

# ASSIGNMENT 2 – HAPTIC GLOVE LITE: ELECTRONICS

INFR 3380U: INDUSTRIAL DESIGN FOR GAME HARDWARE

# AGENDA

- Reintroduction
- Electronics
  - Bill of Materials
  - Schematics
  - Circuitry Integration and Working Simulation
- Project Progression
  - Planning
  - Remaining Assignments

The background is a blue gradient with decorative white circuit-like lines in the corners. The lines consist of straight segments and small circles, resembling a stylized electronic circuit board.

# REINTRODUCTION

DEFINING THE PRODUCT

# REINTRODUCING THE HAPTIC GLOVE LITE

**Product:** Haptic Glove Lite

- Haptic Glove for Enhancing VR Experiences
- Vibration-Based Feedback
  - No Movement Tracking
  - No Force Feedback
- Slim and Low Cost
  - Average Consumer-Oriented

The logo for 'Haptic Glove Lite' is rendered in a bold, blue, hand-drawn style. The words 'Haptic' and 'Glove' are stacked vertically, with 'Haptic' being larger. The word 'Lite' is positioned to the right of 'Glove' and is underlined. Above the word 'Haptic', there are three concentric dashed circles, suggesting vibration or haptic feedback. The entire logo is set against a dark blue background with light blue circuit-like lines.



