ABSTRACT

In the human body, the heart is one of the most important organs in the human body that circulates blood from the heart to the entire human body. In Infodatin data (2019) obtained more than 36 million people in the world died due to heart disease, this data is 63% of all deaths each year. Globally, the number one cause of death each year is heart disease. Therefore, a tool is needed to determine the condition of the heart. Heart conditions can be known through heart signals measured using a device called an electrocardiogram (ECG). Electrocardiogram requires processing of heart signals that support the accuracy of the tool in knowing the condition of the heart. There are several methods that can be used in the signal processing process to determine the condition of the heart signal. In this study using signal filtering using a low pass filter. This tool is equipped with a plastic box to protect the sensor on impact and water. The outputs that occur in the signal processing include the display of ECG waves, the number of bpm, and a description of the normal heart rate visualized in the telegram application. Error and accuracy testing on the AD8232 sensor obtained an error percentage value of 2.04% and an accuracy percentage value of 97.96%. The system was successfully created and able to visualize heart signals and categorize the results of bpm values based on the Normal and Tachycardia categories. This system successfully transmits data in real-time via an internet connection, and makes it easy for users to see the results of the examination process directly.

Keywords: Electrocardiogram (ECG), Heart, Low pass filter, Real-time, Telegram