

ABSTRACT

Respiration is one of the important things to indicate a human's condition is fine. But, nowadays, almost every healthcare clinics and hospitals, doctors and nurses rarely record or calculate their patient's respiratory rate. In fact, this is something that's important and can be a reference for further medical treatment. Respiratory rate is number of respiration that is taken from a person every minute and was taken in a rest or relaxed condition. Respiratory rate will vary according to age, gender, emotions, and physical condition of a person. If a person's respiration rate is too low or high than normal limit that has been determined, there is a problem in the body.

The Final Project is to design and implementation of respiratory rate counter using e-Health sensor shield V2.0. Patient sat quietly and relaxed, then in front of the nose, nasal airflow sensor placed, that's connected to e-health sensor shield V2.0 and Arduino uno. Airflow from nose will be measured by nasal airflow sensor, then be processed by Arduino Uno R3, so obtained respiratory rate and patient's condition will be displayed on PC using LabVIEW software.

After testing the system respiratory rate counter, showed that system run well. Appropriate threshold values to be applied to a system that is equal to 19, with 30% multiplication of difference in value of the maximum and minimum amplitude. In addition, the values obtained from testing accuracy of system compared with manual counting, that's equal to 95,43% is better than the accuracy of Biopac compared with manual counting, 82,01%. It can be concluded that system is running as expected.

Key word : respiration, respiratory rate, e-health, arduino, labview