EVALUATION OF NAÏVE BAYES CLASSIFIER AND DECISION TREE CLASSIFICATION METHODS TO ANALYZE PUBLIC SENTIMENT TOWARDS THE INQUIRY RIGHT OF THE PEOPLE'S REPRESENTATIVE COUNCIL ON TWITTER SOCIAL MEDIA

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ABSTRACT

The research presented examines the role of the House of Representatives in overseeing the executive branch through the Right of Inquiry, a topic of significant public interest. Twitter serves as a primary source for analyzing public opinion regarding the DPR's Right of Inquiry. This study aims to evaluate the performance of the Naïve Bayes Classifier and Decision Tree algorithms in classifying public sentiment towards the DPR's Right of Inquiry on Twitter. The research process includes data collection from Twitter, preprocessing stages, sentiment classification, and analysis of the results. The tests were conducted using a dataset of 456 entries, with 80% allocated for training and 20% for testing. The findings indicate that both algorithms demonstrated excellent performance, achieving an accuracy rate exceeding 95%. The Decision Tree model showed the highest level of accuracy, reaching 100%, while the Naïve Bayes Classifier attained 98%. The Confusion Matrix revealed a precision value of 0.99, a recall value of 1.00, and an F1-score of 0.99. However, the relatively modest dataset size imposes constraints on the capacity to effectively distribute words, thereby hindering the efficacy of sentiment analysis. Consequently, the Decision Tree algorithm is predisposed to overfitting on such limited datasets. To address this challenge, the implementation of pruning methods is imperative to prevent overfitting.

***Keywords**: Sentiment Analysis, Decision Tree, DPR Inquiry Rights, Naïve Bayes Classifier, Twitter*