Assignment 1
Industrial Design:INFR 3380U

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Ideation Process

Question 1

What type of gaming mouse do you prefer (i.e Vertical ergonomic mouses or traditional everyday mouses) and why? (if you're used to the normal ones or if your wrist hurts and you need a vertical one)

3 responses

traditional. I use a gaming mouse

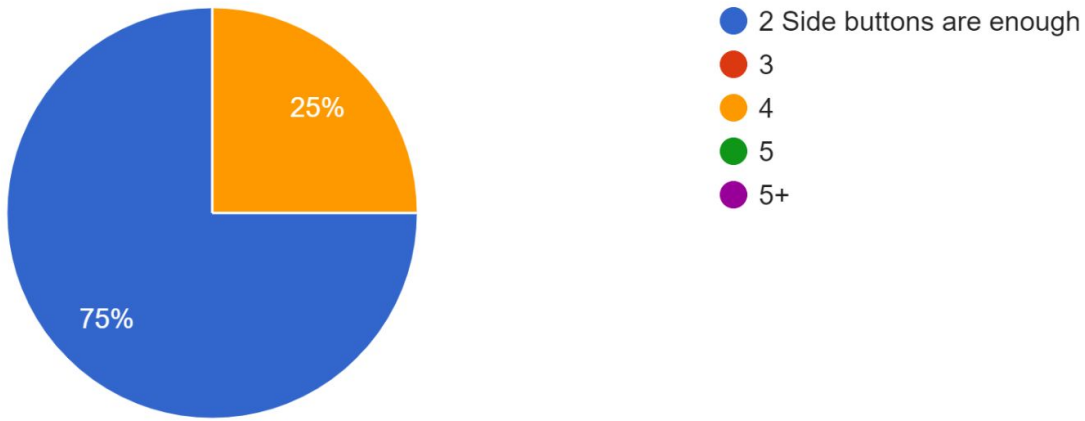
traditional mouses with the side mouse buttons because im used to it

Traditional mouses for the simple reason that its what I grew up with. An ergonomics mouse could be interesting but I can't say that I have ever tried one.

Question 2

Ideally how many mouse buttons do you want on a mouse aside from the normal default 5.

4 responses



Question 3

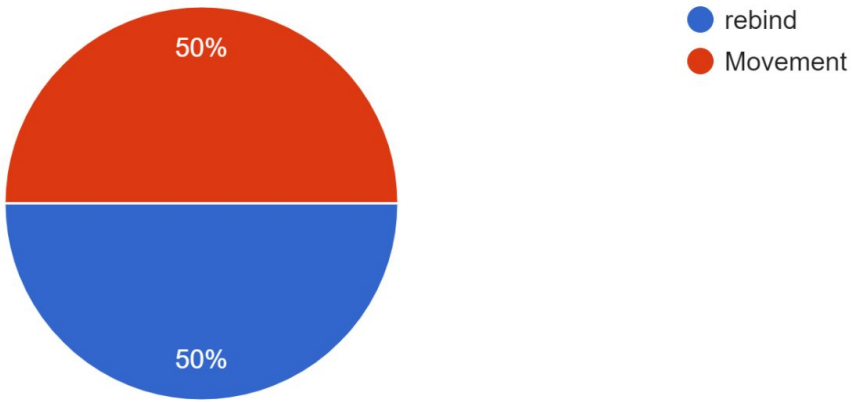
Do you think it's possible to control movement with the joystick on the mouse while simultaneously aiming with moving the mouse

4 responses

Question 4

Would you use the joystick on the mouse as movement or would you rebind it as additional binds for games?

