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APPLICATION OF AUTOMATIC WATERING SYSTEM BASED ON SOIL MOISTURE SENSOR FOR BONSAI PLANTS

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ABSTRACT

Bonsai plants, with their distinctive beauty and aesthetic value, have become an attraction for plant lovers in Indonesia. However, proper maintenance, especially watering, can be a challenge for many bonsai owners. In an effort to facilitate more efficient and effective maintenance, this research aims to develop an affordable and accessible soil moisture sensor-based automatic watering system. The research method includes an in-depth literature review of existing soil moisture sensor technologies and the growth characteristics of bonsai plants. Next, we designed and built a prototype watering system that can monitor soil moisture levels and automatically water bonsai plants according to their needs. Initial test results show that the system is able to maintain optimal soil conditions for bonsai plant growth. The system is also equipped with programming capabilities that allow users to customize the watering schedule according to their personal preferences. This research aims to provide a practical solution for bonsai plant lovers in Indonesia who want to maintain proper soil conditions for the growth of their plants, while minimizing the costs required for an automated watering system. This paper is expected to make a positive contribution to the maintenance of bonsai plants and serve as a guide for those interested in developing similar systems in the context of urban agriculture in Indonesia.

Keywords: arduino uno, Bonsai plants, IOT, Soil motsure sensor.

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