

HEART RATE MONITORING SYSTEM USING PULSE HEART RATE SENSOR AND NODEMCU

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ABSTRACT

Heart rate is an important indicator of overall heart health. Changes in heart rate can indicate underlying health problems, even before other symptoms appear, especially for the elderly population who are vulnerable to cardiovascular issues such as heart disease, stroke, and arrhythmia. Therefore, a heart rate monitoring device is needed that can monitor heart rate and allow early detection of such cardiovascular disorders. Along with modern technological advancements, heart rate monitoring devices are now available for everyone, but heart signal diagnosis still needs to be conducted by doctors or medical professionals. A heart monitor can be made using a heart rate sensor attached to a NodeMCU device. The Pulse Sensor, which functions to detect human heartbeats, can be placed in three measurement locations: on the finger, hand, or forehead. The data is then processed by NodeMCU, and the measurement results, which are Beats Per Minute (BPM), will be displayed on a website and stored in a database. The test results show that the average heart rate measurement using the device is 74 BPM, while the manual measurement is 74 BPM, with an accuracy of 97.74%, and it takes 60 seconds to display the average Beats Per Minute (BPM).

Keywords : *Heartrate, Cardiovascular, NodeMCU, PulseSensor, Website*