ACTIVITY 1

Team No: 01

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PROBLEM STATEMENT:

Developing a sentimental analysis tool that can analyse social media posts and classify them as positive, negative or neutral

EXCISTING SOLUTION:

**1.Define Objectives:**

Clearly outline the goals of your sentiment analysis tool – whether it's for brand monitoring, customer feedback analysis, or general sentiment tracking.

**2.Data Collection:**

Gather a diverse dataset of social media posts for training your model. Include examples of positive, negative, and neutral sentiments. APIs like Twitter API or platforms like Reddit can be useful for data collection.

**3.Preprocessing:**

Clean and Preprocess the text data by removing stop words, special characters, and irrelevant information. Tokenize the text to break it into individual words.

**4.Feature Extraction:**

Use techniques like TF-IDF (Term Frequency-Inverse Document Frequency) or word embedding (Word2Vec, Glove) to convert text data into numerical features that can be used for machine learning.

**5.Model Selection:**

Choose a suitable machine learning model for sentiment analysis. Common models include Naive Bayes, Support Vector Machines, or more advanced ones like recurrent neural networks (RNNs) or transformers (such as BERT).

**6.Training:**

Train your chosen model using the labelled dataset. Adjust hyper parameters to improve performance. Cross-validation can help assess the model's generalization ability.

**7.Evaluation:**

Evaluate the model's performance using a separate validation dataset. Metrics like accuracy, precision, recall, and F1 score can be helpful in assessing its effectiveness.

**8.Integration:**

Integrate the trained model into your sentiment analysis tool. Develop an interface for users to input social media posts and receive sentiment classifications

**9.Real-time Analysis:**

If applicable, design the tool to perform real-time sentiment analysis by continuously monitoring and analysing social media posts as they are posted.

**10.Monitoring and Updates:**

Regularly monitor the tool's performance and update the model if needed, especially if the nature of social media language evolves over time