

DHIVA NANDA UTAMA, 20.240.0071

**SISTEM PENYIRAMAN TANAMAN BERBASIS IOT PADA KEBUN
DEMPLOT DI DESA KLEGEN,**

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ABSTRAK

Permasalahan yang ada pada Kelompok Wanita Tani (KWT) Sri Tani Comal karena media tanam menggunakan tanah merah mempunyai struktur cepat kering, terlebih pada kondisi tertentu seperti musim kemarau, tanaman tidak mempunyai kadar air yang cukup dan berimbas pada hasil panen kurang memuaskan, sedangkan jumlah anggota Kelompok Wanita Tani (KWT) Sri Tani yang aktif hanya satu orang, jadwal penyiraman sering terabaikan. Sehingga dibangun Sistem Penyiraman Tanaman Berbasis Iot Pada Kebun Demplot Di Desa Klegen yang dapat menampilkan update kelembaban dan penyiraman berbasis IoT melalui website, sistem ini dibuat menggunakan metode waterfall melalui tahap Communication (Project Initiation & Requirements Gathering), Planning (Estimating, Scheduling, Tracking), Modeling (Analysis & Design), Construction (Code & Test), Deployment (Delivery, Support, Feedback). Sistem penyiraman tanaman berbasis IoT dirancang menggunakan alat bantu flowchart, diagram block sistem, dan lembar kerja tampilan. Hasil pengujian media menggunakan metode pengujian black box testing, white box testing, dan pengujian User Acceptance Test (UAT). Hasil pengujian menunjukkan bahwa spesifikasi media sudah sesuai dengan kebutuhan pengguna, mudah digunakan karena mudah dipahami, dapat melihat histori penyiraman, suhu, kelembaban, dan soil moisture serta dapat membantu petani dalam menyiram tanaman sesuai jadwal yang ditentukan, membantu dalam mengawasi dan mengendalikan penyiraman dari jarak jauh. Kekurangan dari sistem yang sudah dibangun yaitu perlu penambahan sistem untuk melakukan penyiraman berdasarkan kelembapan tanah, suhu dan penambahan fitur notifikasi yang menandakan air di penyimpanan sudah habis.

Kata Kunci : *Sistem Penyiraman Tanaman Berbasis IoT, Arduino, Waterfall, IoT.*

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***IOT BASED PLANT WATERING SYSTEM IN A DEMPLOT GARDENS IN
KLEGEN VILLAGE,***

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ABSTRACT

The problems that exist in the Sri Tani Comal Women's Farming Group (KWT) are because the planting medium using red soil has a structure that dries quickly, especially in certain conditions such as the dry season, the plants do not have sufficient water content and this results in unsatisfactory harvest results, while the number of members Only one person is active in the Sri Tani Women's Farming Group (KWT), and the watering schedule is often neglected. So an IoT-based plant watering system was built at the demonstration plot garden in Klegen Village which can display IoT-based humidity and watering updates via the website. This system was created using the waterfall method through the Communication (Project Initiation & Requirements Gathering), Planning (Estimating, Scheduling, Tracking) stages, Modeling (Analysis & Design), Construction (Code & Test), Deployment (Delivery, Support, Feedback). An IoT-based plant watering system is designed using flowchart tools, system block diagrams, and display worksheets. Media testing results using black box testing, white box testing, and User Acceptance Test (UAT) testing methods. The test results show that the media specifications are in accordance with user needs, easy to use because they are easy to understand, can see watering history, temperature, humidity and soil moisture and can help farmers in watering plants according to a specified schedule, assist in monitoring and controlling watering from a distance Far. The disadvantage of the system that has been built is that it requires the addition of a system for watering based on soil moisture, temperature and the addition of a notification feature indicating that the water in storage has run out.

Key Words : *Automatic Plant Watering System, Arduino, Waterfall, IoT.*