**DOCUMENTATION**

**Task-4: Analyze and visualize sentiment patterns in social media data to understand public opinion and attitudes towards specific topics or brands.**

**Introduction:**

**SENTIMENT PATTERNS- Sentiment patterns refer to trends, tendencies, or structures observed in the sentiments expressed by individuals or groups towards a particular topic, entity, event, or phenomenon. These patterns are derived from analyzing textual data (such as social media posts, reviews, surveys, etc.) to understand the prevailing sentiments and emotional tones associated with the subject of interest.**

**FUNCTIONS AND PACKAGES USED IN THIS TASK:**

Description for each function and package used in the R program to analyze and visualize sentiment patterns in social media data:

1. read\_csv: Reads a CSV file into a data frame, loading the Twitter Entity Sentiment Analysis dataset.
2. get\_nrc\_sentiment: Performs sentiment analysis using the NRC lexicon to classify text into emotion categories (anger, anticipation, joy, etc.).
3. cbind: Combines the original dataset with sentiment scores derived from sentiment analysis.
4. head: Displays the first few rows of a data frame to inspect the structure and content.
5. colSums: Computes the column-wise sums of numeric data, useful for summarizing sentiment scores.
6. barplot: Creates a bar plot to visualize the distribution of sentiment categories across tweets.
7. ggplot2: A package for creating graphics in R, used here for advanced plotting capabilities.
8. install.packages: Installs new packages from CRAN or other sources to extend R's functionality.
9. library: Loads R packages into the current session, enabling access to their functions and datasets.
10. rainbow: Generates a vector of colors from the rainbow palette for visualization customization.

These functions and packages collectively facilitate the import, analysis, and visualization of sentiment patterns in social media data, enabling insights into public opinion and attitudes towards specific topics or brands.

