Client Consultation Report

Project: YouTube Comment Analyzer using ML
Project Goal: To develop an AI/ML-powered system that accepts a YouTube video link, analyzes the comments, and provides a summary including the ratio of positive, negative, and neutral comments, along with spam detection. This helps users quickly assess public sentiment and engagement on videos.

Meeting 1: Understanding Comment Analyzer Goals

Objectives:

1. Understand the purpose and expected outcome of the project.

2. Identify the users and use cases.

3. Discuss scope and essential features.

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1. **Q: What is the main goal of the Comment Analyzer system?**
   A: To help users quickly understand how people feel about a video by analyzing public comments.

2. **Q: Who are the target users of this system?**
   A: General viewers, YouTubers, marketers, and researchers.

3. **Q: What kind of input will the user provide?**
   A: Just the URL of a YouTube video.

4. **Q: What output will the system provide?**
   A: Sentiment analysis (positive, neutral, negative), spam comment detection, and a visual summary.

5. **Q: Is the system designed for real-time analysis or scheduled batch processing?**
   A: Real-time analysis for individual video links.

6. **Q: What datasets are used for training and testing?**
   A: Public YouTube comment datasets and manually labeled sentiment datasets.

7. **Q: Will the system support languages other than English?**
   A: Not initially, but other languages may be added in future versions.

8. **Q: Is this meant for commercial or academic purposes?**
   A: Primarily academic for now, with potential for broader public use.

9. **Q: Will there be any restrictions on video types or channels?**
   A: No, as long as the video is public and has comments.

10. **Q: What makes this system useful to users?**
    A: It saves time by summarizing public opinion and filtering spam for better understanding of engagement.

Meeting 2: Technical Design and Features

Objectives:

1. Clarify model choices and design flow.

2. Identify preprocessing needs.

3. Discuss backend and UI framework.

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Q: What machine learning models are being considered?
A: VADER, logistic regression, and fine-tuned BERT for sentiment classification.

1. **Q: How is spam detected in comments?**
   A: Using keyword filtering, URL detection, and ML-based binary classification.

2. **Q: What preprocessing steps are applied to the comments?**
   A: Text cleaning, tokenization, stopword removal, and lemmatization.

3. **Q: Which API is used to fetch YouTube comments?**
   A: YouTube Data API v3.

4. **Q: What backend framework is being used?**
   A: Flask for handling model requests and APIs.

5. **Q: What frontend technologies are used?**
   A: React.js for a modern and responsive user interface.

6. **Q: Will the system provide visual output?**
   A: Yes, in the form of pie charts and bar graphs for easy understanding.

7. **Q: How long will it take to process a video?**
   A: Typically under 10 seconds for videos with up to 100 comments.

8. **Q: Will the model be trained from scratch or use pre-trained models?**
   A: Pre-trained models will be used initially for faster development.

9. **Q: What accuracy is expected from the sentiment analyzer?**
   A: Around 85–90% accuracy based on testing with labeled datasets.

Meeting 3: User Experience and Output Presentation

Objectives:

1. Design feedback and result display.

2. Ensure system is accessible and user-friendly.

3. Handle edge cases and input issues.

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Q: How should the sentiment results be presented to the user?
A: With labeled sections and percentages, e.g., "Positive: 60%, Neutral: 25%, Negative: 15%".

1. **Q: Can users download their results?**
   A: Yes, a PDF summary with graphs and analysis can be downloaded.

2. **Q: What if the video has comments in non-English languages?**
   A: Currently, those will be ignored or marked "Unsupported language".

3. **Q: How will unsupported file types or broken links be handled?**
   A: A friendly error message with retry instructions will be shown.

4. **Q: Will the UI support users with disabilities or elderly users?**
   A: Yes, with large fonts, simple layout, and accessible color schemes.

5. **Q: Should users be able to give feedback on the accuracy of the analysis?**
   A: Yes, a simple thumbs-up/down system will be included.

6. **Q: What happens if there are no comments on a video?**
   A: The system will notify the user: "No comments found for analysis."

7. **Q: Will users be able to upload comments manually in future versions?**
   A: Yes, that's a planned enhancement.

8. **Q: What kind of charts will be shown?**
   A: Pie charts for sentiment ratios and bar graphs for spam count.

9. **Q: Will there be help or documentation within the app?**
   A: Yes, a "Help" section and video walkthrough will be available.

Meeting 4: Deployment, Testing, and Go-Live

Objectives:

1. Finalize deployment method.

2. Plan testing and validation.

3. Ensure system is stable and ready for release.

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Q: When is the expected launch date of the system?
A: Within one month after testing is completed.

1. **Q: What kind of testing is being done before release?**
   A: Unit testing, API testing, and manual UI testing with various video links.

2. **Q: Where will the project be deployed?**
   A: Frontend on Netlify, backend on Render or Heroku.

3. **Q: Is the system open source?**
   A: Yes, code will be available on GitHub with documentation.

4. **Q: Will users need to register to use the tool?**
   A: No login required; it's an open-access tool.

5. **Q: How will failures or crashes be handled?**
   A: System will auto-retry failed requests and display an appropriate message.

6. **Q: Will usage statistics be tracked?**
   A: Yes, basic usage data will be logged for improvements.

7. **Q: Who is responsible for maintaining the project post-launch?**
   A: The development team will handle maintenance for the next 3 months.

8. **Q: Will there be user notifications for new features?**
   A: Yes, a notification banner or message will appear on the homepage.

9. **Q: How will you handle API quota limits?**
   A: The system will track usage and limit requests per user if needed.

TEAM MEMBERS:

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