Hardware Assignment 2: A Foot Based Controller

By Atlas X 3
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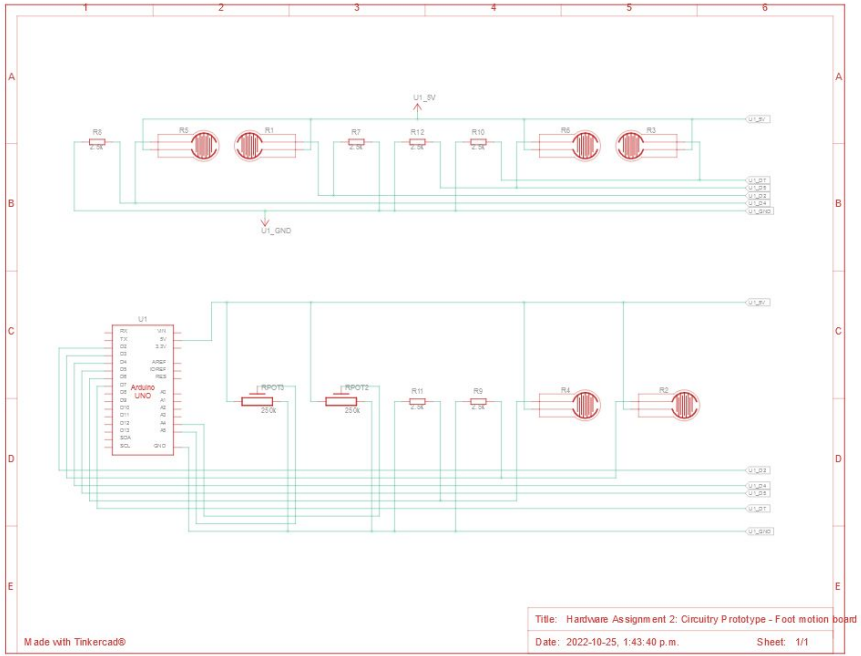
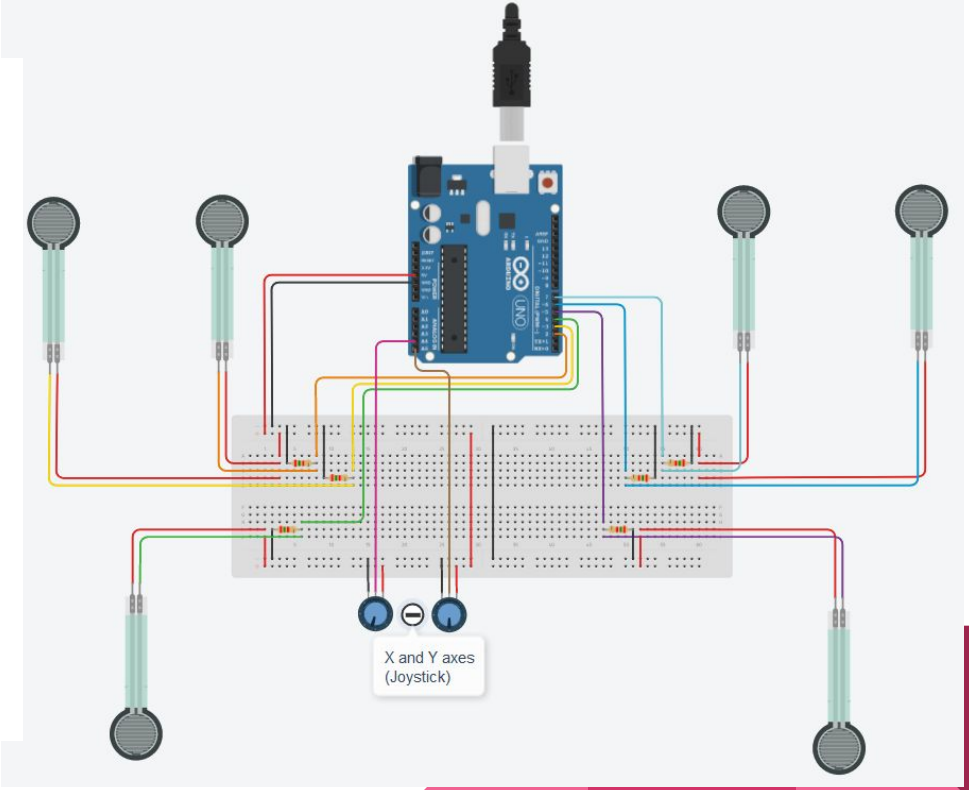
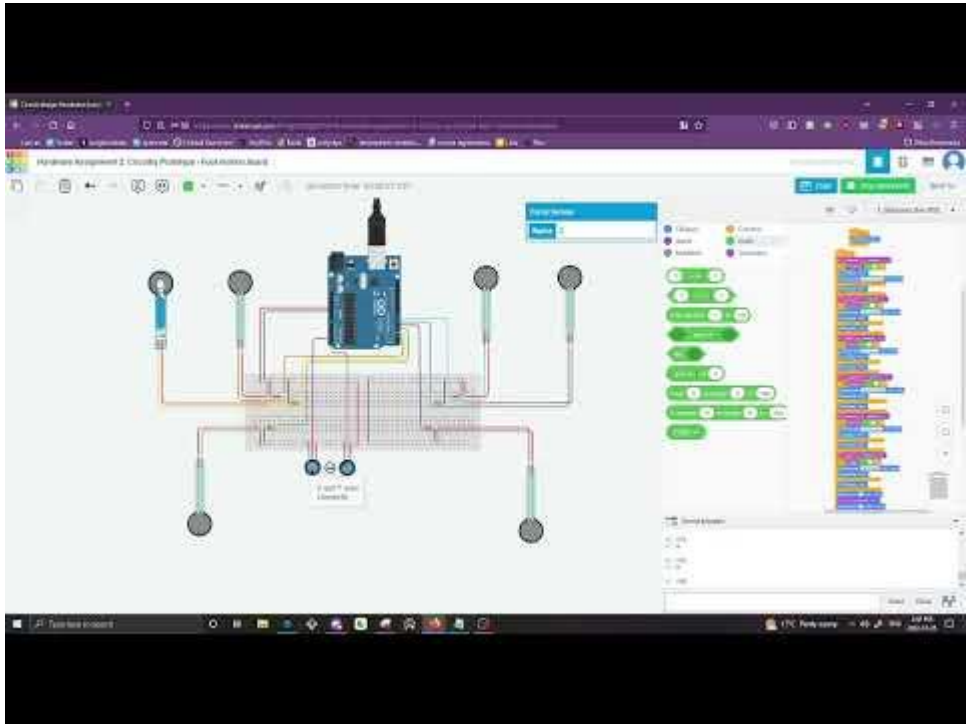
Electronics and Circuitry

