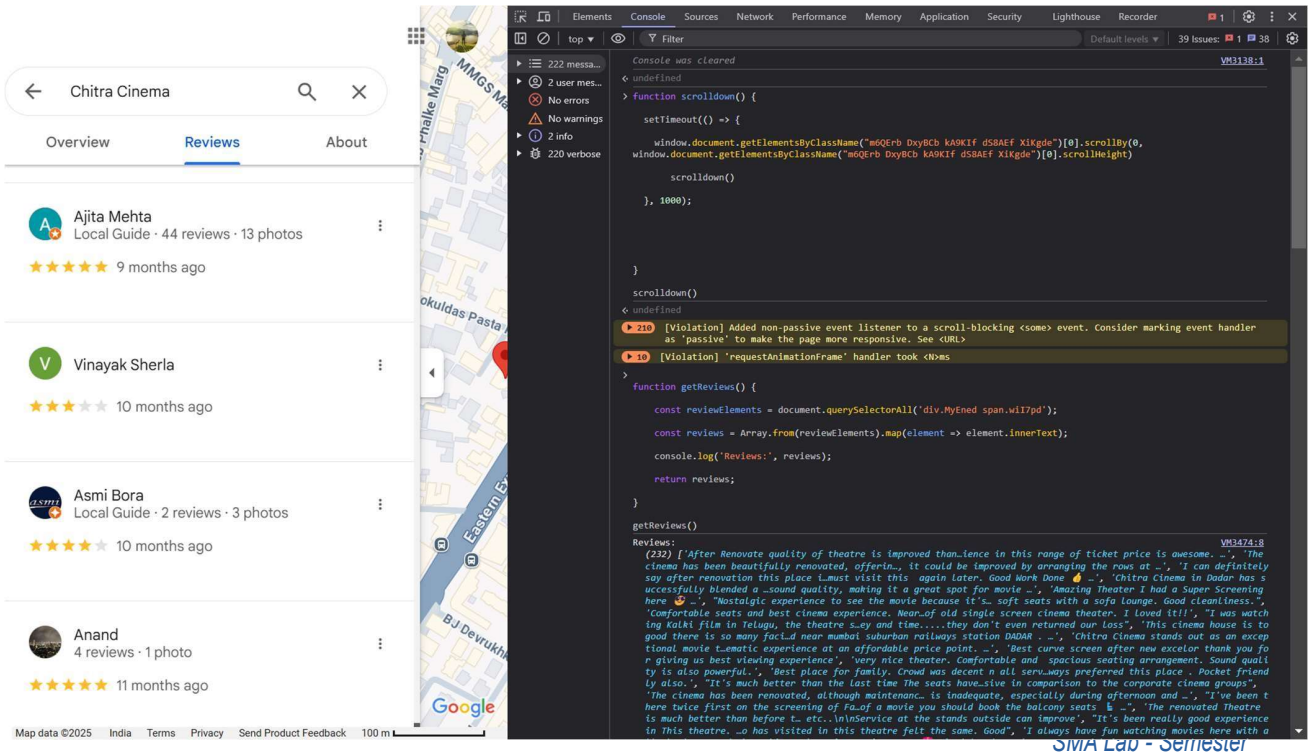
Title: Scrape customer reviews from Google & perform sentiment analysis (tweet API have been stopped)

Implementation:

