

## **ABSTRACT**

*One form of interaction between humans is by talking or dialogue. The interaction between humans is not always going well because it is influenced by several factors such as differing opinions, expectations not in reality or not always bad due to good mood factors. These things will definitely affect a person's emotions, these emotions can be determined through sound signals. The emotions that will be identified in this study are happy, angry, sad, and shocked. Sound signals are represented by the Linear Predictive Coding (LPC) feature.*

*This final project is proposed using the Key-Nearest Neighbor (K-NN) classification method. The selection of this method will be tested with objects based on learning data that is the closest distance to the object, some rules of distance on K-NN also affect the accuracy of the testing system. K-NN also has advantages, which are easier to understand, more effective to implement and compute, simpler and better grouping. Through analysis of the sound frequency, a person's voice can be examined, including normal, risky or high levels.*

*The purpose of this study is to classify the sound of human emotions seeing from the parameters sought the best accuracy in the system. The result of the test showed that the highest accuracy obtained was 92.5% using 6 LPC statistical features, which contain mean, variance, standard deviation, skewness, kurtosis, entropy and Distance Cityblock on K-NN from 100 training data and 40 test data. The best parameters obtained for feature extraction using Linear Predictive Coding are 14 maximum matrix lengths, 22 cepstral windows, 960 frame lengths, and 160 overlaps. For classification using Key-Nearest Neighbor (K-NN), the parameter  $k$  is 1 (one) with distance city blocks.*

**Keywords : K-Nearest Neighbor (K-NN), Linear Predictive Coding (LPC), Emotion.**