ABSTRACT

Indonesia has undergone significant technological advancement in recent years, leading to increased adoption of technology in various sectors. The convenience of technology has facilitated the completion of tasks and resolution of problems for many individuals. Gardening at home has become a popular hobby among the Indonesian population. However, many urban occupants in Indonesia spend a significant amount of time outside the home for work, leading to difficulties in the monitoring and maintenance of home gardens. The incorporation of Internet of Things (IoT) technologies offers a potential solution by enabling remote monitoring and control of domestic gardens.

This study aims to implement a remote monitoring system for the growth of vegetable plants using a smart greenbox, designed for the needs of urban occupants. The greenbox is equipped with sensors for soil moisture, light intensity, and temperature, which are crucial factors in vegetable cultivation. The system utilizes three microcontrollers, ESP32, equipped with Wi-Fi modules for communication between devices. The study includes the integration of two YL-69 sensors for soil moisture measurement, as well as DHT-22 and BH-1750 sensors for temperature and light intensity, respectively.

In conclusion, the proposed smart greenbox system in this study offers a practical solution for urban occupants to remotely monitor and control the growth of their vegetable plants.

Keywords: Internet of Things, Vegetable Plants, ESP32, Sensor, Smart Greenbox.