

AI Sentiment Analyzer for Social Media Posts

Requirement Analysis and Sprint Planning

Members:

Gapay, Ma. Suzchen F.

Manucom, Reana Anika N.

Nilo, Daniella Kim N.

Soner, Kristian A.

Table of Contents

1.0	Requirement Analysis	1
1.1	Business Objectives	1
1.2	User Requirements	1
1.3	Functional Requirements	2
2.0	Sprint Planning	4

1.0 Requirement Analysis

1.1 Business objectives

- The project will provide a user-friendly web application for analyzing Reddit posts in order to help individuals easily identify the sentiment of the post (positive, neutral, and negative)
- The project will provide immediate percentage-based sentiment on individual Reddit post in order to help assess the content tone with minimal effort.
- The project will help distinguish whether the post is AI-written or Human written in order to avoid false sentiment from an AI content mitigating confusion for the users.

1.2 User requirements

- The end user shall enter a valid URL of a Reddit post into the web application in order to use the sentiment analyzer and AI detection feature.
- The end user will receive an error message if the Reddit URL is invalid in order to ensure only valid content is analyzed.
- The end user will receive an error message if the Reddit post contains content other than text in order to ensure that only text-based data is processed.
- The end user will receive an error message if the Reddit post is in a language other than English in order to ensure accurate sentiment analysis and prevent error caused by unsupported languages.
- The end user shall press the submit button after inputting a valid Reddit post URL in order to process the input.

- The end user shall view the output that displays the sentiment analysis percentage and AI detection results in order to quickly assess the tone and authenticity of the Reddit post.

1.3 Functional Requirements

- **Accepting Posts**

- This function allows the users to input the links of chosen Reddit posts. The system then detects if the submitted link is valid or not for sentiment analysis.
 - In case the language of the submitted Reddit post is in full English, the link will be accepted.
 - In case the language of the submitted Reddit post is not fully English, the link will not be accepted.
 - In case a user submits a text-based Reddit post, the link will be accepted.
 - In case a user submits an image, audio, video, or any multimedia-based Reddit post, the link will not be accepted.

- **Extracting Text**

- This function allows the post from the submitted Reddit link to be converted into text and be used by the sentiment analysis tool. The extracted text is then to be shown in the results table after retrieving the results.

- **Determining Sentiment**

- This function analyzes the extracted text and mines for its underlying emotions. Once the text is analyzed, the calculated sentiment score is utilized in classifying the post to its most accurate label category:
 - Positive
 - Negative
 - Neutral

- **AI Detection**

- This function allows users to determine if the submitted post is made through AI or not by calculating its overall AI percentage.
 - If an AI percentage score greater than or equal to 20% is calculated, the submitted Reddit post will be classified as AI-generated.

- **Report Output**

- This function allows the users to see the results of the sentiment analysis and AI detection tools by displaying a table including the following:
 - The Extracted text
 - Sentiment Classification
 - AI-generated Status
 - Bar Chart of overall sentiment distribution
 - Percentage of AI-generated content

2.0 Sprint Planning

Sprint 1: System and UI Design	Deadline: Week 9 (February 13, 2025)
Prototyping	All Members
ERD	Nilo
Acceptance Criteria	All Members
Setup of project	All Members
Sprint 2: UI Coding & Model Training	Deadline: Week 10 (February 2025)
Homepage, prompts, and output UI	All Members
Model training	Manucom, Nilo
Sprint 3: Coding Implementation	Deadline: Week 11 (February 2025)
UI functionality (input field, buttons, output)	Soner
Language Checker	Soner
Link and Content Type Checker	Soner
Error Handling Codes	Soner
Integrate an AI Content Validator	Gapay
Integrate the Model Sentiment Analyzer	Gapay, Nilo
Sprint 4: Coding Implementation	Deadline: Week 12 (March 5, 2025)
Fine tune the Model	Gapay, Nilo
UI refinement	Manucom
Unit testing	All Members
Sprint 5: Acceptance Testing and integration	Deadline: Week 13 (March 10, 2025)
Acceptance criteria compliance	All Members
Done	All Members