

ABSTRACT

Design of medical device referring to checking pulse rate of a person is growing rapidly in the market. Recently, pulse rate check is done manually by the doctor or nurse to help someone to know the condition. It is impractical to check the pulse rate manually by the doctor or nurse. The design must be portable in order to be able to know the performance of the design before. The patients can monitor their own condition with pulse sensor attached to the index finger to analyze the pulse rate condition. The results can be shown easier with the availability of smartphone in the market especially. In some conditions, the experts is so important to analyze the patient. The development of modern design, especially in the case of biomedical diagnostics can help the examiner to check the pulse rate.

The final project goals are to develop the existing technology which is microcontroller based, bluetooth as a media pinned to the microcontroller to send the information to the smartphone and designing for index finger sensor connected to the computer or smartphone.

Based on the research results obtained by checking the pulse rate of 10 volunteers, it is found that the error average is 0.70 % on the result group. The differences between each age group before the activity is 60 - 100 bpm, while the difference before and after the activity depends on the seriousness of the person for activity.

Keywords: *Technology, Android, Pulse, Sensor, Bluetooth*