ABSTRACT

Arrhythmia is an early symptom of chronic heart disease, where the rhythm of the heartbeat becomes too fast, too slow, or even irregular. Early symptoms of heart disease or arrhythmias are rarely detected early. The solution to detect the presence of arrhythmias is to design a device that can detect abnormalities in the rhythm of the heartbeat in real time.

This final project discusses the design of arrhythmia detection system with Beat signal detection method. The system calculates the interval between beats to determine the type of arrhythmia. The data taken are primary data from 3 respondents who have PVC arrhythmias, tachyabardia, and respondents who do not have arrhythmias. The testing of system performance is carried out using the confussiuon matrix to find Accuracy, Recall, and Specificity.

This system can detect arrhythmia in user and display the result after detecting heart rate for 1 minute. From the test results to respondents who have PVC this system has an average accuracy of 99.7%, 96.19% recall, and 99.3299% specificity. In testing on respondents who do not have arrhythmia, the system has an average accuracy of 99.97%. In testing on respondents who have tachycardia, the system has an accuracy of 100% in detecting tachycardia.

Keywords: *Arrhythmia, PVC, Tachycardia, Beat, confusion matrix, Beat Per Minute.*