ABSTRACT

Growth of technology can change public taste in music. Easy access to modern music makes people especially the youth forget the traditional music. For example in the Karonese (one of the tribes in North Sumatra) many young people do not even know what a local traditional music.Therefore needed a action to remind people to the culture. Keteng-keteng is one of the Karonese musical instrument which plays a very important in some traditional ceremonies. But to show it on a concert needed a soundsystem device with a high specification.

Thus the authors make a electric Keteng-keteng where the can be easily amplified by soundsystem devices such as speakers. Electric Keteng-keteng equipped with a voice recognition system to facilitate the players in changing the basic tone while playing. To solve the problems in the Keteng-keteng, the author use Raspberry Pi 2 as the processor of the system. Piezzoelektrik sensor used to detect vibrations in the Keteng-keteng when it hit. Vibration that detected will be translated by the processor and then the processor will produce a output sound of Keteng-keteng. To process a human voice recognition, used method of Mel-frequency cepstral coefficients (MFCC) for data extraction and Euclidean Distance to compare the data with a database.

Research in this final project has succeed to make speech recognition system to change the basic tone of the electronic Keteng-keteng with 61.9% accuracy in non real-time testing and 48% in real-time testing.

Keywords : Keteng-keteng, MFCC (*Mel-frequency cepstral coefficients*), *Euclidean Distance*, *k*-Nearest Neighbors, *Speech Recognition*