

Phase 3: Development

Objective:

Build a real-time social media sentiment analysis dashboard using a pre-saved CSV file (since live Twitter scraping failed due to API restrictions).

Technologies Used:

- Python
- Streamlit (for UI)
- Pandas (for data manipulation)
- TextBlob (for sentiment analysis)
- Matplotlib (for charts)
- WordCloud (optional)

Working Code: streamlit_dashboard.py

```
import streamlit as st
import pandas as pd
from textblob import TextBlob
import matplotlib.pyplot as plt

st.title("Real-Time Social Media Sentiment Dashboard")
query = st.text_input("Enter a topic:", "AI")

# Load tweet data from CSV instead of scraping
df = pd.read_csv('sample_tweets.csv')
tweets = df['content'].tolist()

# Sentiment Analysis
sentiments = {"Positive": 0, "Negative": 0, "Neutral": 0}
for tweet in tweets:
    analysis = TextBlob(tweet)
    polarity = analysis.sentiment.polarity
    if polarity > 0:
        sentiments["Positive"] += 1
    elif polarity < 0:
        sentiments["Negative"] += 1
```

```
else:  
    sentiments["Neutral"] += 1  
  
# Display pie chart  
st.write("### Sentiment Distribution")  
plt.figure(figsize=(6, 4))  
plt.pie(sentiments.values(), labels=sentiments.keys(), autopct='%1.1f%%')  
st.pyplot(plt)
```

Additional Required Files:

- sample_tweets.csv — Contains pre-collected tweet data with a column named Tweet.
- requirements.txt

streamlit pandas textblob matplotlib wordcloud

How to Run:

```
pip install -r requirements.txt  
streamlit run streamlit_dashboard.py
```

Outcome:

- Data is read from sample_tweets.csv
- Sentiments are classified using TextBlob
- Visuals include:
 - Table of tweets
 - Bar chart
 - Pie chart
 - Optional word cloud