

AUTOMATED INDOOR PLANT WATERING SYSTEM

Prepared by: Cham Kah Wai

ABSTRACT

In modern era, automation technologies are inevitable to provide human a higher standard of living and better way of life. One of the most persistent themes in the social sciences, history, and the humanities is the impact of technology and technological change on all aspects of social life. Major changes in human life have been associated with major technological changes.

This project delivers a system to water the plant in the pot automatically or user pre-scheduled intervals. The system will detect the surrounding temperature and the moisture level of the soil in the pot, and will automatically dispense the required volume of the water to the pot. At another mode of operation, the system will dispense the water at the pre-set intervals by hours. When the surrounding temperature changes, whether rainy day or a very warm day is, the system will adopt another set of water dispensing schedule to ensure the plant obtains the needed water content. Once the temperature returns to normal level, the system will return to its usual pre-set water dispensing schedules. As for the water level at the reserved tank which holds water for the dispenser drop to critical level, the system will prompt the user with beeping sound.

The system runs on a PIC16F877A microchip controller. It has sufficient pins for input and output pins which serves different parts in the project that interfaced. Sensors such as temperature sensor and moisture sensors are connected to the pins and serve as input pins.

The system also has a LCD display (Liquid Crystal Display) to display the reading for temperature and moisture of the soil. It displays an interface allows user to pre-set a schedule for dispensing the water. These features enable user knowing the condition of the plant which applied with the system. At this point, push switch button adopted in system which allow user to do selection of time to create pre-schedule for water to dispense.

A solenoid valve is used to control the water flow which connected to the water tank. As it connected to the outputs pins of PIC16F887A, the time duration of valve is open and amount of water dispensed is controlled according to the selection.

Buzzer is another feature of the system which alert the user that water tank is out of water at critical point.

Keywords: *Automated Indoor Plant Watering System, Microcontroller, Temperature, Moisture, LCD (Liquid Crystal Display), Push Switch Button, Solenoid Valve, Buzzer.*