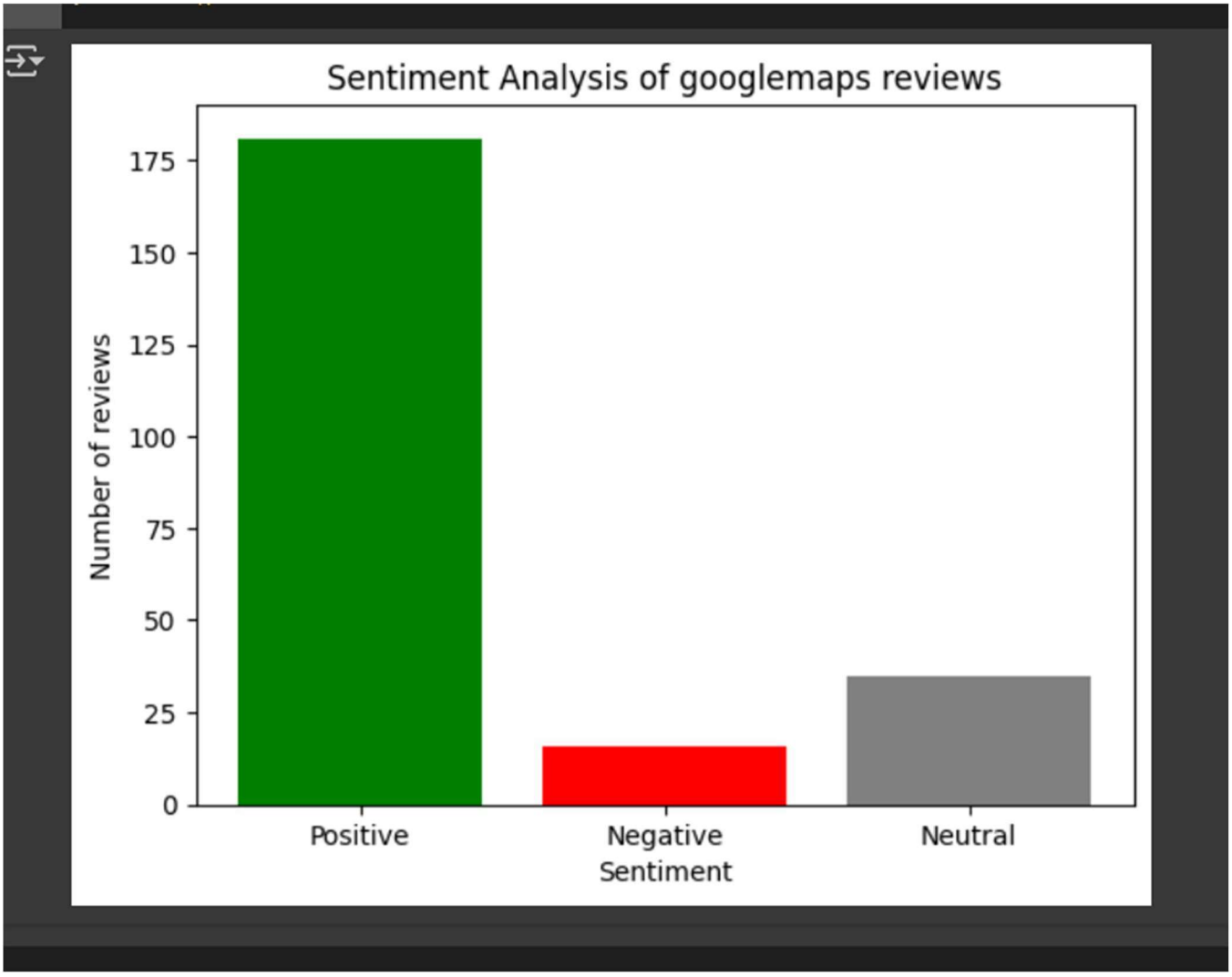
Scraping : Using standard js in console



```
[2]  from textblob import TextBlob

     def analyze_sentiment(review):
         # Create a TextBlob object
         blob = TextBlob(review)

         # Get polarity: -1 = negative, 0 = neutral, 1 = positive
         polarity = blob.sentiment.polarity

         # Determine sentiment based on polarity
         if polarity > 0:
             sentiment = "Positive"
         elif polarity < 0:
             sentiment = "Negative"
         else:
             sentiment = "Neutral"

         return sentiment, polarity

     # Example: Analyze sentiment of the first 10 reviews
     for idx, review in enumerate(reviews, start=1):
         sentiment, polarity = analyze_sentiment(review)
         print(f"review {idx}: Sentiment = {sentiment}, Polarity = {polarity}")
```

```
review 1: Sentiment = Positive, Polarity = 0.4166666666666667
review 2: Sentiment = Positive, Polarity = 0.38333333333333336
review 3: Sentiment = Positive, Polarity = 0.32299999999999995
review 4: Sentiment = Positive, Polarity = 0.3880952380952381
review 5: Sentiment = Positive, Polarity = 0.4666666666666667
review 6: Sentiment = Positive, Polarity = 0.13333333333333333
review 7: Sentiment = Positive, Polarity = 0.4628571428571428
review 8: Sentiment = Negative, Polarity = -0.39999999999999997
review 9: Sentiment = Positive, Polarity = 0.325
review 10: Sentiment = Positive, Polarity = 0.19166666666666665
```

```python
import matplotlib.pyplot as plt



# Analyze sentiment of the reviews
sentiments = {"Positive": 0, "Negative": 0, "Neutral": 0}

for review in reviews:
    sentiment, _ = analyze_sentiment(review)
    sentiments[sentiment] += 1

# Create a bar graph for the sentiments
labels = list(sentiments.keys())
values = list(sentiments.values())

plt.bar(labels, values, color=["green", "red", "gray"])
plt.title("Sentiment Analysis of googlemaps reviews")
plt.xlabel("Sentiment")
plt.ylabel("Number of reviews")
plt.show()
```



Insights:

- Most of the people has positive response
- Some have negative response due to bad experience due to technical issues during movie