ANDROID-BASED APPLICATION TO CONTROL NUTRITIONAL REQUIREMENTS IN HYDROPONIC PLANTS
(Case Study: DewaPonik)

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ABSTRACT

Hydroponics is a method of cultivating plants by utilizing water without using soil as a medium. The advantages of hydroponic cultivation at the Dewaponik agency are that it is environmentally friendly, time efficient and does not require a large area and saves water, because it uses only 1/20 of ordinary plants. One of the important factors in cultivating hydroponic plants is maintaining the quality of water and nutrients in plants. Many cultivators have to control pH and hydroponic nutrient levels to increase plant productivity so that it is maintained, so an efficient application is needed to control nutrient pH and monitoring. This application for controlling nutritional needs utilizes Internet of Things (IoT) technology with a NodeMCU ESP8266 microcontroller as well as a pH sensor, TDS sensor, temperature sensor which can help in retrieving plant data and utilizes Firebase as real-time data storage. This application was created to provide convenience. for Dewaponics in controlling and monitoring pH conditions, nutrient levels of hydroponic plants, especially water conditions which are very vital for plant growth. The conclusion of the research carried out was that the results obtained from testing the pH sensor, TDS sensor, water pump in the system had been controlling and monitoring hydroponic plants using the Android application at the Dewaponik agency.

Keywords: Hydroponics, NodeMCU Esp8266, Application, Android, Internet of Things