ABSTRACT

ECG is a device that can analyze the resulting electrical signal rather than the human heart. EKG itself serves to detect and amplify small electrical changes in the skin that is caused when the heart muscle *depolarizes* during a certain period of heartbeats.

The abnormal heart signals obtained from the ECG can be specified to a class of heart disease through of data drawn from the study. Classification of the ECG signal shape is performed using Support Vector Machine (SVM), which previously carried out the characterization first signal shape by the method of Principal Component Analysis (PCA). Linear conversion process, as practiced by the PCA, the lines widely used for feature extraction and dimension reduction. PCA is the most famous feature extraction algorithm that is linear, which is a linear mapping that uses the eigenvector with largest eigenvalue. Before the feature extraction with PCA. While SVM is a technique that generates the interface better generalization.

The output of this form of mathematical statistics which formed six classes, namely heart disease: *Atrial fibrillation, Normal Sinus Rhyth, Ventricular Tachicardia, Paced Rhythms, Ventricular Fibrillation and Ventricular Premature Contractions,* with a accuracy: 58,3333% PC 1-40; 56,6667% PC 1-30; 53,3333% PC 1-20; 33,3333% PC 1-10; 31,6667% PC 1-50, and 48,3333% untuk PC 1-60. The results of this output is the result of the classification of SVM is carried out through the learning process (learning) and the process of recognition(recognition).

Keywords: ECG signal, Principal Component Analysis (PCA), Support Vector Machine (SVM)