Electronics





Circuitry Simulation

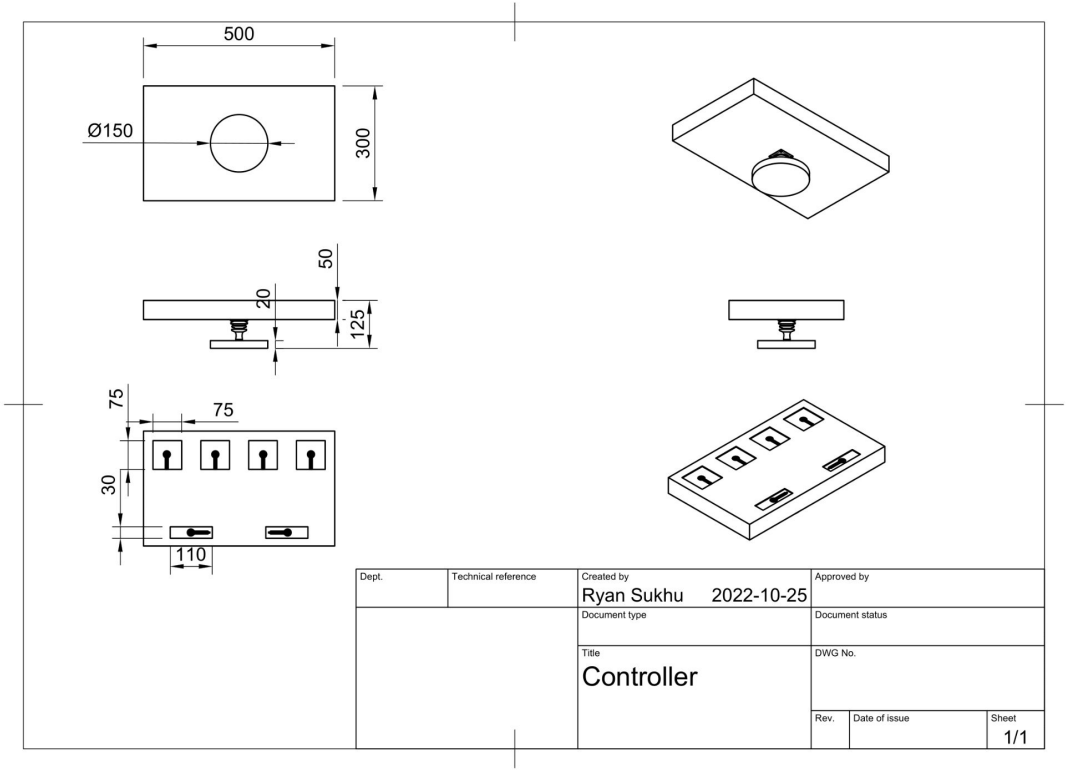


Electronics Bill of Materials

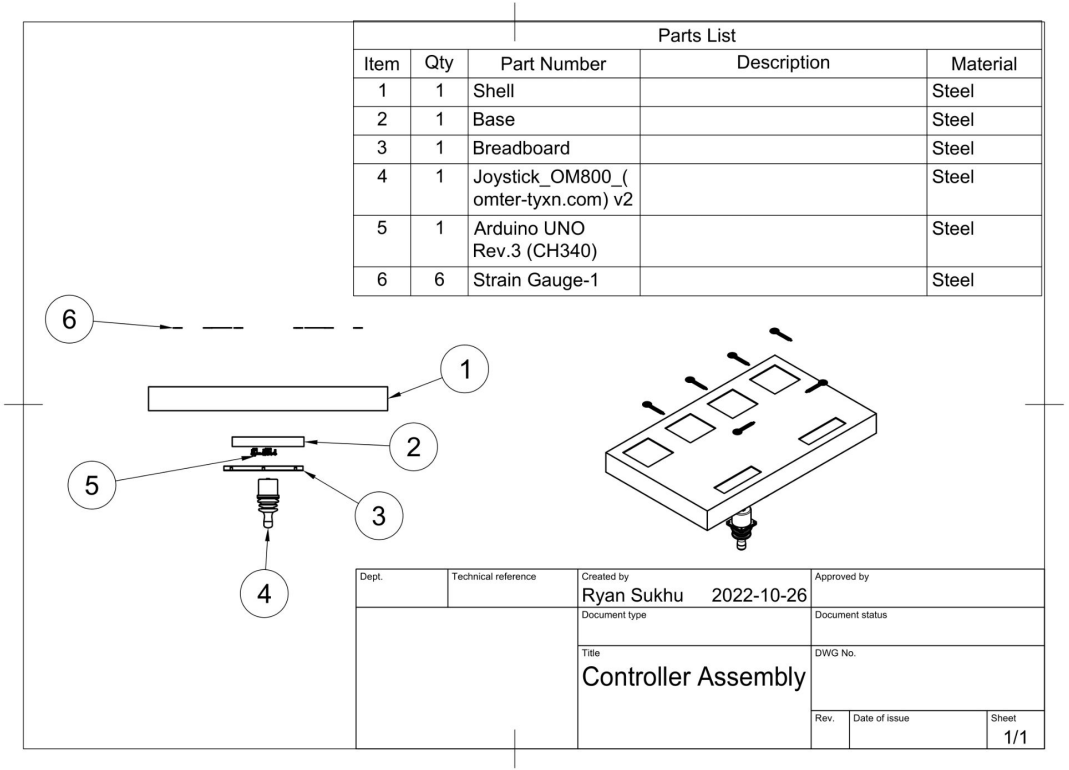
Quantity	Component Name	Description of Component
1	Arduino Uno R3	A microcontroller board that will be used to handle input and output
1	Breadboard	Used as a hub to connect and organize the wires, resistors, etc.
6	Force Sensor	Sensor that will be used to detect and respond to pressure
6	Resistor	Used to increase or decrease the force sensor's sensing threshold
1	Joystick	Will be used to gather input for x and y axes.
38	Male to Male Wire Connectors	Used to connect various electronic components to the breadboard and Uno

