Greenhouse Temp System

INSTRUCTION BOOKLET

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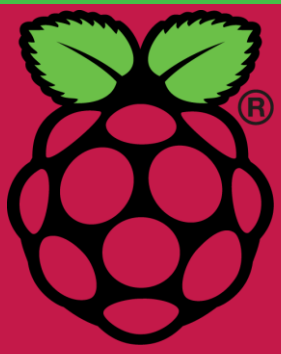


Table of Contents

Introduction

Congratulation on the purchase of your very own Greenhouse Temp System. This document contains the Instruction Manual of how to use the Automated Greenhouse Monitoring System. The Automated Greenhouse Monitoring System uses a variety of different sensors to measure the health of the Greenhouse plants, allowing you to see the progress of their plants, while ensuring that they are informed of the current temperature, humidity and water level of the plants.

Installation

The Greenhouse Monitoring Kit should come as a self-contained kit. When turned on, it will automatically try and connect to a known Wi-Fi network, and if it is connected via Ethernet, it will automatically try and get the settings from the DHCP Server.

On first start-up, the 2 Python Scripts will be automatically launched when the Raspberry Pi has power. If for some reason these fail to start, the user can run them by running the **tempsystem.bs** script located in the Greenhouse Folder on the Desktop.

When installing the Greenhouse Monitoring Kit, ensure that the Soil Fork is stuck firmly into the soil of the plant/greenhouse that you wish to monitor. The Camera needs to be pointed at the plants or whatever you want to view, with the cable connector facing upwards.

Ensure that the Temperature Sensor is sticking out without any obstructions, and that none of the wires have become unplugged.

Viewing Collected Data

The Website which contains the data can be viewed at the IP address of the raspberry pi, or by going to the raspberry's hostname https://greenhousekit/ using a web browser on a desktop or mobile device regardless of Operating System. This IP Address will vary depending on the network that it is connected to, which for the SIT phi-5gHz network is 192.168.80.167.

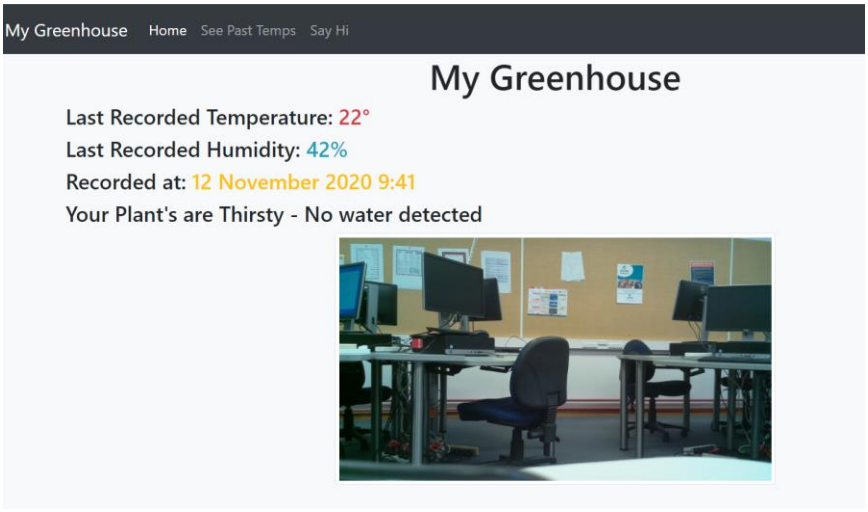
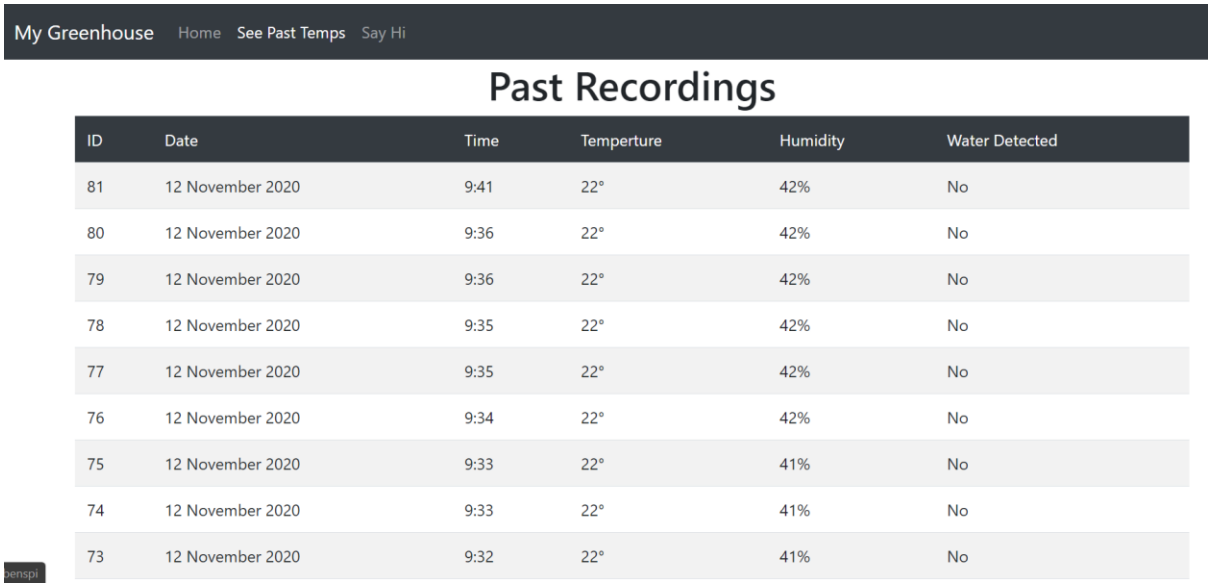


