Project Proposal
Mental Health Sentiment Analysis and generating preventive measure

1. Problem Selection and Rationale:
- Problem: Detection and prevention of anxiety or depression through tweets/post data.
- Rationale: Mental health is a critical concern, and early detection and intervention can significantly impact individuals positively. By developing a model to understand anxiety or depression from text and providing preventive measures, we aim to contribute to mental health support.

2. NLP Methods:
- Sentiment Analysis: Utilize pre-trained sentiment analysis models for initial identification of anxiety or depression in user text. We will compare the results with the results from classical methods.

- Text Generation: To suggest the preventive methods for anxiety based on text we would get; we will try to suggest some preventive measures for the victim.

- Language Translation: We would be translating user input to English for analysis and translating results back to the user's language. For this we would be using LSTM or some pretrained models related to language translation in one or more languages like Fairseq or hugging face transformers.

3. Packages:
- NLTK or spaCy for basic natural language processing tasks.
- Transformers library for pre-trained sentiment analysis (e.g., from Hugging Face) and text generation models.

4. NLP Tasks:
- Sentiment Analysis: Identify anxiety or depression in user text.
- Text Generation: Provide generative content for preventive measures.
- Language Translation: Enable multilingual support for user interaction.

5. Model Performance Evaluation:
- Metrics:
  - Sentiment Analysis: Accuracy, precision, recall, and F1 score.
  - Text Generation: Human evaluation and coherence metrics.
  - Language Translation: BLEU score or other translation evaluation metrics.

6. App Development:

- A basic app where user can add there tweet and we show the sentiment, and based on that sentiment we try to give some preventive measures .
- Later on in project we will try to enable multilingual support.

7. Rough Project Schedule:

- Days 1-2: Project Setup and Dataset Acquisition
  - Define project scope, goals, and metrics.
  - Acquire and preprocess datasets.

- Days 3-5: Sentiment Analysis Implementation
  - Implement sentiment analysis models on the dataset.
  - Fine-tune or customize models if necessary.

- Days 6-10: Text Generation Implementation
  - Implement text generation models for providing preventive measures.
  - Ensure coherence and relevance of generated text.

- Days 11-15: Multilingual Support and Translation
  - Implement language translation using appropriate APIs.
  - Integrate translation into the sentiment analysis and text generation pipeline.

- Days 16-18: Model Evaluation and Refinement
  - Evaluate the performance of the overall model.
  - Refine models based on evaluation results.

- Days 19-20: App Development
  - Develop the app interface using Streamlit