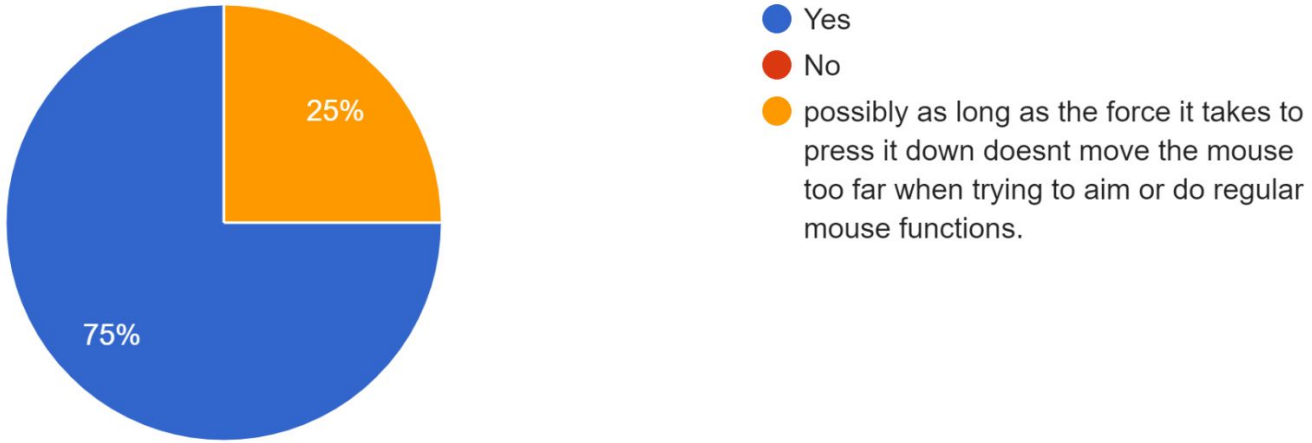
4 responses



Question 5

Should the joystick have a click function? (pressing down on the joystick is an input)

4 responses

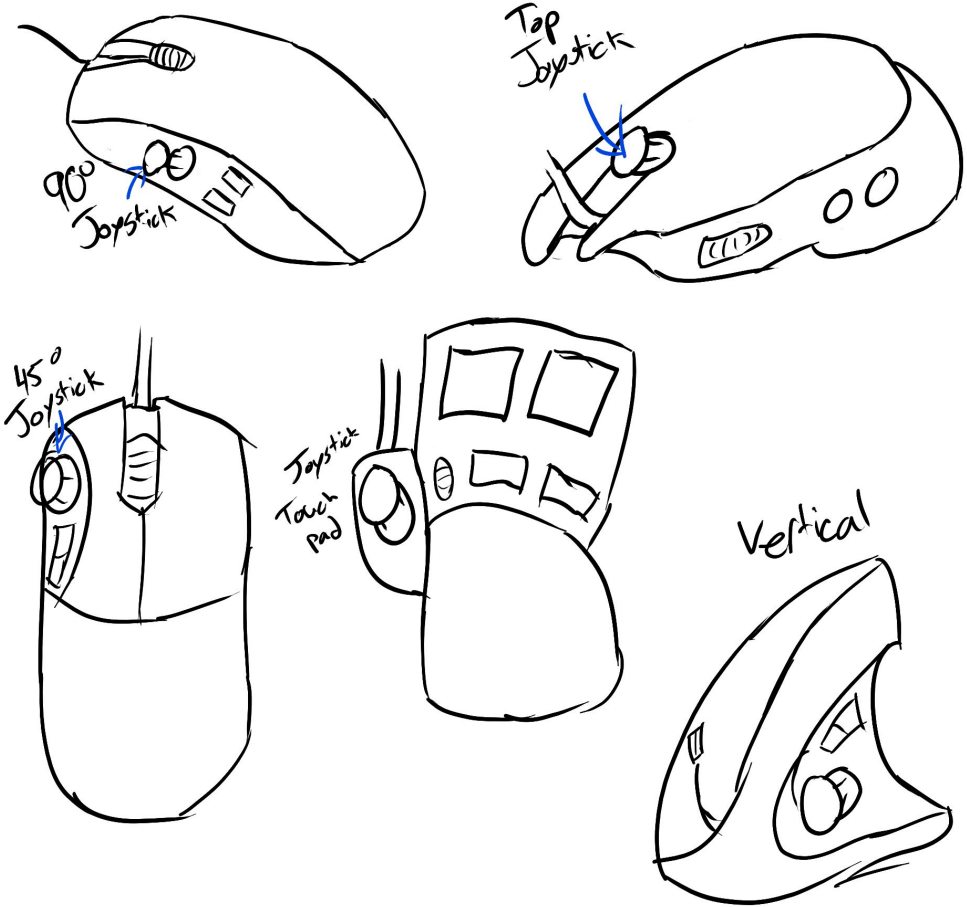


Analysis (4 People were asked)

