ABSTRACT

Heart is one of the organs of the human body are very important. The function of the heart are to pumps blood containing nutrients and oxygen throughout the body. So if there is abnormality in the heart, will surely interfere with the body's health because of the work that was not optimal. To determine the condition of the heart, necessary tools for heart condition sensing is an electrocardiogram (ECG).

For this research, ECG feature extraction using Discrete Wavelet Transform (DWT) and the data will be converted to scallogram and get the special characteristic extraction using Grey Level Difference Method (GLDM). As for classification using the k-Nearest Neighbor (k-NN). The output will be analyzed and classified into 6 types of ECG rhythms, among others, atrial fibrillation (AF), normal sinus rhytme (NSR), ventricular tachicardia (VT), ventricular fibrillation (VF), Paced rhytms (PR), ventricular premature contraction (PVC).

In this system the methods used in the analysis is GLDM, the calculation of the distance between the pixel d=1 obtained an influence on the accuracy for 65%. K-nn classification with Euclidean Distance measurement method is able to produce an accuracy value for k = 1 by 70%, k = 3 71.6%, k = 5 by 70%, and k = 7 by 70%.

Keywords: ECG, Discrete Wavelet Transform, k-Nearest Neighbor, heart, scallogram