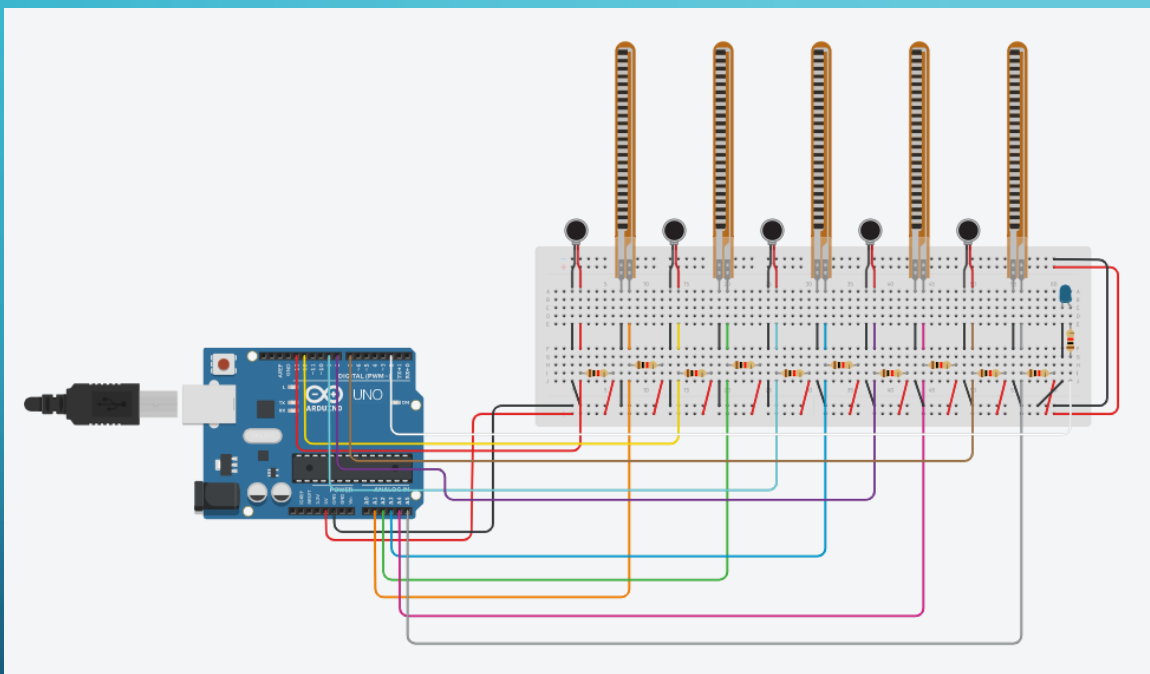
# ELECTRONICS

HAPTIC GLOVE ELECTRONICS

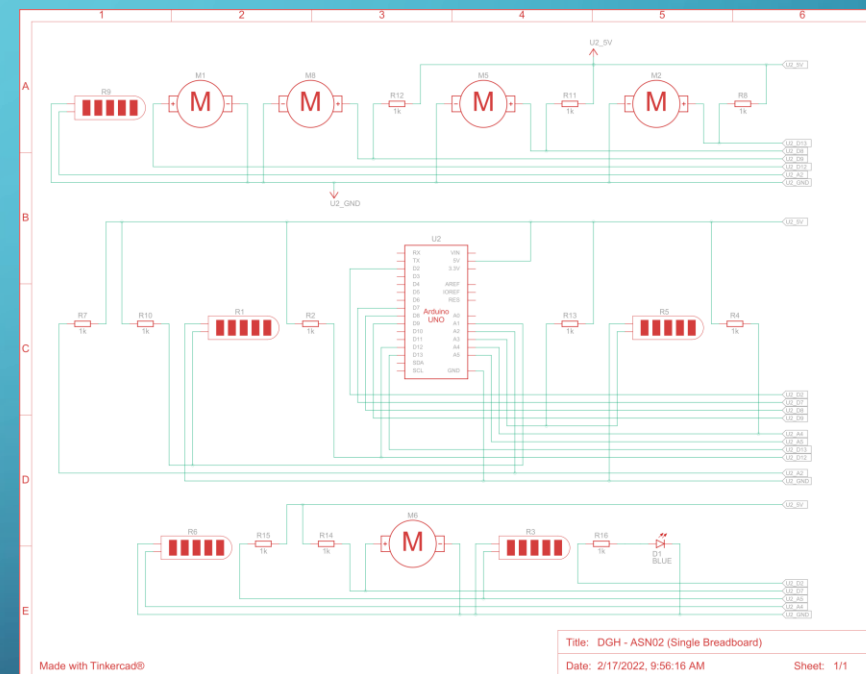
# BILL OF MATERIALS

Component	Quantity	Price (Total) [CAD]	Role	Link
Flex Sensor (2.2")	5	\$73.75	Measures the bends in the user's fingers.	<a href="https://www.creatroninc.com/product/flex-sensor-2-2/">https://www.creatroninc.com/product/flex-sensor-2-2/</a>
Arduino Uno R3	1	\$27.99	Provides power to the breadboard.	<a href="https://www.creatroninc.com/product/arduino-uno-rev3/">https://www.creatroninc.com/product/arduino-uno-rev3/</a>
Vibration Motor (Mini - 10mm)	5	\$17.95	Vibrates in reaction to triggers in the virtual space.	<a href="https://www.creatroninc.com/product/mini-vibration-motor-10mm/">https://www.creatroninc.com/product/mini-vibration-motor-10mm/</a>
1 kΩ Resistor (1/4W at 5%)	11	\$0.50	Regulates power for the other components. Being bought in packs of 10 for a total of 20 resistors.	<a href="https://www.creatroninc.com/product/1-4w-5-resistor-10-pack/">https://www.creatroninc.com/product/1-4w-5-resistor-10-pack/</a>
Blue LED (1 W)	1	\$1.50	A blue light that blinks to indicate that the device is on.	<a href="https://www.creatroninc.com/product/5mm-led-blue-10-pack/">https://www.creatroninc.com/product/5mm-led-blue-10-pack/</a>
Wire (3" (M-M) Jumper Wire)	57	\$15.00	Wires for connecting components on the breadboard. Being bought in packs of 10, so 6 packages are being purchased for a total of 60 wires.	<a href="https://www.creatroninc.com/product/3-m-m-jumper-wire-10-pack/">https://www.creatroninc.com/product/3-m-m-jumper-wire-10-pack/</a>
Breadboard (Full Size)	1	\$7.80	The breadboard for connecting all the components and providing power to them.	<a href="https://www.creatroninc.com/product/full-size-breadboard-white/">https://www.creatroninc.com/product/full-size-breadboard-white/</a>
<b>Total</b>	<b>81</b>	<b>\$144.49</b>		

# SCHEMATICS



Breadboard View



Schematic View

# CIRCUITRY INTEGRATION AND WORKING SIMULATION

- Created in TinkerCAD
  - Composed of All Listed Components
  - **Functions:**
    - Active Vibrators
    - Prints Flex Sensor Values
    - Blinking LED
- **TinkerCAD Simulation:**
  - Link (Public): <https://www.tinkercad.com/things/5OKWCgpc1B9>



The background is a blue gradient with abstract white lines and circles in the corners, resembling a circuit or network diagram.

# PROJECT PROGRESSION

PROJECT PLANS

# PROJECT PROGRESSION – PLANNING

- Completed TinkerCAD Design
  - Assemble Model in Fusion 360 Next
- Real-Life Approximation Needed
- Create Model and Simulation for Unity
  - No Plans for Full Physical Version



# PROJECT PROGRESS – REMAINING ASSIGNMENTS

## Remaining Assignments:

- Assignment 3 – Design – 03/11/2022
  - Technical Drawings, Parts, and Assemblies Simulation
- Assignment 4 – Progress Presentation – 03/18/2022
- Assignment 5 – Makerspace – 03/25/2022
  - Iterative Design and 3D printing.
- Final Presentation and Report – 04/14/2022

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END

THANK YOU FOR LISTENING