

## **ABSTRACT**

Until now, doctors still use the technique of auscultation of heart sounds to listen to monitor cardiac performance. The results of the diagnosis in this way must be very dependent of the level of auditory sensitivity and doctor's experiences. In addition, factors of heart sound signals that occupy the low frequencies and have a low amplitude also increase the likelihood of error diagnostics.

To detect the presence or absence of heart disease in a person, then it should be identified is the presence or absence of murmurs. This final task is to give tools to separate the components of the sound of heart murmurs. In general, the segmentation system is done by using wavelet decomposition and eigenvalue method. The resulting approximation coefficients of wavelet decomposition is calculated simplicity value. Simplicity is then conducted threshold that would separate the components of the first heart sound (S1) and second heart sound (S2) with a murmur.

From the results of research using 2<sup>th</sup> level wavelet decomposition obtained segmentation accuracy was 100% with the parameters  $N = 50$  and  $m = 4$  in the calculation of the value of simplicity.