ABSTRACT

Most of the irrigation systems in Indonesia still use a manual system, namely a system where farmers have to open and close irrigation channels to the rice fields in a conventional way. The intelligent automatic rice field irrigation system with the support of solar panel power using an Arduino microcontroller based on the Internet of Things (IoT) is a tool created to help farmers make it easier to drain water to their rice fields remotely in real time. This tool aims to increase the effectiveness of farmers' work. Through this tool is also expected to facilitate the work of farmers. The hardware used as a portal is to use a servo motor to retrieve water level data using a soil moisture sensor and as a control center using an NodeMCU ESP8266 microcontroller. In this irrigation portal control system the control is done using an android application that is connected to the node controller via the apy key from web hosting, then after the portal is open the soil moisture data from the controller node is sent and displayed in the application. The process of controlling this system can be done anywhere at any time when connected to the internet in real time. This system also uses power support from solar panels to produce an energy source for the battery.

Keywords: intelligent system, soil moisture, irrigation, internet of things