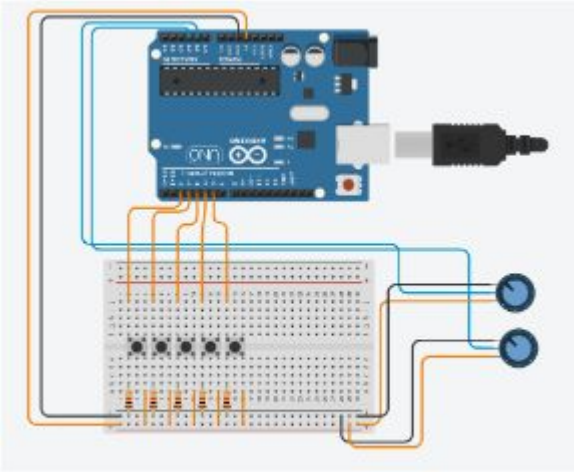
- Traditional computer mice > ergonomic alternatives
- Mostly everyone said that the 2 side mouse buttons are sufficient
- The positioning of the analog stick is important but most importantly nobody said it wouldn’t work
- The answers are split but given that none of the people that answered are people that we targeted might mean the question is still up in the air
- The joystick itself should have a click option to press it down as another input but the input itself should not be too difficult to access

5 Sketches

- Side Joystick Mouse
- 45 Degree Joystick
- Top Joystick
- Hand Shape Touchpad
- Vertical Mouse Joystick

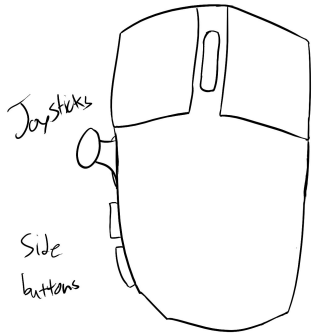


Build your solution



- Initial circuit design features mouse buttons and a joystick
- Joystick substituted with potentiometers to act as XY plane
- Each button press alternate the currents so that it reach Arduino then outputting back on their monitor
- Initial design only the standard buttons and a joystick aiding players with one hand

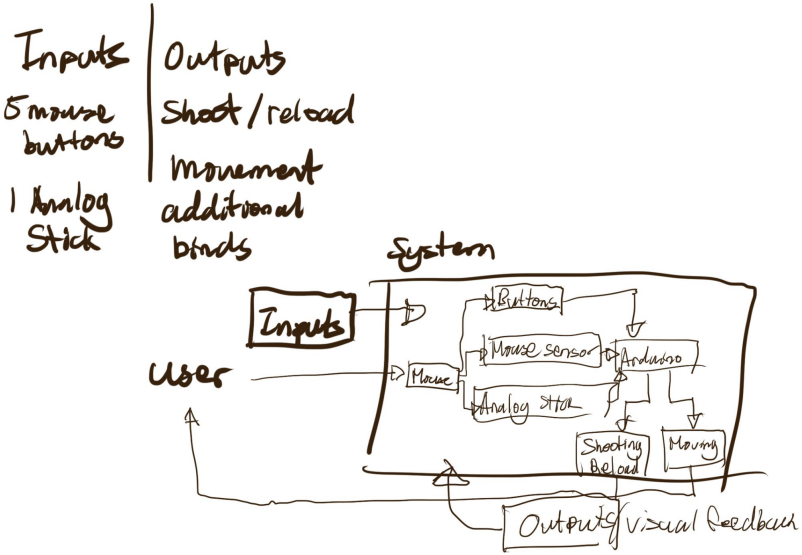
- Rough Sketch Outline
- Similar to the circuits simulation
- Sketch lacks buttons
- Shape and placement very rough

