Soil Moisture Detection and Notification

Resuta, Ashley

The objective of this project was to use an intelligent moisture sensor to create a project that tests the moisture level of soil and alerts the plant owner if the plant needs to be watered. Applications of this program include household plants, nurseries, and botanical gardens. Initial procedure included learning the basics of the Arduino Uno and connecting the CC300 WiFi Module and multiple soil moisture sensors to the Arduino. After verifying the hardware worked, methods were written to test moisture level and to send an email (which notifies the user when their plant needs watering). Finally, a main program was written to combine all methods and create a working soil moisture detection and notification project. The program starts with the setup, then enters a loop. While there are more plants that need to be tested for moisture levels, the loop is entered. Inside the loop, the sensor reads the moisture value, and if the plant needs water, the Wifi Module initializes and then sends an email to the user, alerting them of the specific plant that needs to be watered. Afterwards, the program returns to the top of the loop and determines if there are more plants that need to be tested. If so, the loop repeats; if not, there is a delay for 24 hours, and then the loop starts again. Testing of this program proved successful! Emails were only received if a plant needed watering and the program utilized multiple soil moisture sensors in different plants.

Awards Won: