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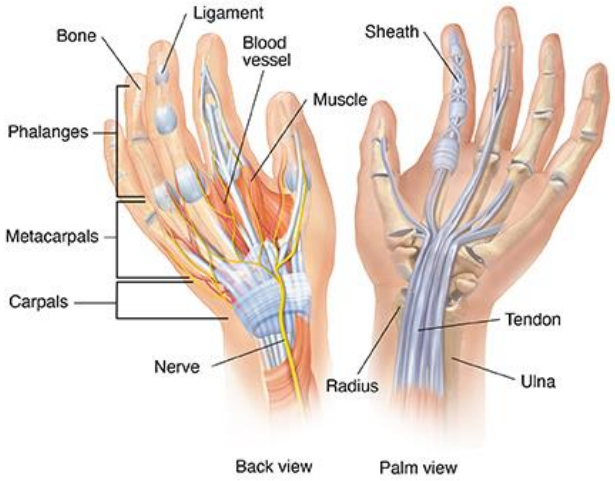
Haptic Glove Development Project – Sprint 1

The Two Stooges

Hand Movements We Want To Capture

- 10 Hinge Finger Joints and 5 Ball-Socket(like) Finger Joints
- Inflexion of the Wrist
- Hand Positioning in 3d Space
- Hand Movement Compared to Body Movement

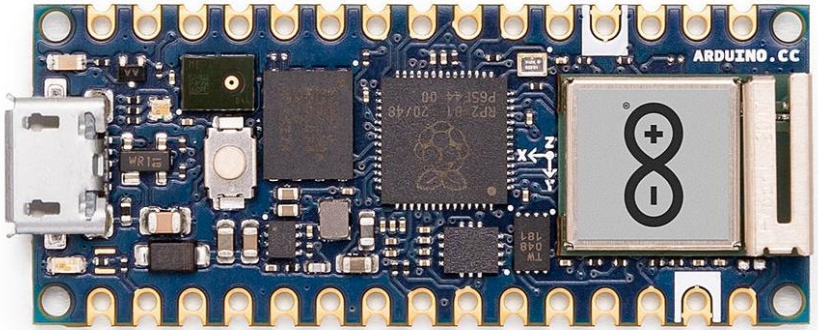


Sensor to Capture Hand Movements

- Flex Sensors on Each Finger
- Inertial Measuring Unit (IMU)
  - Accelerometer
  - Gyroscope
  - Magnetometer

How We Are Communicating With Sensors and Computer

- We decided to use the Arduino Nano RP2040 Connect
- Internal Wifi and Bluetooth Connectivity
- Internal IMU to Help With Sensor Capabilities



Circuit and PCB

- We have discussed the design for connecting the sensors to the Arduino
- We have investigated what we need to do for creating a PCB
- We will wait till we have finished testing sensors for ordering a PCB

Estimated Costs

Part Number	PartName	Cost Per Part	Quantity	Total Cost
00001	Thin Film Pressure Sensor Flex 3.9"	7.39	5	$36.95
00002	HiLetgo GY-521 MPU-6050 MPU6050	6.29	1	$6.29
00003	Arduino Nano RP2040 Connect	34.99	1	$34.99
00004	PCB Boards		2	$0.00
00005	Molex 12pin wire-to-wire connectors	11.99	1	$11.99

Total Cost:	$90.22

What is Next?

- We plan to research the software we need with Sprint 2
- The software we need to interface with Arduino
- The software we need to Build the Sandbox
- Start familiarizing ourselves with the software that is selected.

Questions?