

ABSTRACT

Agriculture is the most important sector in Indonesia. Indonesia is known as an agricultural country because some of its population has a livelihood in agriculture or farming. Therefore, Indonesia is one of the countries with abundant agricultural products so it needs better infrastructure. One of the infrastructures for agriculture is automatically designed to make it easier for farmers or communities to grow crops. This IoT-based automatic watering tool using Arduino software is used to program soil moisture and sensors with NodeMCU ESP8266 and using Bylink. In Bylink we can monitor Arduino only through an internet connection. In this final project, a design will be discussed that focuses on creating an IoT-based automatic watering tool program with Arduino IDE software that can be monitored through ByInk. The results of programming IoT-based automatic watering tools with Arduino IDE software are designed and implemented by installing soil moisture sensors to detect soil moisture levels and solenoid valves to control water flow according to soil moisture values. As an automatic watering tool, it functions to regulate and control automatic plant sprinklers based on the identification of user needs, the type of plant to be watered, and specific water needs. In accordance with environmental conditions so that it is able to allow automatic watering tools to interact with the surrounding environment.

Keywords: NodeMCU ESP8266, IoT, ByInk.