Digital Prototype

Technical Drawings for Parts



Assembly Technical Drawing

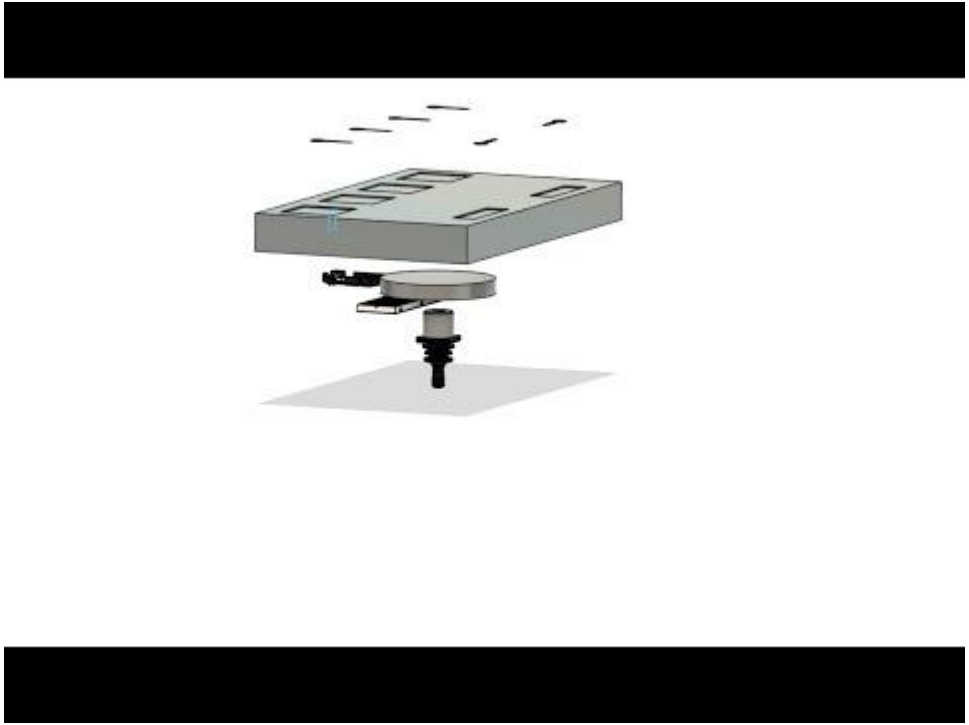


Parts List

Item	Qty	Part Number	Description	Material
1	1	Shell		Steel
2	1	Base		Steel
3	1	Breadboard		Steel
4	1	Joystick_OM800_(omter-tyxn.com) v2		Steel
5	1	Arduino UNO Rev.3 (CH340)		Steel
6	6	Strain Gauge-1		Steel

Dept.	Technical reference	Created by	Approved by
		Ryan Sukhu 2022-10-26	
		Document type	Document status
		Title: Controller Assembly	DWG No.
			Rev. / Date of issue / Sheet: 1/1

Exploded View Animation



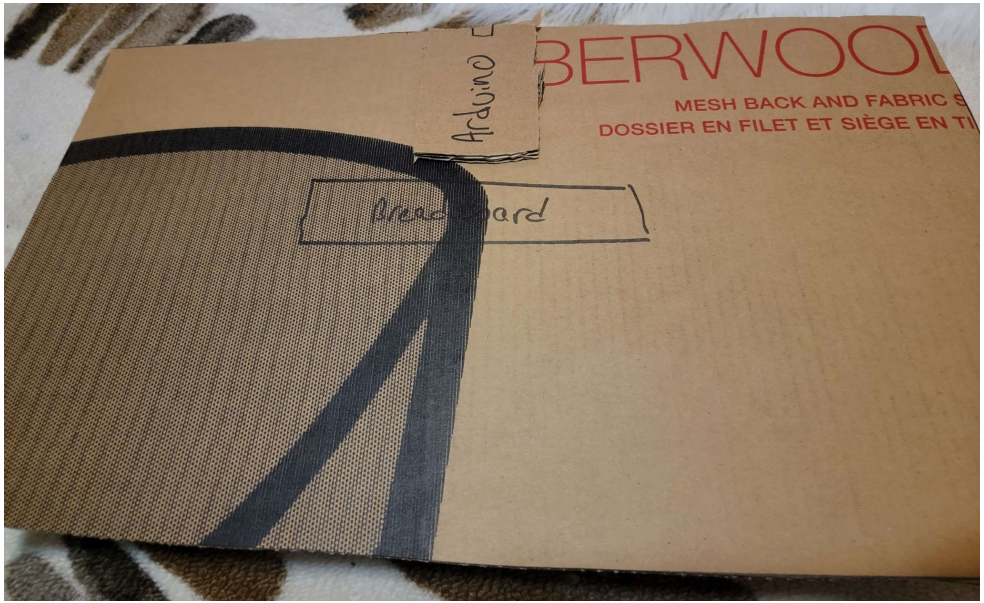
Bill Of Materials

Item #	Qty	Name	Description
1	1	Shell	Contains the main electronic components and allows the user to interact with it.
2	1	Base	Will hold the joystick and allow the shell to slide.
3	1	Breadboard	Used as a hub to connect and organize the wires, resistors, etc.
4	1	Joystick	Will be used to gather input for x and y axes.
5	1	Arduino Uno R3	A microcontroller board that will be used to handle input and output.
6	6	Force Sensor	Sensor that will be used to detect and respond to pressure.

