**Multi-Label Emotion Recognition from Text Report**

# 1. Objective

The objective of this task was to develop a system for multi-label emotion recognition from textual data using the GoEmotions dataset provided by Google. The goal was to classify text into multiple emotional categories such as joy, sadness, and anger using a transformer-based model like BERT.

# 2. Methodology

We attempted to preprocess the GoEmotions dataset, address class imbalance, and fine-tune a BERT model using the HuggingFace Transformers library. The approach included the use of `BertTokenizer`, `BertForSequenceClassification`, and the `Trainer` API with `TrainingArguments`. Evaluation metrics planned were Hamming Loss and F1 Score.

# 3. Problems Faced

Multiple issues arose during the implementation phase, primarily due to version conflicts and internal errors in the `transformers` package. Specifically, the following were encountered:  
- `TrainingArguments` raised a `TypeError` for unsupported parameters.  
- Installation of the `tokenizers` library failed due to wheel-building errors.  
- Runtime `ImportError` involving a corrupted `Cache` import from `transformers`.  
- Version conflicts between `transformers` and `sentence-transformers`.  
- Incompatibilities between required versions and Google Colab's Python environment.

# 4. Outcome

Despite multiple attempts to fix the installation and compatibility issues by adjusting package versions, uninstalling conflicting libraries, and restarting the runtime, the errors persisted. These issues ultimately made it impossible to complete the model training or evaluation pipeline. Given the consistent failures, we have decided to stop the implementation of this task at this stage.

# 5. Conclusion

This report summarizes our attempt at building a multi-label emotion classifier using BERT and the GoEmotions dataset. While the theoretical approach remains valid and implementable under compatible environments, technical limitations and unresolved errors in the current setup prevented us from reaching the final goal. Future work may involve setting up the environment in a more stable framework or using an alternative approach to fine-tune the transformer model.