Community Engagement Project

Smart Irrigation

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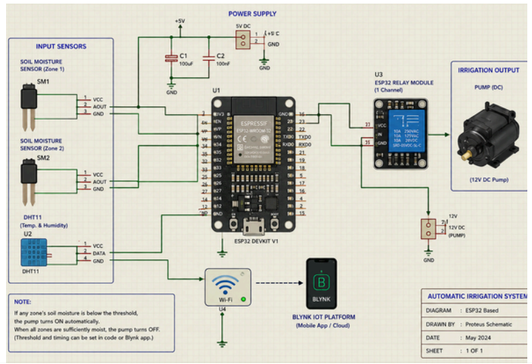
2025-2026

Abstract

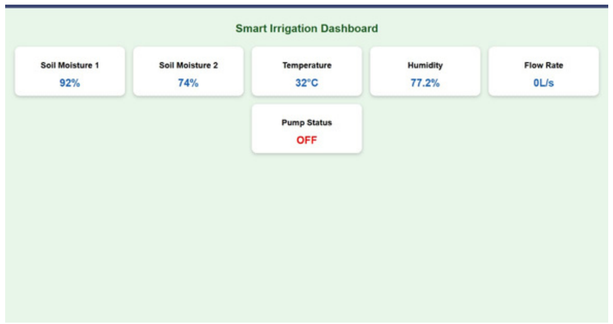
The project involves the design and development of an automated smart irrigation system that continuously monitors soil moisture and environmental conditions, automatically controls water supply, and reduces water wastage while improving irrigation efficiency for agricultural applications. The system also minimizes manual effort and promotes sustainable farming practices.

Architecture



Results

Blynk IOT Dashboard

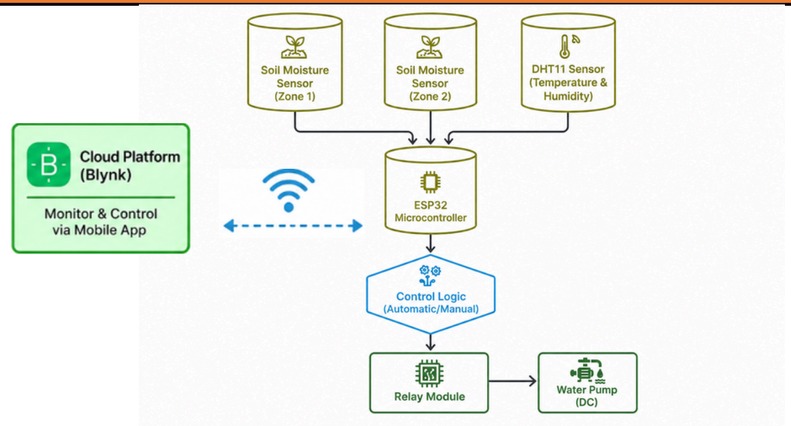


Local Website

Objectives

1. Automation:-Ability to automatically control irrigation based on real-time soil moisture conditions.
2. Water Conservation:- Reduces water wastage by supplying water only when required for crops.
3. Real-Time Monitoring:-Continuously monitors soil moisture, temperature, and humidity for efficient irrigation management.
4. Low Cost & Energy Efficient:-Uses affordable electronic components with low power consumption, making it suitable for rural farmers.

Application Description



Future Scope

1. Weather Prediction Integration: Weather forecasting APIs can be integrated for better irrigation scheduling based on rainfall conditions.
2. Solar-Powered Operation: The system can be upgraded using solar energy for improved energy efficiency and remote area applications.
3. Advanced Sensor Integration: Additional sensors such as water level and nutrient sensors can improve precision farming and crop management.

SDG: 2, 6

SANKALPANA 2026

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