CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Nowadays everything has been innovated. The Internet on Things (IoT) is keeping expanding rapidly whereas a lot of things are depending on the internet. In horticulture, people are still using manual process to manage their flowers and plants.

Plant need enough water to grow and frequent watering to maintain a green and healthy. The difficulty is exist when people are busy with their daily work and do not have enough time for watering activity. Besides that, people do not know the exact time and enough volume of water for a good condition of soil in a session of irrigation activity. The problem also occurred when no one is taking good care of the plant when user leave on vacation or spend long periods of time away from home. As we can see, there are several invention on this plant watering activity such as water sprinkler and water jet, but still need human to control the irrigation process manually.

In order to overcome this problem, Autonomous Horticulture Irrigation System is proposed which provide a systematic irrigation activities. User of this system can monitor the plant remotely from anywhere place connected with the internet and view result on the irrigation process. With deployment of this system, the innovation of internet on things applied in horticulture field help to ease human plantation and horticulture irrigation activities. Last but not least, with existing of this system, we can move on from the traditional watering plant.
1.2 PROBLEM STATEMENT

i. People are busy with their daily work and do not have enough time for watering activity to maintain a beautiful and healthy plant.

ii. People do not know the exact time to perform an irrigation activity and the exact amount of water for the best soil condition in a session of irrigation activity.

iii. There is no people will taking good care of a plant when user leave on vacation or spend long periods of time away from home.

1.3 OBJECTIVES

1.3.1 Aim

The Aim of this project is to develop a prototype device for Autonomous Horticulture Irrigation System to handle systematic watering activity, hence keep the soil on good moisture and update data condition to the user.

1.3.2 Objectives

i. To develop automated and computerise plant irrigation system.

ii. To implement the functionality Arduino with combination of soil moisture sensor and solenoid valve to irrigate plants with enough water.

iii. To maintain the irrigation activity for each area of horticulture which perform by Autonomous Horticulture Irrigation System.

1.4 SCOPE OF PROJECT

This project will be conducted in a small garden as the research area, a device as the system and user as the administrator.
1.4.1 Device

The device will execute the irrigation activity systematically based on the moisture of soil read by the soil moisture sensor send the watering data to maintain the plants fertile and healthy.

1.4.2 User

User will manage the entire system and control it remotely by interface through wireless connection. User also can monitor the irrigation activity done by the system.

1.4.3 Target Area

The Autonomous Horticulture Irrigation System will be placed at a mini garden with Wi-Fi connection to support the communication within the area of the garden.

1.5 SUMMARY

To summarize, this chapter discuss about the idea of this project, problem statement, scope and the objective to achieve. The main idea of this project is to develop a system to handle a systematic watering activity, hence keep the soil on good moisture condition. The three main problems are firstly, people do not have enough time to spend for watering activity. Second, people do not know volume of water for a good condition of soil in a session of irrigation activity. The problem also occurred when no one is taking good care of the plant when user leave on vacation. To resolve this problem, the idea to develop The Autonomous Horticulture Irrigation System which provide an automated and systematic irrigation activities. User of this system can monitor their plant condition from anyplace connected with the internet and view result on the watering activity. With the development of Internet on Things (IoT), we can implementing a communication technology to maintain the health of a plant and move on from the traditional watering plant to urban gardening.