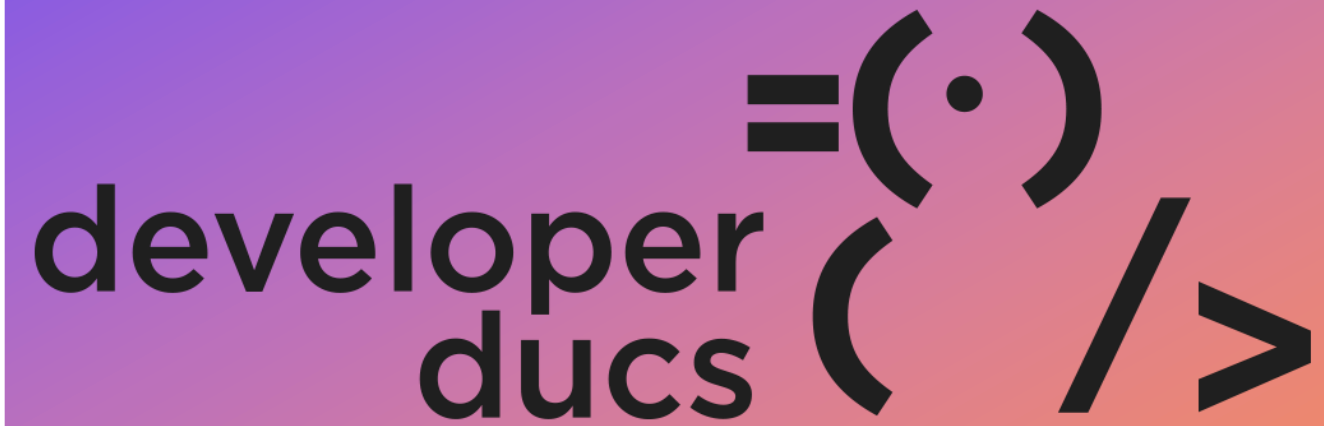
MIDTERM PRESENTATION

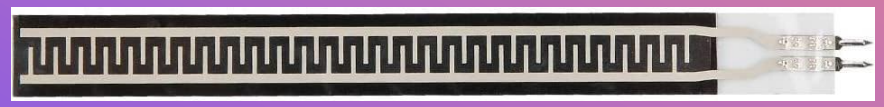


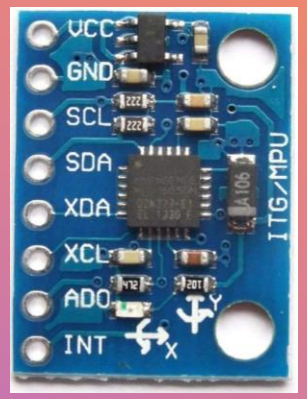
Levi Graham
Riley Nichols

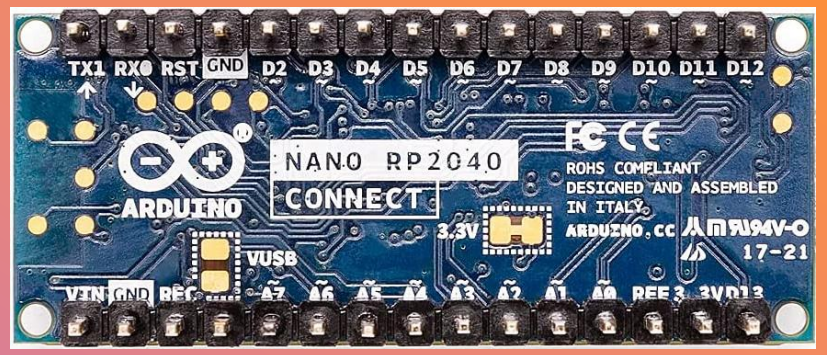
PROJECT OVERVIEW

- Research and Develop a haptic glove for use as an input device for a computer.
- The glove will read the user's hand movements and translate them to meaningful input for the computer.
- Develop the glove so that it will be able to be used in a sandbox simulation built with a game engine.

