# OBJECTIVES AND REQUIREMENTS

## Objectives

The main objective of this project is to develop a sentiment recognition model capable of identifying the predominant emotion expressed in a given piece of text. The system will classify input sentences into one of thirteen emotions: Happiness, Sadness, Neutral, Anger, Love, Fear, Disgust, Confusion, Surprise, Shame, Guilt, Sarcasm, and Desire. By providing fine-grained emotional classification, the project aims to go beyond traditional sentiment analysis (positive, negative, neutral) and capture a richer emotional spectrum.

The model will be designed for versatility, supporting multiple application domains. Potential use cases include market research, where understanding customer emotions can guide product strategy; content moderation, where detecting emotions such as anger, hate, or sarcasm can help flag potentially harmful content; and political or social analysis, where the emotions expressed in public discourse can provide valuable insights into trends and collective sentiment.

In addition to accuracy, the project also aims to prioritize usability and scalability. The system should be able to process both single sentences and large datasets efficiently, delivering results in an interpretable format that supports visualization and downstream integration. Over time, the model should allow continuous improvement through retraining with new data, ensuring adaptability to evolving language use and maintaining relevance across different contexts.

## Requirements

### Functional requirements

FR-1: The system shall allow users upload an indefinite number of sentences.

FR-2: The system shall automatically preprocess the sentences (treat and tokenize)

FR-3: The system shall send preprocessed sentences to the sentiment recognition model for analysis.

FR-4: The system shall send the results; detected emotions for each sentence.

FR-5: The system shall log predictions and errors for monitoring.

FR-6: The system shall support retraining or fine-tuning with user-provided datasets.

FR-7: The system shall allow batch processing and real-time (single sentence) processing.

### Non-functional requirements

NFR-1: The system shall accept any number of sentences.

NFR-2: The system shall achieve at least 90% classification accuracy for each emotion.

NFR-3: The system shall be easily reproducible and retrainable.

NFR-4: The system shall provide predictions within 300 milliseconds per sentence.

NFR-5: The system shall be robust against noisy inputs (typos, slang, emojis

NFR-6: The system shall be maintainable, with modular code and documentation.