Metrigloves

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Materials

- Construction gloves (Handyman Flex Grip)
- Arduino Uno R3
- Gyroscope (IMU Breakout - MPU 9250)
- Color sensor (TCS230, TCS34725)
- Optical Sensor (OV7670 CMOS Camera Module)
- Buttons
- LCD (2.0" 320x240 Color IPS TFT Display)
- Distance Sensor (Ultrasonic, IR Proximity Sensor)

Software Flowchart

Hardware

- Purple button = distance between gloves
- Green button = color detection (attached to camera or color sensor)
- Red button = screw detection (attached to visual sensor)
- Other buttons can have various functions (TBD)

indestructables.com

Problem

This glove is meant to make it easier for construction workers to get their job done by offering them a variety of tools for their hand. Inaccurate measurements when doing construction can be fatal. With construction work constituting 21% of deaths for private industries, any improvement to the workers' safety is beneficial. The metriglove will combine construction tools with modern day technology to make measurement and other simple recognition tasks seamless, thus improving their efficiency and quality of work.
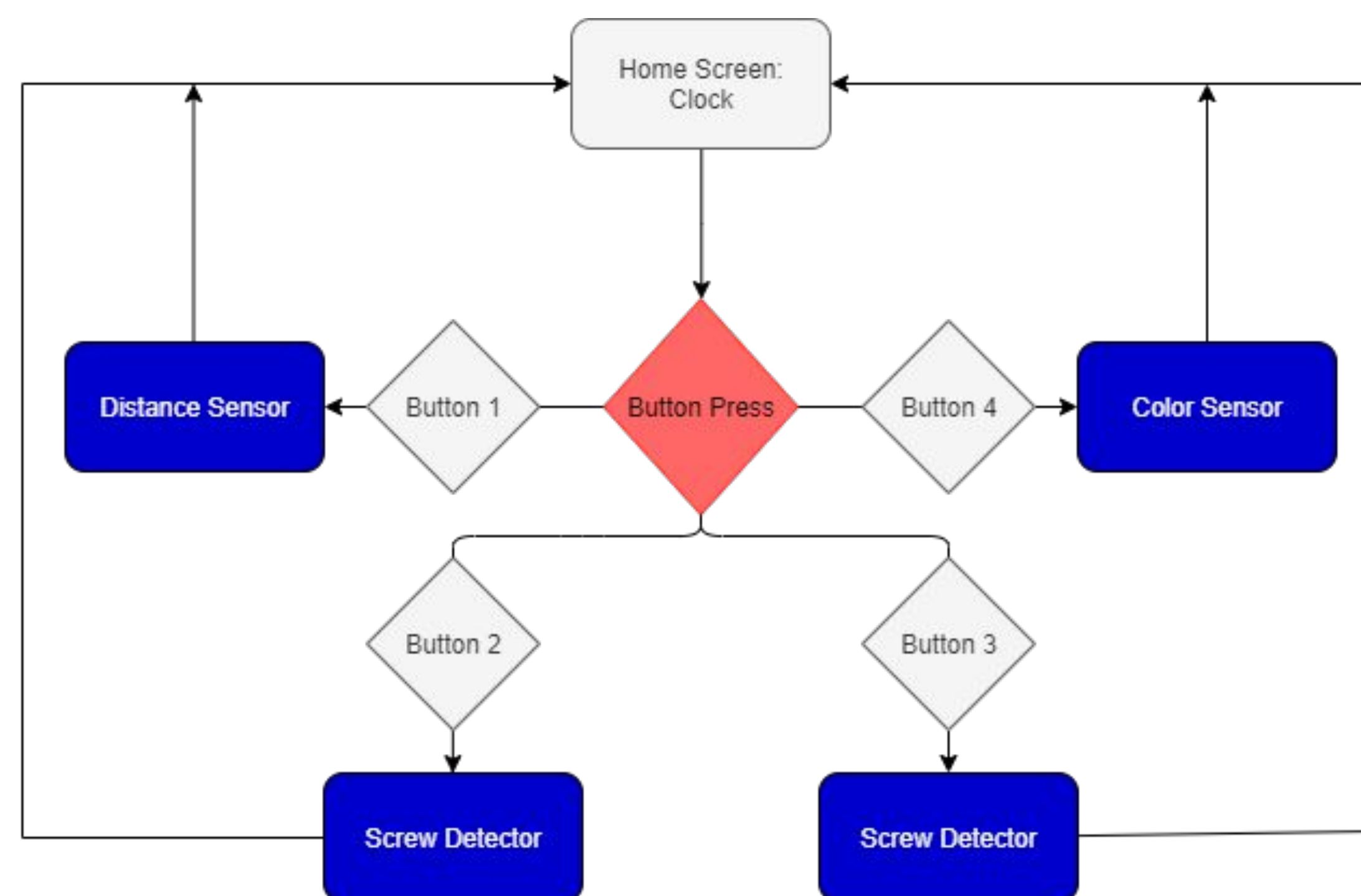
Current Progress

- Finished researching
- Finished materials list
- Finished order form/purchasing
- Started coding the different sensors
  - Color Sensor
  - Ultrasonic Distance Sensor

Future Challenges

- Finish coding sensors
- Debug sensors to make sure accurate
- Integrate hardware onto glove
- Figure out currents/voltages
- Make sure LCD accommodates all results
- Moving some hardware to other glove with 2nd Arduino

References

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