

**UNIVERSITI TEKNOLOGI MARA**

**PLANT CARE WITH EFFORTLESS  
AND INTELLIGENT IOT  
WATERING**

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## **ABSTRACT**

This project is being developed to upgrade the existing watering plant system technology due to previous research only focus on the plant and the water quality. Traditionally, manual watering schedule was implemented by the farmers without the systematic real-time monitoring system which does not sustain the environment and sources. As a result, plants are occasionally overwatered or underwatered. This project present Internet of Things (IoT) plant monitoring system by utilizing soil moisture, humidity and ultrasonic controlled by Arduino UNO. The result of soil condition and humidity level will be display on the LCD. Meanwhile, the water level data presents on the blynk application through ESP8266 module. The proposed system will be greatly sustaining the environment, reduce the risk and time constrain in the monitoring the plants conditions.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

Watering system or mostly called Irrigation, is the process of applying water to the soil artificially using tubes, pumps, and sprays. Irrigation is typically employed in locations where rainfall is inconsistent, dry periods are forecast, or drought is predicted. There are several types of irrigation systems that supply water consistently to the entire field. This will maintain the health of the plant. There are many types of watering system that have been used to water all the plant which were surface irrigation, sprinkler irrigation and localized irrigation. All this irrigation system usually does not used any IoT which is a system of interrelated computing devices, mechanical and digital machines, objects, animals, or people that are provided with unique identifiers (UIDs) and the ability to transfer data without requiring human- to-human or human to-computer interaction.[1]

In this project the watering system with IoT used to make system that can maintain the growth and health of the plant automatically without using any manpower. The purpose of a watering plant system using an Arduino with IoT is to automate the process of watering plants in a more efficient and controlled way like the system implemented by [2]. In addition, the system uses sensors to detect the soil moisture level, humidity value and then triggers a pump to water the plant when the moisture level drops below a certain threshold as introduced by [3]. This type of system can be beneficial for those who want to ensure that their plants are consistently watered without having to manually check the soil moisture level and water them regularly [4]. It can also help to conserve water by only watering the plants, when necessary, as well as prevent over-watering and potential damage to the plants [5]. By adding the IoT, it will be easier to check on the spot the soil moisture level, humidity value and water level in the water tank anywhere and anytime[6].