

# ASSIGNMENT 2 – HAPTIC GLOVE LITE: ELECTRONICS

INFR 3380U: INDUSTRIAL DESIGN FOR GAME HARDWARE

# AGENDA

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

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

# REINTRODUCTION OF THE PRODUCT

GAME HARDWARE PIECE

# 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 playful, hand-drawn style. The words 'Haptic' and 'Glove' are stacked vertically in a large, bold, blue font with a thick black outline. The word 'LITE' is positioned to the right of 'Glove', in a smaller, all-caps blue font with a black outline. Above the 'Haptic' text, there are three small, curved lines suggesting motion or vibration.



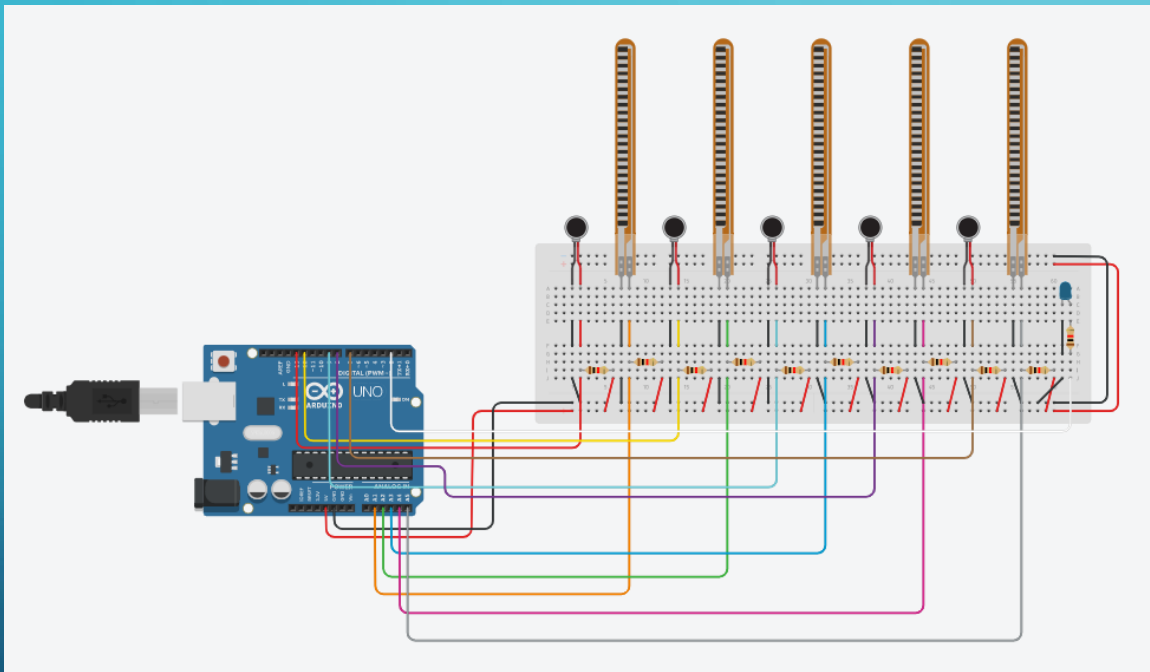
# ELECTRONICS

HAPTIC GLOVE ELECTRONICS

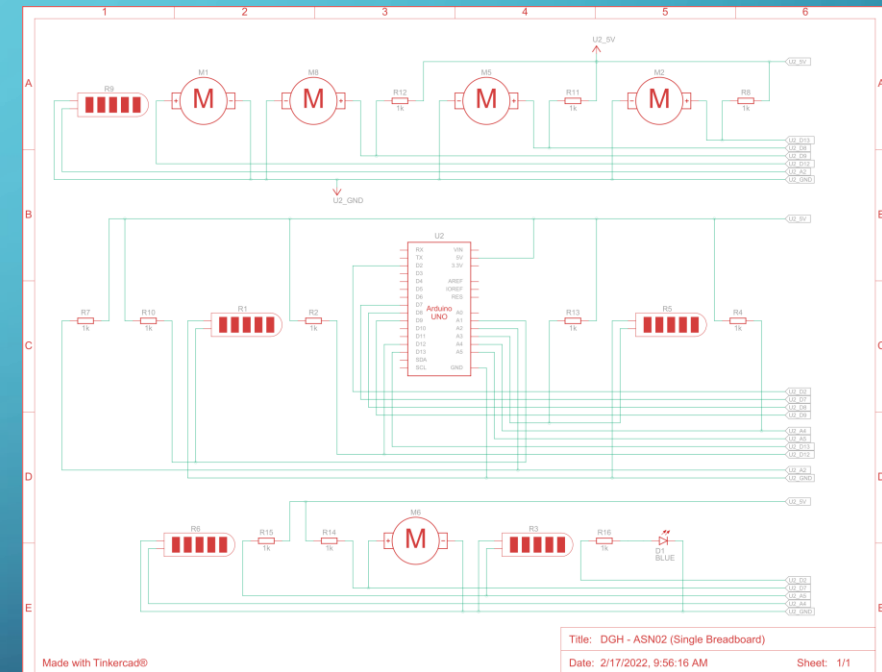
# BILL OF MATERIALS

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>



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# 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