**SENTIMENT ANALYSIS FOR MARKETING**

**TEAM MEMBER**

**812821205006:Anandhakumar.S**

**Phase-1 Document Submission**

**OBJECTIVE:**

This project aims to provide a practical experience of working as an NLP (Natural Language Processing) specialist by conducting sentiment analysis on customer feedback to gain insights into competitor products. The objective is to uncover what customers appreciate and dislike about competing products, offering valuable information for enhancing one's own product. This project is of great significance, as it enables companies to tap into the wealth of customer sentiments to inform product development and business strategy. Various NLP techniques will be employed to gain a deeper understanding of customer feedback and opinions.

**Modules:**

**Data Collection:**

Objective: Identify and collect a comprehensive dataset of customer reviews and sentiments regarding competitor products. This data will serve as the foundation for the analysis.

Subtasks:

Source relevant data from online review platforms, e-commerce websites, or social media channels.

Ensure data quality and coverage across different competitor products.

Data Preprocessing:

Objective: Prepare the collected textual data for analysis by cleaning and structuring it effectively.

Subtasks:

Remove special characters, punctuation, and irrelevant symbols from the text.

Tokenize the text into individual words or phrases.

Eliminate common stop words.

Apply stemming or lemmatization to reduce words to their base forms.Handle missing or incomplete data.

Sentiment Analysis Techniques:

Objective: Utilize a variety of NLP methods to extract meaningful insights from customer feedback.

Subtasks:

Implement traditional approaches like Bag of Words (BoW) or Term Frequency-Inverse Document Frequency (TF-IDF) for sentiment analysis.

Explore advanced techniques such as Word Embeddings (e.g., Word2Vec, GloVe) to capture context.

Leverage Transformer models (e.g., BERT, GPT) to understand sentiment in context and nuances.

Feature Extraction:

Objective: Extract relevant features and sentiments from the preprocessed text data to facilitate analysis and modeling.

Subtasks:

Create sentiment scores for each customer review (positive, negative, neutral).

Identify key phrases or topics within reviews that contribute to sentiment.

Develop additional features that may influence customer sentiments.

Visualization:

Objective: Create data visualizations to illustrate the distribution of sentiments and identify trends in customer feedback.

Subtasks:

Generate bar charts, pie charts, or histograms to visualize sentiment distribution.

Create word clouds to highlight frequently mentioned terms.

Plot time series graphs to track sentiment changes over time or product versions.

Insights Generation:

Objective: Extract actionable insights from sentiment analysis results to guide product improvement and business decisions.

Subtasks:

Identify strengths and weaknesses of competing products based on sentiment analysis.

Discover recurring themes or pain points in customer feedback.

Provide recommendations for product enhancement and marketing strategies