Automated Water Delivery System

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Introduction

The Schenectady ARC is a non profit organization which provides resources to help individuals with disabilities. The center advocates for independency through the maintenance of their greenhouse. The current watering system does not deliver water on one tray independently, requires constant supervision, and is not automatic. The goal is to make the system more user friendly, deliver water respective to the tray, and give an option to function under supervision or not.

Current Design
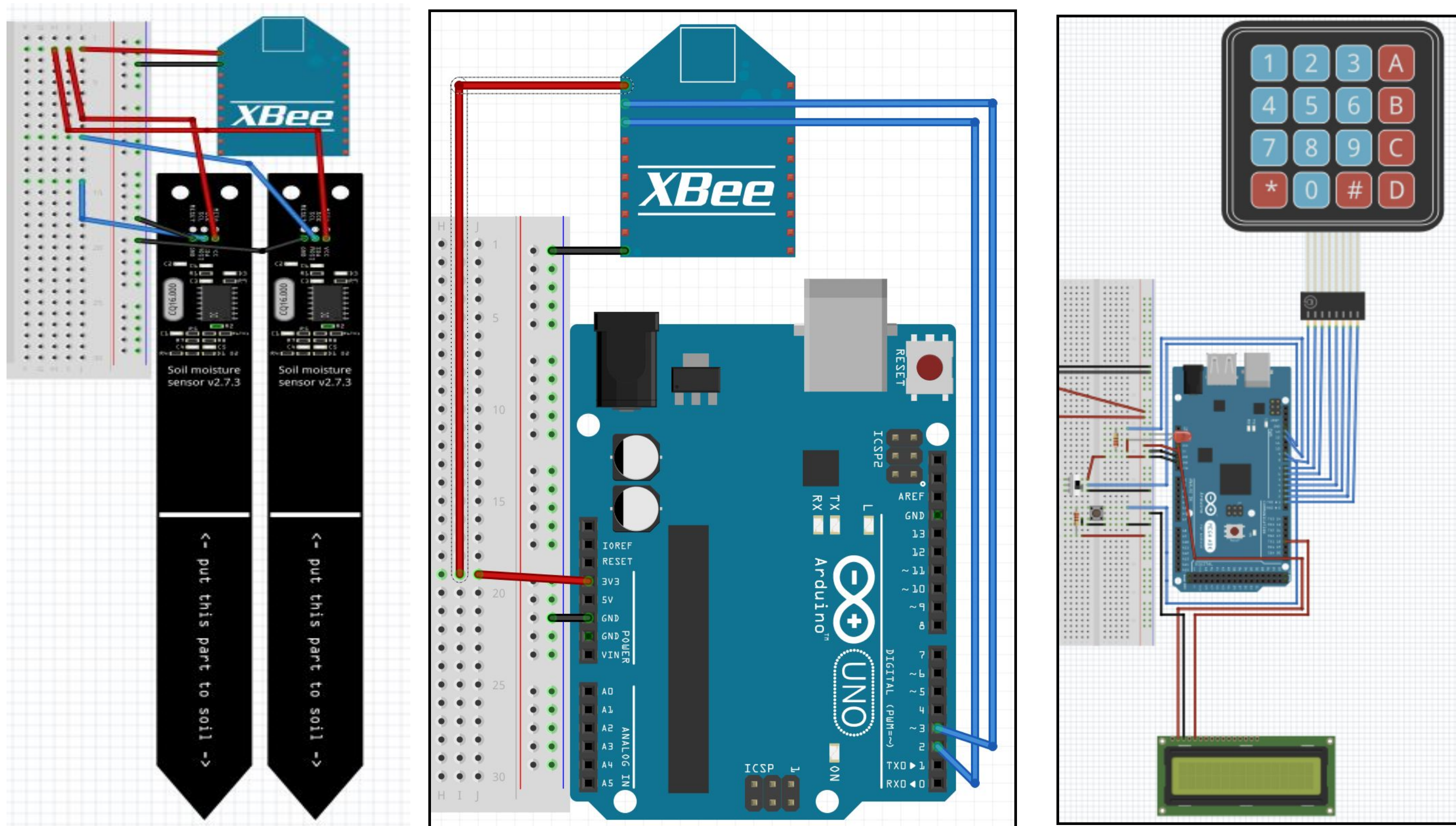
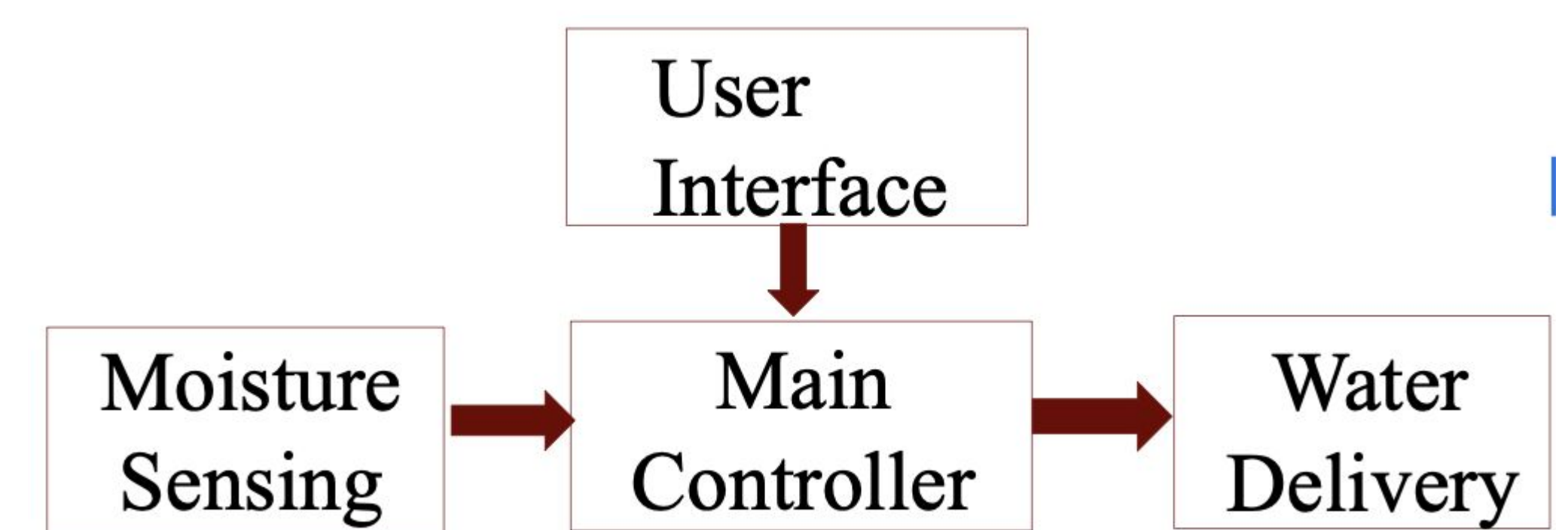**Moisture sensing unit**   **Main controller & user interface**

The collected moisture content is successfully read on the Xbee and wireless sent to the main controller. The slide switch enables alternating between the manual and automatic mode. In automatic mode, a threshold value is set and compared to the moisture content.

If manual, the user sets the threshold. The water system is triggered if the moisture content is less until the levels reach the threshold.

Systems Overview

Design Specifications

- Reading moisture levels every 5 minutes.
- Enclosed in a proper waterproof case to avoid loose wires, loss of energy or watering outside the trays.
- Safe watering by ensuring that the soil is not underwatered or overwatered. The delivery system should not affect the current water system of the ARC.
- Providing automatic and manual option to operate
- Easy to operate understand and maintain
- Cost effective <$400 USD
- Safe to the environment and the user

Future Works

Implementing the user interface within a touchscreen

Acknowledgments