ABSTRACT

Health is one of the most important aspects of life. Efforts to prevent and overcome health problems by maintaining them properly. Various kinds of prevention efforts that can be done are exercise, diet, health checkups, and others. One of the impacts that can arise from health problems is that it can interfere with daily activities.

The heart is one of the organs that is very important for the body which must be maintained in health. To maintain its health, a system is needed to monitor heart activity before health problems occur. One module that can detect heart activity is the AD8232 module. The AD8232 module is a component that can detect the electrical signal generated by the heart. In this final project will be discussed about a system that can monitor heart signals using Raspberry Pi 3 as the microprocessor.

In the process of designing this prototype, it will be carried out using Python language by sending data using MQTT then the data will be stored on the Antares IoT Platform using the AD8232 and ADS1115 sensor modules by calculating the *R-peaks* accuracy detection. To ensure that no data has been sent, the Cross-Correlation method will be used to measure its accuracy. The results of the design of the wireless ECG system in this final project *R-peaks* of heart rate signals of 75% using LPF and HPF with a cross-correlation value of 1 at lags 0.

Keywords: AD8232, Raspberry Pi 3, ADS1115, *R-peaks*, *Cross-Correlation,* Antares *IoT Platform*