

PLANT WATERING SYSTEM USING GSM AND SOIL MOISTURE SENSOR

NORHAMIZAN BIN ISMAIL
MOHD. MU'IZZUDDIN BIN ABDUL RAZAK

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FACULTY OF ELECTRICAL ENGINEERING
UNIVERSITI TEKNOLOGI MARA
MALAYSIA

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ABSTRACT

Nowadays, gardeners and plant enthusiasts alike are all facing the same troubles that come with picking up gardening. The problems include insufficient time for gardening, garden watering inaccessibility, and equipment inefficiency in other plant irrigation systems. The objective of this project is to make garden watering more efficient and practical, allow gardeners to have time to take care of their plants, and overcome the technical limitations of previous irrigation systems. This project focuses on garden maintenance by analyzing the moisture of the soil in a set of intervals. If the dryness of the soil (which is determined by measuring the soil bulk permittivity) meets the predetermined value, it will send a message to the user's cellphone informing the user that the plant's soil is dry. Then, the owner shall decide whether to water the plant or not by replying to the text message. Further improvements might include individual plant irrigation, solar panel implementation or even garden management through smart phone application. This project features an Arduino microcontroller, specifically the Arduino Soil Sensor, a GSM unit, and a water pump system. To be exact, the project allows the gardener to determine how much water is to be watered onto the plants.

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CHAPTER 1

INTRODUCTION

1.1 Background of Study

Taking proper care of gardens have been the main concern for every gardeners around the world. Due to that, many projects have been developed in order to help maintain gardens. Most of the projects involve automatic watering system or a manual electronic watering system. From a certain point of view, both ideas have their pros and cons. Although the ideas aren't necessarily a bad idea, there are still areas of the ideas that can be further developed. For example, the automatic watering system. Of course, it's a great idea to have a garden that automatically waters itself. Usually this system would rely on timer based system to water. The user would set the time when the garden would be watered and the system would follow accordingly.

However, the problem that occurs is, when the time to water the plants is at the time when watering the plant is not necessary. As an analogy, if it rained when the system is supposed to operate, wouldn't it just be a waste? Sure anyone would say something like, "Just turn it off" or "It's just a little extra watering", somewhere along those lines. But these would just negate the point of being efficient in maintaining the garden. These systems were supposed to reduce energy expended and water used for garden watering.