

## **ABSTRACT**

The heart is a vital organ in the human body. Functioning heart circulation blood throughout the body. Volume of blood in an organ of the body will vary due to the blood by the heart pumping. Photoplethysmograph (PPG) is a device that can detect changes in blood volume using optical sensors.

The purpose of this Final Project is to create a monitoring system Photoplethysmograph online. That is a device for monitoring blood volume changes and a graph showing the changes. Fluctuations in blood volume change is influenced by the rhythm of the heart's blood pumping. Each peak in the PPG signal is correlated with a heartbeat. Photoplethysmograph graphs can be used to determine the condition and one's heart defects. Photoplethysmograph system realized in this online form sensor, amplifier, LPF, ADC, and the microcontroller as a serial interface, wiz610wi modules, and web applications as a graphical viewer PPG online. Sensor consisting of a red LED and fotoresistor (LDR) placed on the fingers. Rays emitted by the LED is accepted by LDR. Signals received by the LDR changes according to changes in blood volume. Sensor output signal and then amplified and filtered. Filter output signal at the ADC, a serial interface by AT89C2051 then transmitted by the module to display wiz610wi and monitored.

PPG monitoring system online is a realization of telemedicine, which is made easy interaction between doctors (medical experts) with the user without having to come face to face directly. Of the patients, can know the health condition of the heart of the sample recorded heart rate displayed in graphical form PPG through a web application. While from the doctor, can see the graphic user PPG during measurement and can provide the diagnosis through a web application.

Key words: heart, Photoplethysmograph (PPG), monitoring, online, telemedicine