PROJECT REPORT

AUTOMATICALLY WATERING PLANT USING ARDUINO AND CANYENNE IOT

SINDHU HARTONO WIBOWO
13.02.0050

Faculty of Computer Science
Soegijapranata Catholic University
2017

APPROVAL AND RATIFICATION PAGE

AUTOMATICALLY WATERING PLANT USING ARDUINO AND

CANYENNE IOT

by

SINDHU HARTONO WIBOWO – 13.02.0050

This project report has been approved and ratified

by the Faculty of Computer Science on July, 12, 2017

With approval,

Supervisor,

Rosita Herawati, ST., MIT
NPP : 058.1.2004.263

Examiners,

1.)

Suyanto EA, Ir., M.Sc
NPP : 058.1.1992.116

2.)

Hironimus Leong, S.Kom., M.Kom
NPP : 058.1.2007.273

3.)

Shinta Estri Wahyuningrum, S.Si., M.Cs
NPP : 058.1.2007.272

Dean of Faculty of Computer Science,

Endhi Widyarto Nugroho, ST., MT
NPP: 058.1.2002.254

STATEMENT OF ORIGINALITY

I, the undersigned:

Name : SINDHU HARTONO WIBOWO

ID : 13.02.0050

Certify that this project was made by myself and not copy or plagiarize from other people, except that in writing expressed to the other article. If it is proven that this project was plagiarizes or copy the other, I am ready to accept a sanction.

Semarang, July, 12, 2017

SINDHU HARTONO WIBOWO
13.02.0050

ABSTRACT

Watering plants is an activity must be done for people who have a hobby of caring for plants. But it would be a problem if the people were too busy with the job and forgot their obligations in watering.

To make plants can be watered even plant owners busy, so the automatic plant watering machine is created. This machine connected to IoT server and consists of two sensors, The sensors are sensor for check soil moisture and sensor that is used to monitor how many liters of water that used to do watering, .

The result of this project, the owner of the plant can monitor the moisture of the ground through IoT server, and the plant owner can also watering the plants remotely via IoT server.

Keyword: Arduino microcontroller, Automatic Watering System, Soil Moisture Sensor, Internet of Things, Ethernet Shield.

PREFACE

This final report consists of 6 chapters. The contents of the chapter 1 is to explain the background of this project was made and constraints on this project. For chapter 2, it will compare this project with other projects that have been made. In chapter 3 contains the research methodology is used in this project. In chapter 4 contains what microcontroller analysis is used and the outline of how it works, there is also the design of this project in the form of flowchart and design scheme. In chapter 5 will contain final conclusions of this project and suggestions for future projects.

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION.....1
1.1Background.....1
1.2Scope.....1
1.3Objective.....2
CHAPTER 2 LITERATURE STUDY.....3
2.1Arduino.....6
2.2Ethernet Shield.....7
.....7
2.3Soil moisture.....7
2.4Servo.....8
2.5LCD.....9
2.6Water Flow Sensor.....9
2.7Aquarium Liquid Filter.....10
2.8Relay.....11
CHAPTER 3 RESEARCH METHODOLOGY.....12
3.1Preparing the devices.....12
3.2 Examine and learn how to use the Sensor and searching the IoT server.....12
3.3Building The project.....13
CHAPTER 4 ANALYSIS AND DESIGN.....14
4.1Analysis.....14
4.2Design.....15
4.2.1Flowchart.....15
4.2.2Design Schematic.....17
CHAPTER 5 IMPLEMENTATION AND TESTING.....18
5.1Implementation.....18
5.2Testing.....19
CHAPTER 6 CONCLUSION.....22
6.1Conclusion.....22
6.2Further Research.....22
REFERENCES.....23
APPENDIX.....A

ILLUSTRATION INDEX

Illustration 2.1: Arduino.....6
Illustration 2.2: Ethernet Shield.....7
Illustration 2.3: Soil Moisture Sensor.....7
Illustration 2.4: Servo.....8
Illustration 2.5: LCD.....9
Illustration 2.6: Water Flow Sensor.....9
Illustration 2.7: Aquarium Liquid Filter.....10
Illustration 2.8: Relay.....11
Illustration 4.1: Flowchart.....15
Illustration 4.2: Design scheme.....17
Illustration 5.1: Connection status.....18
Illustration 5.2: Read data from sensors displayed.....19
Illustration 5.3: Arduino Get IP.....19
Illustration 5.4: the ground is moist.....20
Illustration 5.5: The ground is dry.....20
Illustration 5.6: Arduino provide input.....21