

# AI Sentiment Analyzer for Social Media Posts

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Prototype, ERD, and Acceptance Criteria

Members:

Gapay, Ma. Suzchen F.

Manucom, Reana Anika N.

Nilo, Daniella Kim N.

Soner, Kristian A.

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## 1.0 Prototype

Figma link: [Reddit Sentiment Analyzer](#)

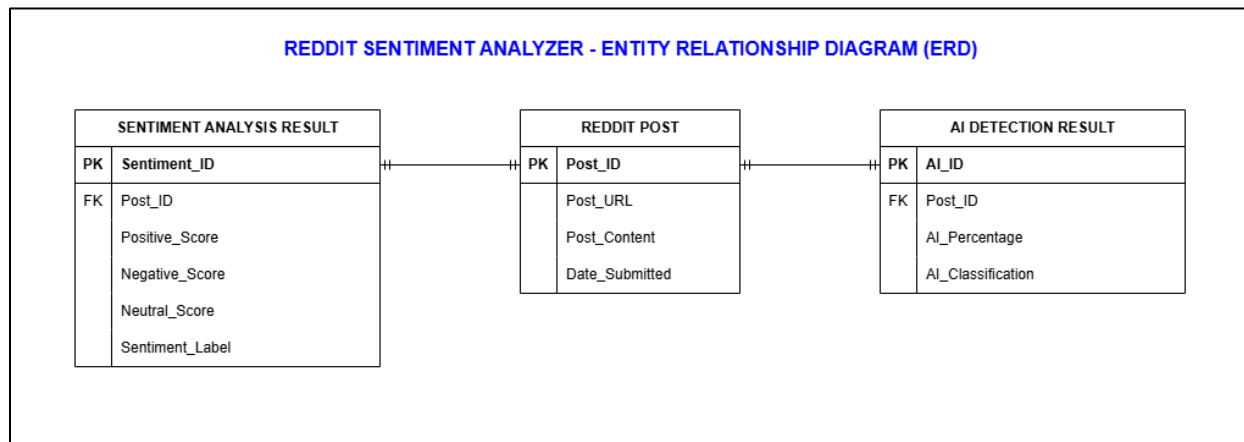
The screenshot shows a web application titled "Reddit Sentiment Analyzer". It features a header bar at the top and a footer bar at the bottom, both in a light gray color. The main content area is white. At the top of the main area, the title "Reddit Sentiment Analyzer" is displayed in a bold, black font. Below the title, there is a text input field with the placeholder text "Paste Reddit Link Post" and a "SUBMIT" button to its right. Below the input field, there is a large rectangular box labeled "Analyzed text.....". To the right of this box, there is a section titled "AI GENERATED PERCENTAGE:" followed by a horizontal line. Below this section, there are three rows, each consisting of an emoji (happy, neutral, and sad) and a corresponding horizontal bar representing a percentage level.

HOME PAGE

The web application focuses on analyzing the sentiment of a Reddit post before classifying it as positive, negative or neutral with its percentage indicating the confidence level of each classification. Moreover, it also detects if the specific Reddit post content was AI-generated and displays its percentage level.

The design corresponds to a minimalist approach with straightforward functionality for users. They can submit a valid Reddit post link and the system will provide an instant Sentiment Analysis and AI Detection results for the user.

## 2.0 Entity Relationship Diagram (ERD)



ENTITY RELATIONSHIP DIAGRAM

The Entity Relationship Diagram (ERD) above shows the database structure for the Reddit Sentiment Analyzer. The system has three main entities: (1) Reddit Post, (2) Sentiment Analysis Result, and (3) AI Detection Result. The relationships in the ERD are defined as one-to-one because each Reddit post has exactly one sentiment analysis result and one AI detection result. The Post\_ID serves as a foreign key in both the Sentiment Analysis Result and AI Detection Result Tables so that each analysis is directly connected to a specific Reddit post. It is structured in a way that makes it easier for data retrieval and analysis.

The Reddit Post entity stores the data about the analyzed Reddit post which includes its primary key (Post\_ID) and attributes like URL (Post\_URL), extracted content (Post\_Content), and the date it was submitted (Date\_Submitted). On the other hand, the Sentiment Analysis Result entity contains the results of the sentiment analysis performed on each Reddit post. It has a primary key (Sentiment\_ID), a foreign key (Post\_ID) that links it to the respective Reddit post, and three sentiment scores (Positive\_Score, Negative\_Score, and Neutral\_Score) as additional attributes that represent the percentage breakdown of the sentiment detected in the post. The final classification (Sentiment\_Label) determines whether the post is positive, negative, or neutral based on the highest score. As the last entity, the AI Detection Result is responsible for storing all the AI-generated classifications. It also has a primary key (AI\_ID) as its unique identifier and a foreign key (Post\_ID) to associate it with the specific Reddit post. It contains attributes that represent the detected AI-related content of the text (AI\_Percentage) and the specific category of whether it is AI-generated or written by a human (AI\_Classification).

### 3.0 Acceptance Criteria

- A. Page Load Requirements
  - a. The input field, submit button, and results section must be visible upon page load.
  - b. The input field must contain the placeholder text: "Paste Reddit Link Post".
- B. UI & UX Interactions
  - a. Clicking the Submit button should trigger a loading animation until the sentiment analysis is complete.
  - b. Results should appear in a structured and readable format.
- C. Submission of a New Reddit Link
  - a. Submitting a new Reddit link should clear previous results and display the new analysis.
  - b. The Submit button must only be enabled when a valid link is present in the input field.
- D. Displayed Information after Submission
  - a. The text field below must show the extracted text from the post.
  - b. The AI-generated sentiment percentages must be visible to the user.
  - c. The sentiment scores (positive, neutral, negative) must be displayed, with the highest score highlighted.
- E. Sentiment Representation
  - a. An emoji ( 😊 , 😐 , 😞 ).
  - b. A percentage display indicating sentiment strength.
- F. Error Handling
  - a. If an unsupported Reddit link is used, display an error message.
  - b. If the user enters a Reddit post with an image, video, or link-only content, display an error message.
  - c. If the user enters a Reddit post in other language than English, display an error message.
  - d. If the user enters a Reddit post that has above 20% AI probability percentage the sentiment analysis will not go through and display an error message.