User Manual

The Martian Project

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Hardware Setup

After unpacking the product, the first step is to assemble the circuit. First, we connect the power pin(3v3) on the esp to an open row on the breadboard, or more conveniently the red vertical portion marked with a plus on the side. Then we connect each sensor's power pin to that row, each sensor will have a pin labeled V which will be the power pin. Then we do the same but with the ground pins, on the sensor the ground pins are labeled with G and on the Esp it is labeled as gnd. Now that we have that set up All we need to do is plug in our Esp if it has the plant monitoring software installed. If not will need to use thonny to download the micro python package and then copy the esp-code folder from https://github.com/cfinnegan827/CS410-SP2025-plant-monitoring-system. Now any time we plug in the esp it will automatically run the plant monitoring software.

Home Setup

To setup the plant monitoring system for your home first you will need to make an account on the projects website. Follow the registration functions but adding your name, username, and email address and create a password. After you follow these steps, you will be redirected to the home page but now you will have access to your plant dashboard, which will display some numerical data of plant health. After you will need to plug in your monitoring system, your device will attempt to connect to the dummy credentials hardcoded on the device, when this fails the device will enter setup mode and become an access point.

From here you will connect to the WIFI that the board is transmitting, plant-monitoring, and connect with the password "plant-monitoring123". Once connected you will have to go to the web page the

board is serving. Here you will enter the WIFI credentials of the location you are planning on having the plant monitor. Once you hit submit the device will reboot and immediately start collecting data in intervals of 5 minutes.

If the device needs to be moved and unplugged the timer will stop and the device will not collect data anymore until the device is plugged back in. Once the device is plugged back in it will reconnect automatically and the 5 minute time will restart and be visible on the dashboard.

Things To Know

- Always keep the light sensor visible to light/sun, if the sensor is facing a wall or even covered the readings will be a skewed low value or possibly zero.
- Temperature and humidity is a measure of the environment not the actual temperature and humidity of the plant itself rather the surrounding area.
- The Esp is a low-level device, once in setup mode the WIFI might not appear on your list of available networks right away.
- The WIFI credential you input in setup mode must be able to support 2.4ghz as the board will not be able to connect to 5ghz networks.