CS 241 — Final Project

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Bear Aware Smart Latch

🔗 https://github.com/TechSolomon/cs241

Initial Idea & Problem Statement

- Secure outdoor trash cans (roll carts) against bears
- Record wildlife interactions with humans in Alaska
- Alert owner about intruders since last visit

Image Credit: KMXT (Kodiak, Alaska)

Image Credit: Kodiak Daily Mirror (left) & ADN (right)
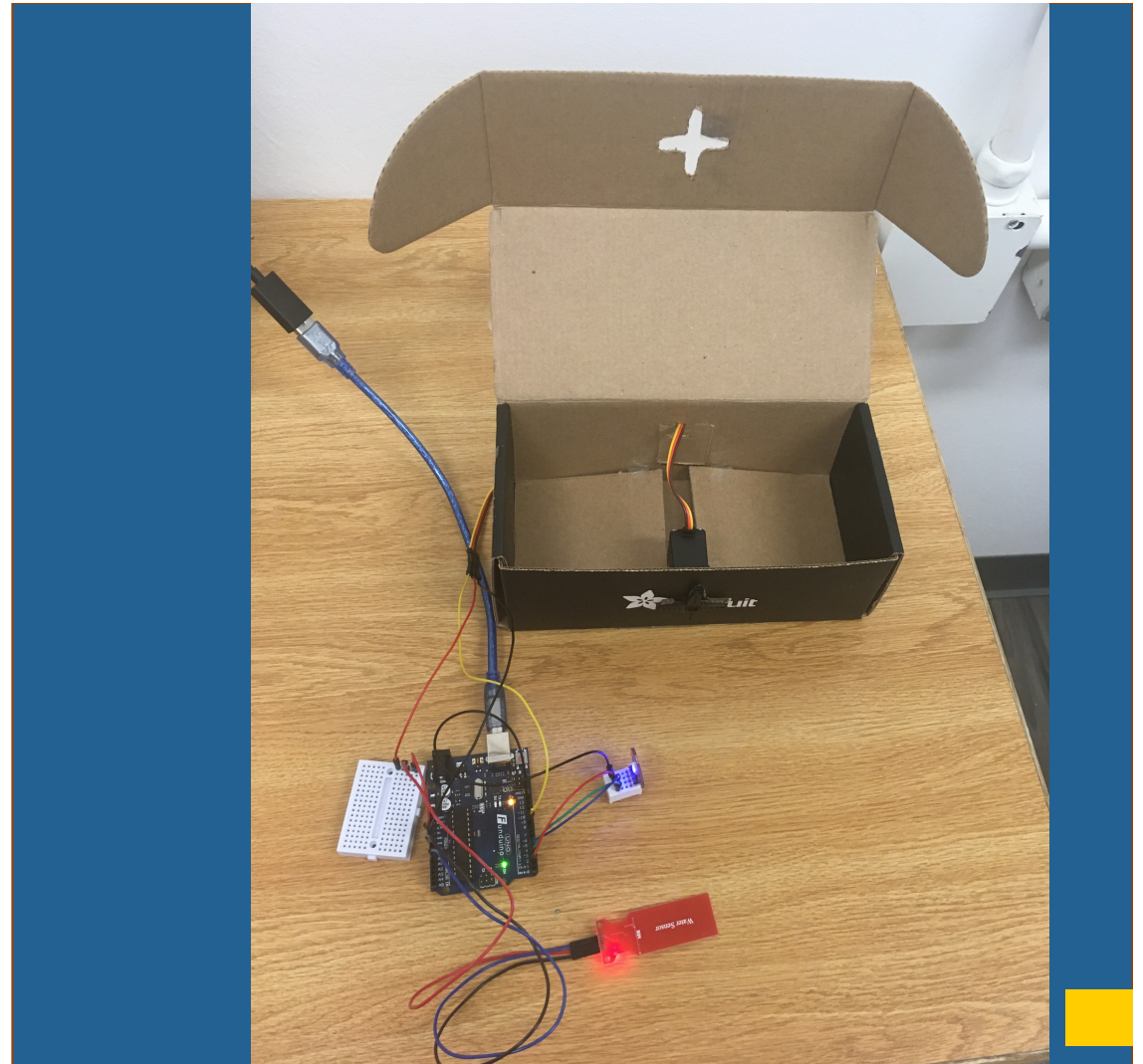
Project Parts

- Arduino Uno
- Mini Solderless Breadboard – 4x4 Points
- Standard servo – TowerPro SG-5010
    - Substitute for more powerful locking mechanism
- Water Sensor
- RGB LED (K851264)

Arduino Project Demo

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Draft Prototype

1. Roll cart dimensions

2. Large pizza box design

3. "Customized" Adafruit cardboard box

Lessons Learned

- Ordering parts
- Reading documentation
- Interactions between multiple components
- Time management
- Scope creep

Future Improvements

- IFTTT/Twilio SMS integration
- Independent power supply
  - Rechargeable batteries or solar powered
- Accelerometer & Magnetometer
  - STEMMA QT / Quiic JST SH 4-pin Cable
    - Ordered the wrong part – need male headers ☹
- Outdoor weather testing
  - Cold weather & water limitations

Questions?