

ABSTRACT

Heart rate is an important indication in the health field that is useful for knowing the health condition of a person's heart, by designing tools and heart rate detection applications that can calculate heart rate can help A person knows the level of health itself independently and early in the case of cardiac work disorders. However, in order to determine the amount of pulse required by the Electrocardiograph tool, that is the representation of the cardiac signaling characteristics produced by the electrical activity of the heart muscle.

This tool uses a pulse sensor that is placed on the fingertip of the hand as a heart rate detection tool that is processed with an Arduino UNO microcontroller and uses the Android smartphone as the base system applied to operate and Display the heart rate data. The connection system between the device and Android smartphones using wireless media. The Data of heart rate detection is stored in thingspeak, so it can be processed for further purposes.

Based on the simulation the tool carried out a heart rate data sampling on 10 normal humans and 10 archechemical sufferers. With 5 times trial of sampling data. The normal human heart rate range is (60-100 bpm) and for arrhythmia sufferers (above 100 bpm). The test results of the heart rate detected in the display on the smartphone in the form of digital signal is texsumarbeatper Minute (BPM). There is a human normal heart rate difference for 75 bpm and for patients with arrhythmia is 107 BPM.

Keywords : Arrhythmia sufferers, Electrocardiograph representation, Pulse sensor, Arduino uno microcontroller, Wireless, Thingspeak, Android smartphone