

ABSTRACT

This study discusses the design and implementation of a soil pH monitoring system intended to support cactus cultivation in the field of floriculture. The system was developed using an ESP32 microcontroller integrated with a soil pH sensor, a soil moisture sensor, and an LCD display as the interface for presenting measurement results. The development process included hardware design, programming, and functional testing. The system is designed to operate without an internet connection and relies on a battery as its power source. Based on testing results, the device is capable of measuring soil pH and moisture levels in real time and can be used directly in the field by floriculture practitioners.

Keywords: Soil pH, moisture, microcontroller, monitoring, floriculture, cactus.