Project Documentation: Sentiment Analysis

Project Overview:

The goal of this project is to implement sentiment analysis on comments from the official Instagram and Facebook pages of a company. The sentiment analysis is performed using the RoBERTa pretrained model. The project involves the use of Python for scripting, Streamlit for building the user interface, and a MySQL database managed by phpMyAdmin for storing and retrieving data. The analysis scores are then delivered to clients via email based on the sentiment (negative & positive) of their comments.

Project Components:

1. Data Collection:
   - Comments from the official Instagram and Facebook pages of the company are collected using the respective APIs.

2. Sentiment Analysis:
   - The RoBERTa pretrained model is used for sentiment analysis. The Hugging Face Transformers library is employed to easily integrate and utilize the model.

3. Database Management:
   - The name of post-id of Facebook as well as of Instagram with email and sentiment scores are stored in a MySQL database managed by phpMyAdmin. The database schema includes fields for all these details. The comments were web scrapped using meta graph api and then analysed.

4. User Interface (Streamlit App):
   - A Streamlit web application is developed to allow clients to input their company name. The app communicates with the backend to perform sentiment analysis and stores the results in the database.

5. Email Delivery:
   - Based on the sentiment analysis results, client receive an email containing the sentiment change in score and feedback. This is achieved using the smtplib library in Python for email integration.

Technologies Used:

- Python:
 - Utilized for scripting, sentiment analysis, and communication between components.

- RoBERTa Pretrained Model:
 - Leveraged for accurate sentiment analysis.

- Streamlit:
 - Used to create a user-friendly web interface for company name input and result display.

- MySQL and phpMyAdmin:

  - Employed for efficient storage and retrieval of sentiment analysis results.

- SMTP (Simple Mail Transfer Protocol):
  - Integrated for sending emails containing sentiment scores to clients.

Project Workflow:

1. User Input:
  - Clients input their company name through the Streamlit web application.

2. Sentiment Analysis:
  - The RoBERTa model analyzes the sentiment of the comments.

3. Database Interaction:
  - Results are stored in the MySQL database through phpMyAdmin.

4. Email Notification:
  - Clients receive an email containing the sentiment score and feedback.

Project Benefits:

- Real-time Feedback:
  - Provides users with instant feedback on average sentiment score of all their comments.

- Data-driven Insights:
  - The collected data can be further analyzed to gain insights into the overall sentiment trends and client feedback.

 Conclusion:

This project successfully combines advanced sentiment analysis using the RoBERTa pretrained model with a user-friendly interface built with Streamlit. The integration of a MySQL database and email delivery enhances the overall client experience and provides valuable insights for the company's social media management.