IMPLEMENTATION OF AUGMENTED REALITY FOR IOT BASED MONITORING AND WATERING CHILI PLANTS

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ABSTRACT

This final project research aims to implement Augmented Reality (AR) technology in monitoring and watering chili plants effectively by utilizing the Internet of Things (IoT). The main objective of this final project research is to increase the efficiency of watering chili plants and provide accurate and timely information to users through the use of AR and IoT technology. The method used in this final research project involves the integration of hardware and software. IoT sensors are installed around the chili plant area to detect soil moisture levels, environmental temperature, and other factors that influence plant growth. The data collected by the sensors is sent to the IoT management system which then forwards the information to the AR application. This AR application is run on the mobile device or tablet used by the user. Through the device's camera, users can see an AR-enhanced display that displays important information such as soil moisture levels, ambient temperature, and instructions for necessary watering. Graphic overlays and animations in the AR application provide clear visual guidance about areas that require additional watering or maintenance. In addition, this final project research also integrates an IoT-based watering automation system. When the system detects that the soil moisture level is below a specified threshold, a watering command will be sent to the control system which automatically activates the water pump to water the chili plants. Information about the watering performed is also updated on the AR app to provide continuous monitoring to the user. The results of the final project research show that implementing IoT-based AR for monitoring and watering chili plants can increase watering efficiency, reduce water waste, and provide real-time information to users. Through AR, users can easily see and understand the condition of their plants visually, thereby helping them make better decisions regarding plant care...

Keywords: *Augmented Reality, Internet of Things, Monitoring, Watering.*