

# UNDERSTANDING WATER LEVEL SENSORS AT A HIGH SCHOOL LEVEL



MINI PRESENTATION



## Basics of Github:

- **Git** is used to track changes to code and other files, especially text files.
- **Github** is a shared hub of your projects and assignments.
- **Github Desktop** is the most practical way to manage data in repositories.
- **VS Code** is a program intended for the editing and creating of code stored within Github.

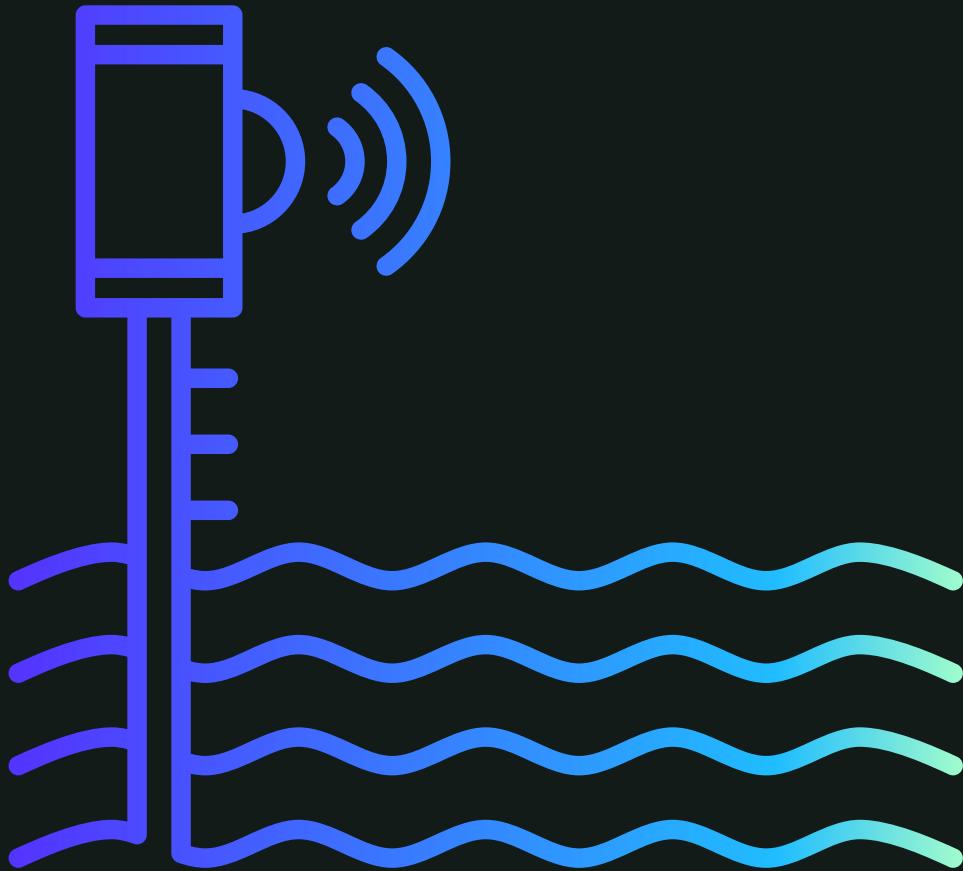
## Within Github:

- Copy and paste code into the VS code project (.cpp file)
- Grab Boron and Blink LED to repository (hold mode until blue light blinks)
- Flash Code to boron within VS Code
- Once Flashed, system will run for designated time (datalog state-11seconds)

# Water Level Sensors:

## How it works:

- Sensors utilize an ultrasonic rangefinder to emit a signal toward the water. The sensor logs the time it takes for this signal to reach the water and “bounce” back to the rangefinder.
- The program flashed to the microcontroller analyzes the data from the sensor, logging the change in water level.



