

# Automatic Plant Growth Monitor

Keith · Sherine



# Project Summary - Introduction

- This machine can provide a comfortable growth environment for plants. For example, it can monitor the growth progress of plants, automatically recycle rainwater, maintain balanced watering, fertilize and give plants enough light.
- It can also avoid forgetting to water, watering too much when it rains, lack of nutrients, being bitten by pests and so on.
- Therefore, the automatic plant growth monitor is very smart and convenient, and hardly requires human hands.



motivation

I love plants very much, but once, I went on a trip, but when I got home, I found that most of the plants were withered. Therefore, we thought of the Fully Automatic Plant Growth Monitor.





## usage

- First of all, the user needs to put a potted plant in the automatic plant monitoring grower.
- A fully automatic plant growth monitor then monitors the growth progress of the plants , and automatically breed
- In the lower right corner of the screen and with the IoT module is displayed a specific software online. It will display the temperature, humidity and growth status in the automatic plant growth monitor.
- Finally, if your potted plant is done growing, remove the potted plant and turn off the Multi-Plant Growth Monitor.



## Basic idea 1

The fully automatic plant growth monitor uses a transparent offset plate with holes as the shell, so it is very ventilated. The black part is the main control board. The sensors are:

- moisture sensor. Resistive Soil Moisture Sensor
- Temperature and humidity sensor
- Analog ambient light sensor
- Liquid flow sensor. Screen (LCD12864)
- Normally closed water inlet solenoid valve · yellow light
- IoT module. Ultrasonic distance sensor

## Basic idea 2

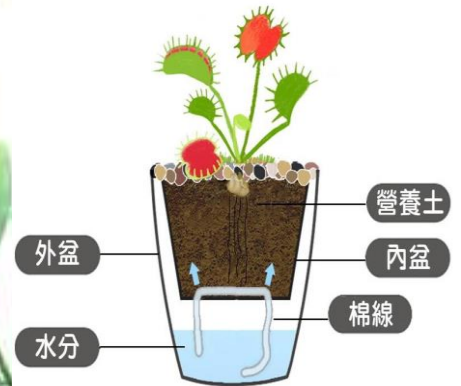
- An Ultrasonic Distance Sensor can be installed on the top and rear of the automatic plant growth monitor, and this Ultrasonic Distance Sensor can measure the distance between the plant and the Ultrasonic Distance Sensor, and judge the size.
- When the plants are sprouting, they need to be watered more, and then the plants will grow bigger and bigger. The more water you pour, the more big is your plant.
- If the light of the automatic plant growth monitor is not bright, the automatic plant growth monitor can automatically turn on the yellow light to imitate the sunlight..





## Basic idea 3

- When it rains, the monitor will cover the baffle, and the tube next to the machine will catch part of the rainwater, and then let the rainwater flow into the bottom of the flower pot when it is time to pour water, and then use the cotton rope to seep the water into the soil.
- The nutrient solution behind the flower pot will be injected into the soil through the normally closed water inlet solenoid valve and the liquid flow sensor. But if there is no rain, this machine will be flooded twice a day.



## inquiry process

When we are making automatic plant growth monitors, there is a lot to look out for. For example: assembly, conception, programming, etc.





## Summarize

This fully automatic plant growth monitor is very smart and power-saving, it can also help people who are busy with work and have no time to plant, to protect the environment and do our best to stop the global warming! Our report ends here,thank you!



Thank

you!

