



COLLEGE OF COMMUNICATION AND INFORMATION TECHNOLOGY

**EFFICIENCY OF AUTOMATED WATERING SYSTEM USING
ARDUINO TECHNOLOGY APPLICATION**

**A Thesis
Presented to the Faculty of the
College of Communication and Information Technology
President Ramon Magsaysay State University Castillejos Campus
Castillejos, Zambales**

**In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science in Computer Science**

By:

**BEBAS, REY LOURENCE D.
DACANAY, BENNHANAN EZRIEL P.
GUIVENCAN, JOHN ALLEN A.
LOCSIN, JHOMAR M.**


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CERTIFICATION

This thesis entitled **"Automated Watering System Using Arduino Technology Application: A Prototype"**, prepared and submitted by **Jhomar M. Locsin, Rey Lourence D. Bebas, John Allen A. Guivencan and Bennhanan Ezriel P. Dacanay** in partial fulfillment of the requirements for the degree **Bachelor of Science in Computer Science**, has been examined and recommended for Oral Examination.


MICHAEL G. ALBINO, MIT
Adviser

APPROVAL

Approved by the **PANEL OF EXAMINERS** on Oral Examination on April 16, 2019 with the grade of _____.


NORVADEZ R. GONZALES, MBA
Chair


ROBERTO L. PASCUA, JR.
Member

Accepted in partial fulfillment of the requirements for the degree **Bachelor of Science in Computer Science**.


EMMA C. VENTURA, Ed. D.
Campus Director



ABSTRACT

Modern watering system could be effectively used to water plants when needed. The researchers developed a prototype device for automated watering system using Arduino technology application that could be used for automatically watering of plants by farmers and plant nursery owners when soil moisture were detected. Soil moisture served as basis of the Arduino microcontroller to flash water once detected that it has a low water content in the soil.

Keywords

The research made use of descriptive-qualitative technique that sought to describe situation and a survey questionnaire in gathering data. The researchers successfully administered simple purposive sampling through alpha and beta testing tools, thus alpha testers were five (5) IT experts and fifteen (15) farmers and plant nursery owners from Castillejos and San Marcelino, Zambales as beta testers. Based on ISO 9126-1 software quality standards criteria, alpha test overall rated mean of 3.60 (Excellent) on Functionality, 3.86 (Excellent) on Reliability, 3.93 (Excellent) on Usability, 3.90 (Excellent) on Efficiency and 3.60 (Excellent) on Portability while on beta test overall rated mean of 3.39 (Excellent) on Functionality, 3.38 (Excellent) on Reliability, 3.52 (Excellent) on Usability, 3.48 (Excellent) on Efficiency and 3.33 (Excellent) on Portability.



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The researchers highly recommend based on the gathered data on the respondents the use of the developed "Automated Watering System using Arduino Technology Application" as an innovative tool in watering system to conveniently utilize plants without monitoring the soil condition most of the time. The researchers suggest to the future researcher to include the flowing nutrient (hydroponics), spraying/fogging and monitoring plant house environment to the device system.

Keywords:

Automated Watering System, Arduino Microcontroller, Soil Moisture

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