AI PROJECT

**Group member:**

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**Description About Project:**

This project involves text analysis and classification using various machine learning models. It starts with data preprocessing, including tokenization, lemmatization, stop word removal, and vectorization using TF-IDF and Count Vectorizer. Sentiment analysis is performed using Text Blob, and word clouds are generated for visualization. The dataset is balanced using SMOTE to handle class imbalance. Machine learning models like Support Vector Machine (SVM), Decision Tree, Random Forest, Naïve Bayes, and Logistic Regression are implemented for classification. The dataset is split into training and testing sets, and model evaluation metrics are calculated. The project utilizes Python libraries like NLTK, Scikit-learn, and Matplotlib for analysis and visualization.