



Cityscape Greenery: Smart Management of Urban Forests

UNDERGRADUATE THESIS

Submitted as one of the requirements to obtain
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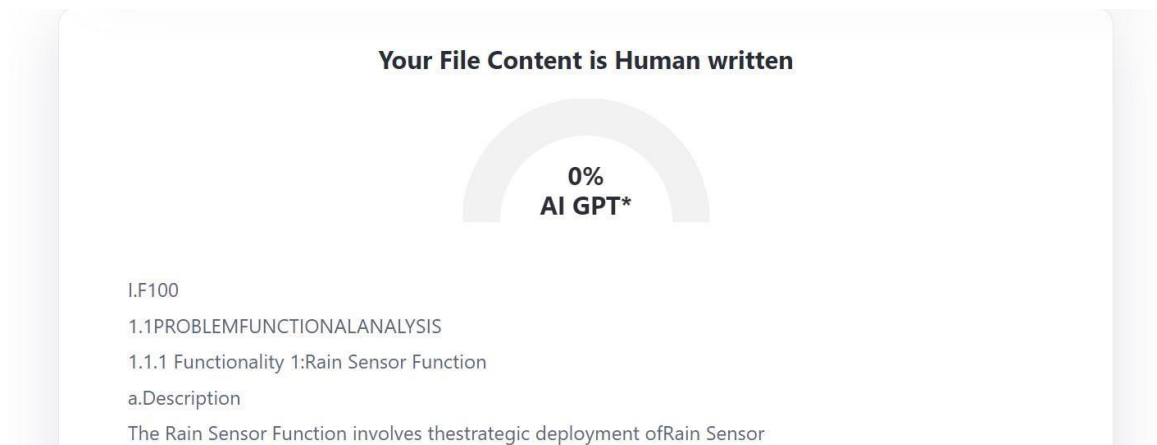
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ABSTRACT

Urban forests play a critical role in maintaining ecological balance and enhancing the quality of urban life. However, these vital ecosystems face significant challenges, including the persistent threat of forest fires. These problems are particularly acute in regions like Indonesia but are also of global concern. This report proposes an integrated technological approach to address these challenges, focusing on two pivotal systems: the Rain Sensor Function and the Smoke Detector.

The Rain Sensor Function employs advanced Rain Sensor technology to accurately measure and monitor rainfall patterns, providing essential data for forest management and fire prevention strategies. The Smoke Detector, utilizing cutting-edge surveillance technology, serves as an early warning system by swiftly identifying the presence of smoke, enabling rapid response to potential fire outbreaks. These detectors are strategically placed throughout the forest to maximize coverage and effectiveness.

The proposed interventions are part of a comprehensive strategy that includes environmental stewardship, technological innovation, community engagement, and stringent law enforcement. By integrating these components, the approach aims to enhance the resilience and sustainability of urban forest ecosystems. The Rain Sensor Function and Smoke Detector are not isolated solutions but are designed to work in tandem, providing real-time data and early detection capabilities that are crucial for proactive forest management.

This report will delve into the functionalities, implementation strategies, and potential impacts of these technologies. It will explore how accurate rainfall data can inform better irrigation practices and how early smoke detection can mitigate the devastating effects of forest fires. Additionally, the report will discuss the importance of community involvement and cooperation with local authorities to ensure the success of these initiatives.

By amalgamating these innovations, the study aims to fortify urban forest

ecosystems, ensuring their resilience and sustainable coexistence within the urban landscape. This integrated approach not only addresses immediate threats but also contributes to the long-term health and sustainability of urban forests, providing a model that can be replicated globally.

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