**Software Requirements Specification (SRS)**

**Comment Analyzer:**

1. Introduction

1.1 Purpose

The purpose of this document is to define the requirements for the development of the YouTube Comment Analyzer, a specialized software application tailored for analysing comments specifically on the YouTube platform. The YouTube Comment Analyzer aims to provide users with valuable insights into the sentiment, relevance, and potential impact of comments on YouTube videos.

1.2 Scope

The YouTube Comment Analyzer will focus exclusively on processing and analysing text-based comments posted on YouTube videos. The software will leverage natural language processing (NLP) techniques to assess the sentiment of comments, identify key topics, and provide an overall evaluation of the comment's impact within the YouTube context.

1.3 Definitions, Acronyms, and Abbreviations

NLP: Natural Language Processing

SRS: Software Requirements Specification

API: Application Programming Interface

**System Features**:

**YouTube Video Input:** Users can input the URL of a YouTube video to analyse the comments associated with that video.

**Comment Sentiment Analysis**: The system will determine the sentiment of each comment (positive, negative, neutral) within the context of YouTube.

**Topic Extraction for YouTube**: Identify key topics and themes within the comments specific to YouTube content.

**Relevance Assessment for YouTube:** Evaluate the relevance of comments to the YouTube video's content.

**Functional Requirements:**

* **YouTube Video Input**

1. Description:

Users should be able to input the URL of a YouTube video for which they want to analyse comments.

1. Inputs

YouTube video URL

1. Outputs

Processed comments associated with the provided YouTube video ready for analysis.

* **Comment Sentiment Analysis**

1.Description:

The system should analyse the sentiment of each comment related to a YouTube video and categorize it as positive, negative, or neutral, considering the YouTube-specific context.

**Non-functional Requirements:**

* **Performance:**

1. Response Time

The system should provide responses to user queries within 3 seconds for optimal user experience.

1. Scalability

The system should be scalable to handle a minimum of 10,000 comments per YouTube video.

* **Reliability**

1. Availability

The YouTube Comment Analyzer should be available 99.9% of the time during standard operating hours.

1. Error Handling

The system should provide clear and user-friendly error messages for any issues encountered during the analysis process.

* **Usability:**

1. User Interface

The user interface should be intuitive and user-friendly, requiring minimal training for users to navigate and utilize the features.

1. Accessibility

The system should adhere to accessibility standards to ensure that users with disabilities can use the Comment Analyzer effectively.

* **Compatibility:**

1. Browser Compatibility:

The Comment Analyzer should be compatible with major web browsers such as Chrome, Firefox, and Safari.

2. YouTube API Compatibility:

The system should be compatible with the latest version of the YouTube API to ensure accurate and up-to-date comment retrieval.

* **Performance**

1. Resource Utilization

The system should efficiently utilize computing resources to ensure optimal performance without excessive server load

1. Bandwidth

The application should be designed to minimize bandwidth usage for efficient data transfer.