**Approach Behind the Assessment**

The main idea behind is to leverage BERT-based models Sentiment Analysis to identify subtheme sentiments within text data. The approach involves preprocessing the data, preparing the custom dataset, defining a BERT-based model architecture, training the model, validating its performance, and providing a way to make predictions on new data. The main focus is on developing a robust sentiment analysis pipeline capable of identifying subtheme sentiments with high accuracy.

Libraries Used:

Python: The primary programming language used for development.

PyTorch: Deep learning library used for building and training neural networks.

Transformers: Library providing pre-trained BERT models and utilities for natural language processing tasks.

Pandas: Library used for data manipulation and analysis.

Scikit-learn: Library used for machine learning tasks such as preprocessing and evaluation metrics calculation.

So , I have made two files, one carrying the Data Preprocessing, data preparation , Analysis. And the second file consist of bert based model, architecture , training and validation.

This is the approach ,I used while tackling this problem .