SPRINT 1



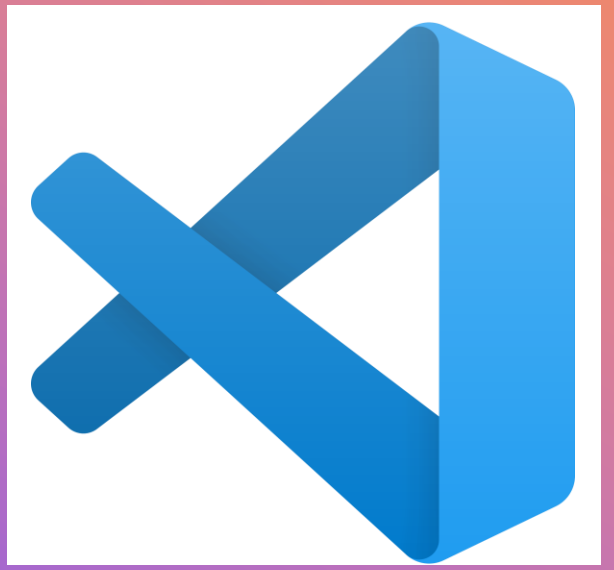




Movement	Movement Description	Sensor	Number Needed Per Hand
Hinge Finger Joint	The Bending of the fingers when opening and closing	Flex Sensor	5
Ball and Socket	The spreading of the fingers when open	???	???
Wrist Inflexion	The bending of the hand in 3-d space from vertical to horizontal with spin	IMU	1
Hand Positioning	How and where the hand sits in 3-d Virtual space	IMU	1
Hand Movement	Movement of the hand in comparison to the body	IMU & Arduino	1

SPRINT 2

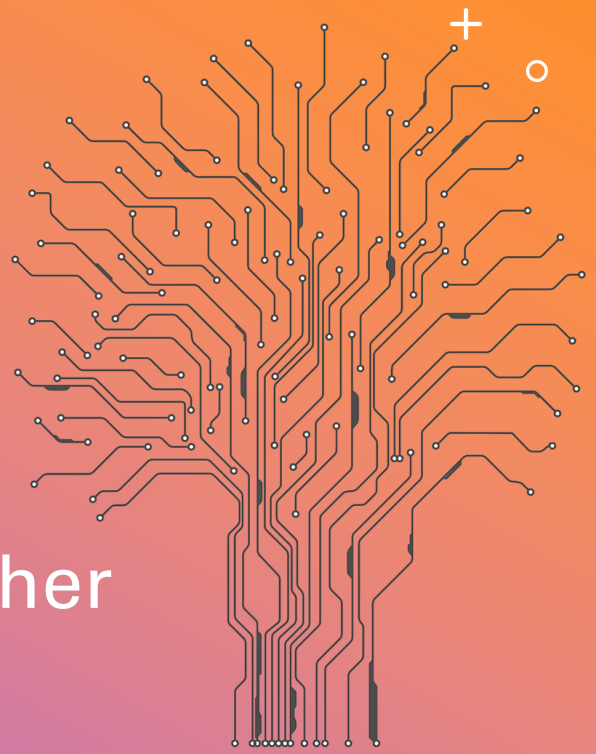
- Working with Arduino
- Could have used Arduino IDE, but wanted source control
- Could have coded in Python, but running Python on the microcontroller has downsides
- Decided to go with the Arduino extension for VSCode and coding in C++



SPRINT 2 CONTINUED

- Game engine – Unity
- Choices : Unity, SteamVR, Unreal (Thanks Professor Branton)
- Reason for choosing Unity easy beginner usability and easy connection to outside communication, i.e., handmade input devices such as the glove

PLANS FOR SPRINT 3



- Test and build base circuits with individual parts
- Build a test circuit with all sensors working together
- Communicate via wired communications between circuit and Computer
- Stretch Goal: Communicate over Bluetooth with same results

WHAT'S NEXT?

- Build a simulated Sandbox with Unity with hand-based activities for interaction
- Build Prototype Glove with temporary circuits
- Hook Prototype Glove to Sandbox to test mobility and fine-tune
- Build final protype of glove with soldered connections

QUESTIONS?