Paper Prototype and Project Planning

Paper Prototype

Paper Prototype



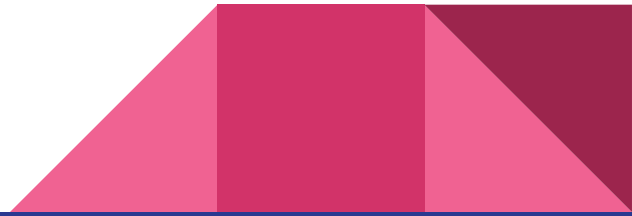
Paper Prototype

Planning 1: Roles And Responsibilities

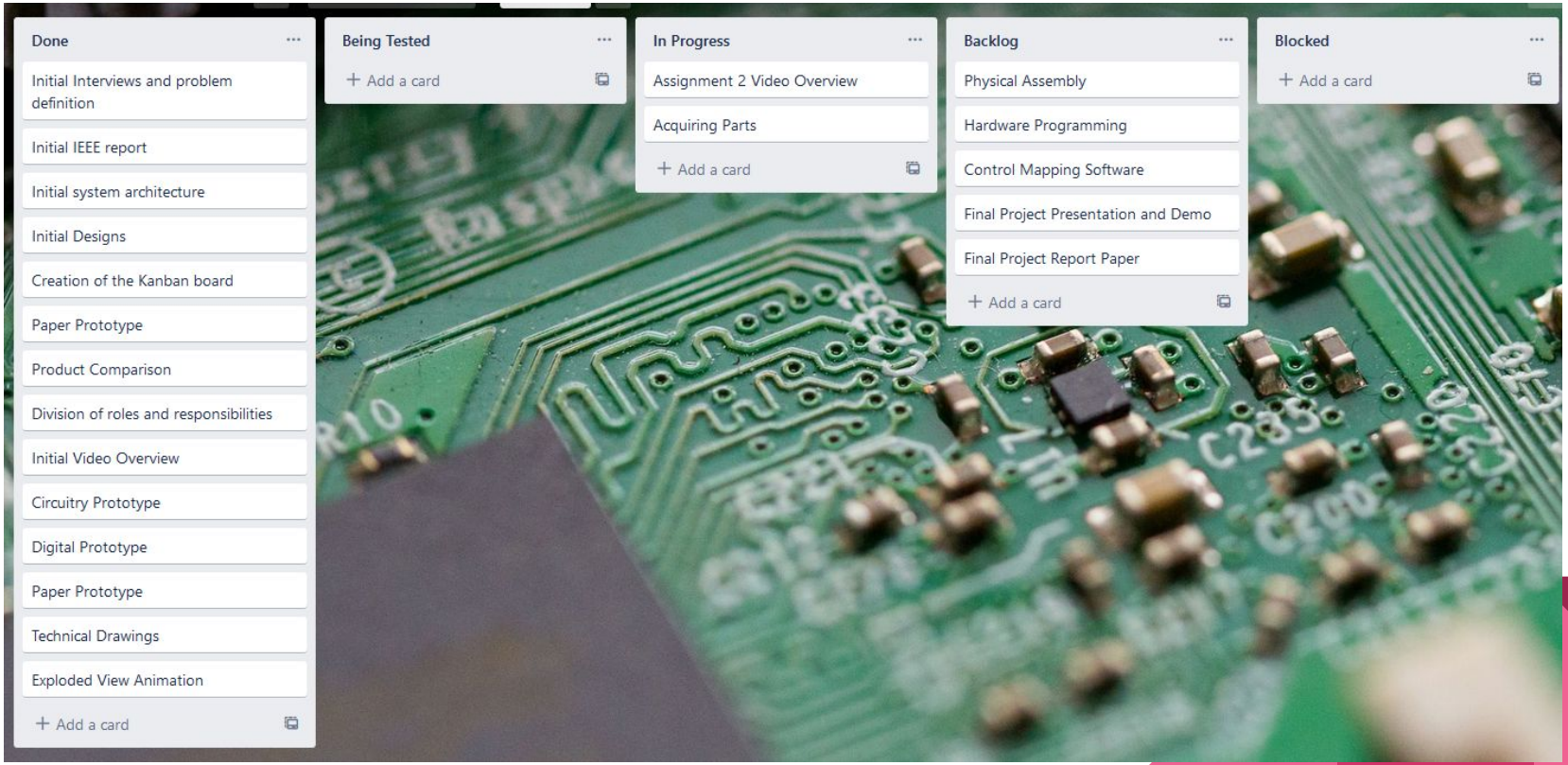
Ame: Software Lead

Jackie: Hardware Lead

Ryan: Design Lead



Planning 2: Kanban Board



Thank you for listening!