Figure 1. Website Screenshot

The website will auto-refresh every 30 minutes to get the latest readings. The sensors will update and get new recordings every 30 minutes using the supplied software.

Past Readings

Past sensor readings can be viewed by clicking the option in the navigation bar of the website. This will load a webpage with a table displaying the past 50 recordings. The latest reading will be at the top of the table, with the oldest (within the last 50 recordings) at the bottom of the table.



ID	Date	Time	Temperture	Humidity	Water Detected
81	12 November 2020	9:41	22°	42%	No
80	12 November 2020	9:36	22°	42%	No
79	12 November 2020	9:36	22°	42%	No
78	12 November 2020	9:35	22°	42%	No
77	12 November 2020	9:35	22°	42%	No
76	12 November 2020	9:34	22°	42%	No
75	12 November 2020	9:33	22°	41%	No
74	12 November 2020	9:33	22°	41%	No
73	12 November 2020	9:32	22°	41%	No

Figure 2. Past Recordings Webpage

Saying Hi to your Plants

You can say Hi to your plants by clicking the button located in the navbar of the website. This will light up a couple of LEDs allowing your plants to know that you are watching and care about them.

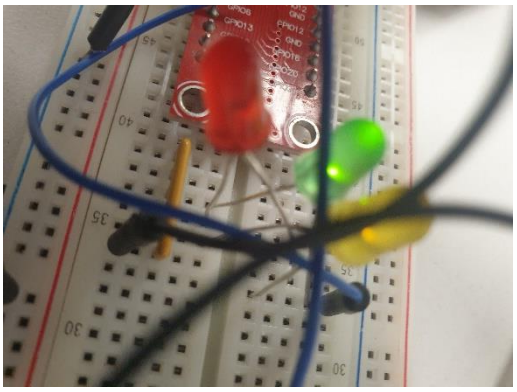


Figure 3. Viewing the Hi Page will light up the LEDs and say Hi to the Plants

Troubleshooting

If something does not appear to be working, contact your local Geek to get them to check the wiring and configuration.

- Check that it has power. If it has powered a Red LED will be lit on the front of the Raspberry Pi.

- Check that it is currently connected to a network. If connecting via a Wi-Fi Network, plug in an HDMI Cable to the Raspberry Pi and check that it has connected to the Wi-Fi Network and has an assigned IP Address. If connecting via Ethernet, ensure that the ethernet cable is plugged in and the raspberry pi has been assigned an IP Address

- If the camera is not working – check that it is firmly in the Camera Connector of the Raspberry Pi.

- If the Temperature/Soil Sensors are not working – check that these are correctly plugged in. If in doubt, contact your local Geek.

- Make sure the Soil Fork is stuck in Soil to get a reading. The sensitivity of the soil fork can be adjusted with a Philips Screwdriver by turning the small dial on the small interface board.

Wiring Diagram