My E-Gardener

An Arduino project for the course IT-project that is taken with regards to our B.Sc in Software Engineering at the University of The Faroe Islands

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Abstract

We were asked to do an it project using an arduino. We thought that a automated gardening system would be a good idea. Our ardunio project entails an automated system that waters, measures moisture, heat and light exposure. That is done by customizing an Arduino Uno which has a moisture-, heat and light sensor, which measure exactly that.

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Acknowledgments

Than you ebay for providing us with the necessary products.

1 Introduction

As said our project is about a system that automates taking care of some vegetation of some kind, be it house plants, garden plants or even vegetative food. We have seen that the interest for growing vegetables in the Faroe Islands has been increased with initiatives such as "Eplafestivalurin", and "Veltan" which has received government funding. Veltan's goal is to grow and sell Faroese vegetables and fruits, and give everyone a place with resources, so that they are able to grow their own things.

Veltan's coincides well with UN's campaign "Goal 2:Zero Targets" which is trying to change and optimize the world's agriculture in hopes to feed the 815 people that are undernourished today and the additional 2 billions people expected to be malnourished in 2050[1]. Agriculture derived foot is more energy efficient than meat farming[2] and contributes less pollution, because energy consumption is wasted the higher up we go through the food chain, so optimizing our production in agricultural farming would be the best way to achieve UN's goal.

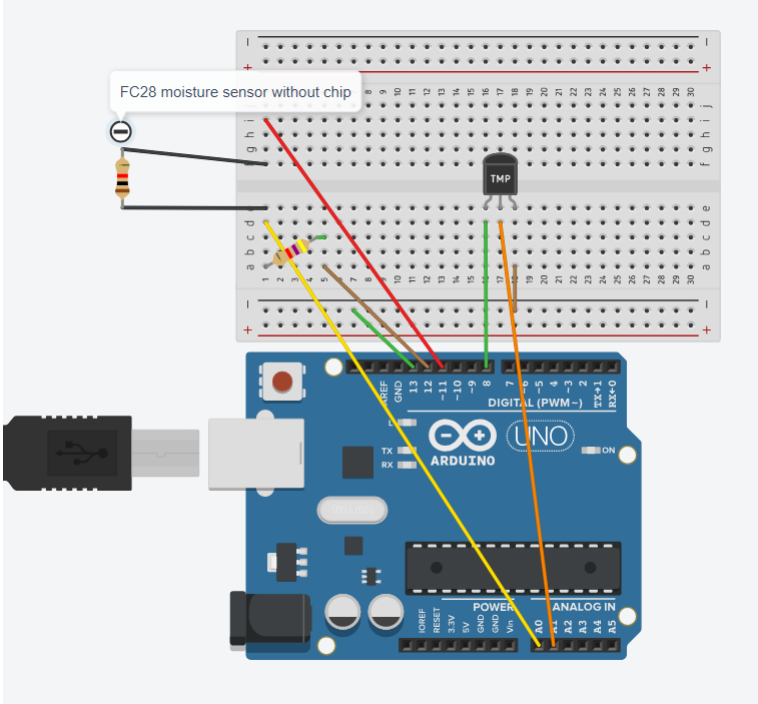
Taking care of vegetation is task that is easy to forget which is why we thought that it was a process that was convenient to automate, and a cheap automated gardening system for the everyday household might also help with UN's goals, as it would mean that everyone had easy and cheap tool to help them with growing their crops.

2 Materials

The Arduino Uno, TMP36GZ heat sensor, resistors and the cables which we use in this project, was provided by the one responsible by the course. We used at the start a FC28 moisture sensor, but it generally uses a DC pulse which means that it corrodes over a period of time, which could damage the plant and soil. We changed it to use an AC pulse, but we decided to opt for Capacitive Soil Moisture Sensor V1.2 that is Corrosion Resistant.

[1] https://www.un.org/sustainabledevelopment/hunger/

[2] •



We started testing the project with the FC28 moisture until we received the new sensor. We made it so that it used an AC pulse so that it wouldn't corrode, and that setup can be seen in image above.

3 Code

4 Attachments