My project is a WhatsApp chat and sentiment analyzer that utilizes the VADER (Valence Aware Dictionary and sEntiment Reasoning), a text sentiment analysis model. The aim of this project is to analyze the sentiment of conversations in WhatsApp chats and provide insights into the emotional tone of the conversations.

To accomplish this, I implemented the VADER algorithm, which is specifically designed for sentiment analysis in social media text. VADER takes into account both lexical and grammatical cues to determine the sentiment of a given text, including the intensity of positive or negative sentiment. It employs a human-centric approach, combining qualitative analysis and empirical validation through the wisdom of the crowd and human raters.

The chat data is pre-processed to remove irrelevant information such as timestamps and non-text elements. Then, the VADER algorithm assigns sentiment scores to each message in the chat.

VADER sentiment analysis returns a sentiment score for a text between -1 and 1, with -1 representing highly negative sentiment, 1 representing highly positive sentiment, and 0 indicating neutrality. The sentiment score of a sentence is calculated by summing up the sentiment scores of the constituent words in the VADER dictionary. To normalize the score within the -1 to 1 range, a specific formula is applied, with a normalization parameter set at 15

VADER incorporates five simple heuristics to account for contextual elements such as punctuation, capitalization, degree modifiers, polarity shifts due to "but," and negation. These heuristics help amplify or dampen the sentiment scores based on the presence of certain linguistic cues, further refining the sentiment analysis results

Additionally, I implemented features such as visualizations of sentiment trends over time and identification of most positive and negative messages in the chat. These features allow users to gain a deeper understanding of the emotional dynamics within the conversation.

Overall, my WhatsApp chat and sentiment analyzer using VADER provides an effective tool for analyzing the sentiment of WhatsApp chats. It can be used to identify positive or negative trends in conversations, understand the emotional context of messages, and gain valuable insights from the data