

ABSTRACT

Traditional musical instruments are one of Indonesia's commodities which has become a valuable asset and has become one of Indonesia's attractions for foreigners. Almost every region has its own traditional musical instruments. The sound quality on every musical instrument that is in the spotlight where there is a gap in the tone when heard through the ear, although not too different sounds, but we can be sure the quality of each making is different. Unique tones characterize various traditional Indonesian musical instruments, such as gambang musical instruments originating from West Java.

In this study is about the classification of gambang musical instrument quality through digital audio signal processing through a system that can identify the sound quality contained in gambang musical instruments through sound processing. In the identification system the sound quality of this instrument consists of feature extraction and tone classification of gambang musical instruments. Sampling of total sample data is done 120 times, each class is taken 60 samples with a variation of time 4 seconds with good and normal class classification. Through extracting the characteristics of an audio signal can be known the type of class and its characteristics.

The feature extraction method used is the Mel Frequency Cepstral Coefficient and the classification method used is the K-Nearest Neighbor system produces an accuracy of 95% with the best system accuracy when the windowing value is 5600, and the overlap value is 4200, and the best parameter is when the type of cosine and $k = 7$.

Keywords: *Gambang, Mel Frequency Cepstral Coefficient, K-Nearest Neighbor.*