## Why they are important:

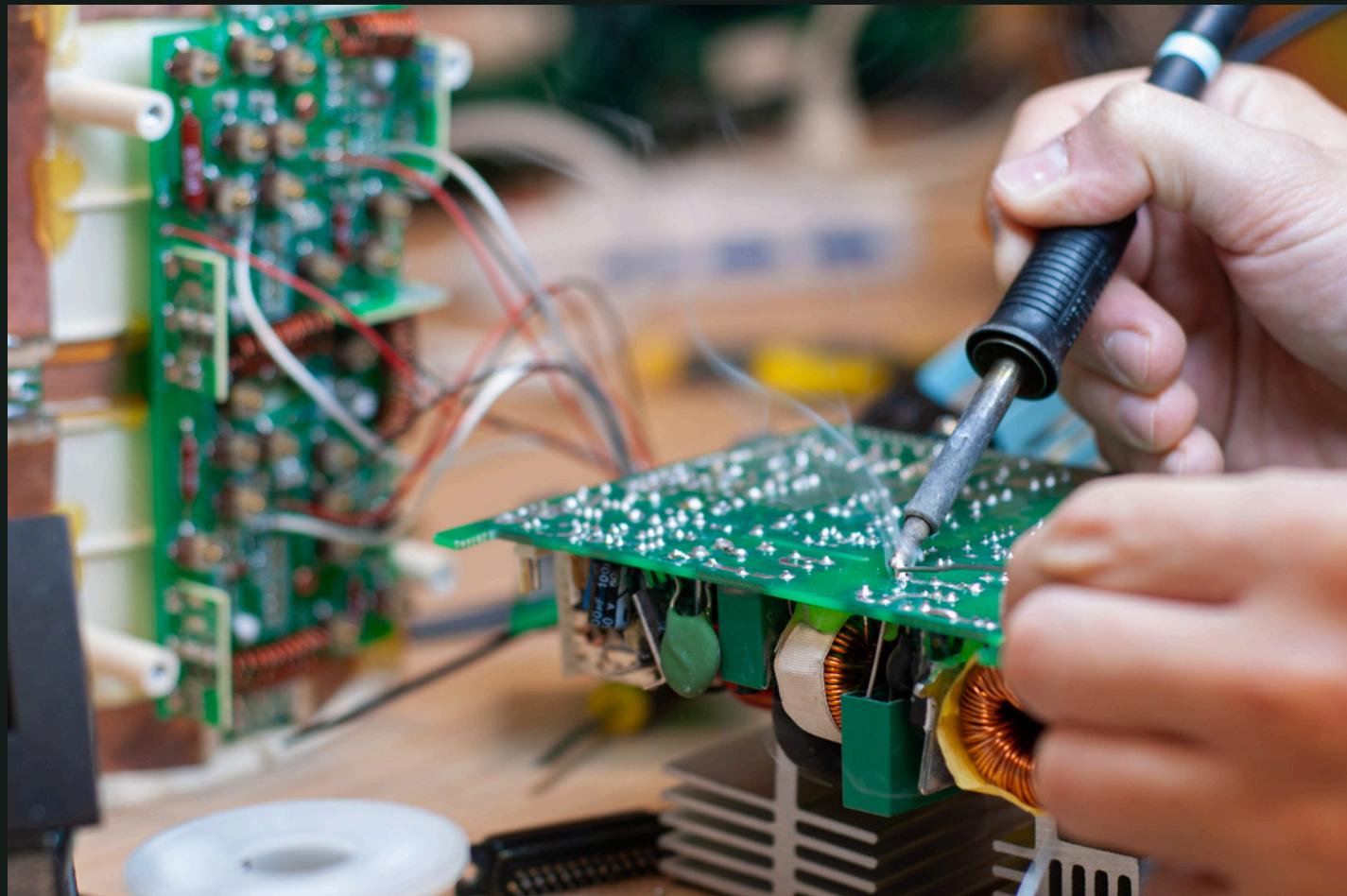
- Record real-time data on changes in water level, in a fixed location.
- Works as an early warning system for floods.
- Aids in improving water safety.



# Requirements:

## Soldering:

- Always wear safety goggles.
- Hold soldering iron at an angle in one hand, with the solder in the other.
- Briefly tap the two together over area of interest.
- Ensure complete coverage.
- Repeat if necessary.



## Equipment:

- PolyCase
- Wiring (4-pin cable)
- SD Card
- Adalogger Featherwing
- IO Rodeo Tripler PCB
- Solar System
- Adafruit Featherwing OLED
- IO Rodeo adapter PCB
- Ultrasonic rangefinder
- USB-A to Micro-B cable

Utilizing Github and associated programs allows for further devices to be used. Numerous different types of sensors such as: environmental, motion or image sensors.