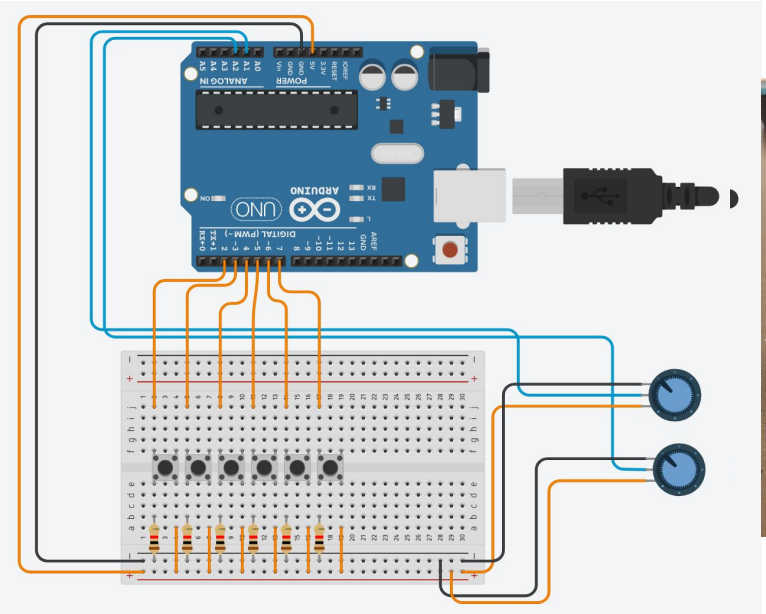


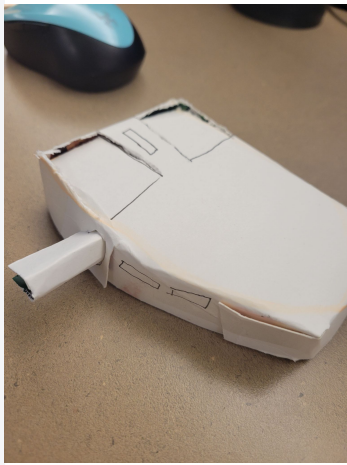
Solution Improvement

- Can potentially add buttons in the future if we're able to get more information on our target market.
- The ergonomics of our product can be improved once we get to the physical prototyping stage.
    - This ties into the weight of the product as that's a major focus in modern day gaming mice for first person shooter games.
- The positioning of the analog stick would also be improved in the future perhaps during the prototyping phase.

System Architecture







Product Comparison

Razer Deathadder

- Released in 2006
- Common gaming mice, over 10 million sold
- Combines ergonomics and gaming necessities
- Lacks the accessibility with only 2 additional inputs
- Two side buttons doesn’t offer flexibility (only on one side)
- **Our product includes an analog stick for accessibility**

Asus ROG Chakram

- Very Similar to our product
- Design award in 2020 (probably came out that year?)
- Poor reviews comparing to other competitors on the weight of the mouse and latency issue
- Weight depending on the material, Latency fix based on the wiring
- Circle pad on the side as a functional analog stick
- **Difference between circle pad analog stick and controller style joystick is that our design would be more accurate for inputs**
- **Our product will utilize a joystick rather than a circle pad**

Vertical Ergonomic Mouse

- Vertical mouse with joystick
- Released in 2020 or maybe earlier
- Capitalize on people who are working from home during the pandemic period
- Focuses more productivity rather than gaming
- Gamer prefer traditional mice rather than vertical ones for gaming
- **Our product geared towards gaming rather than people using for productivity and plans for alternative uses**

Razer Tartarus Gaming Pad

- Released in 2013
- A similar product that crams as many bindable inputs as possible in one hand.
- Doesn’t seem to be great for only one handed use.
- **Our ideas are similar but we’re aiming to be able to do everything with one-hand to eliminate the need to have additional peripherals.**

Razer Naga Trinity

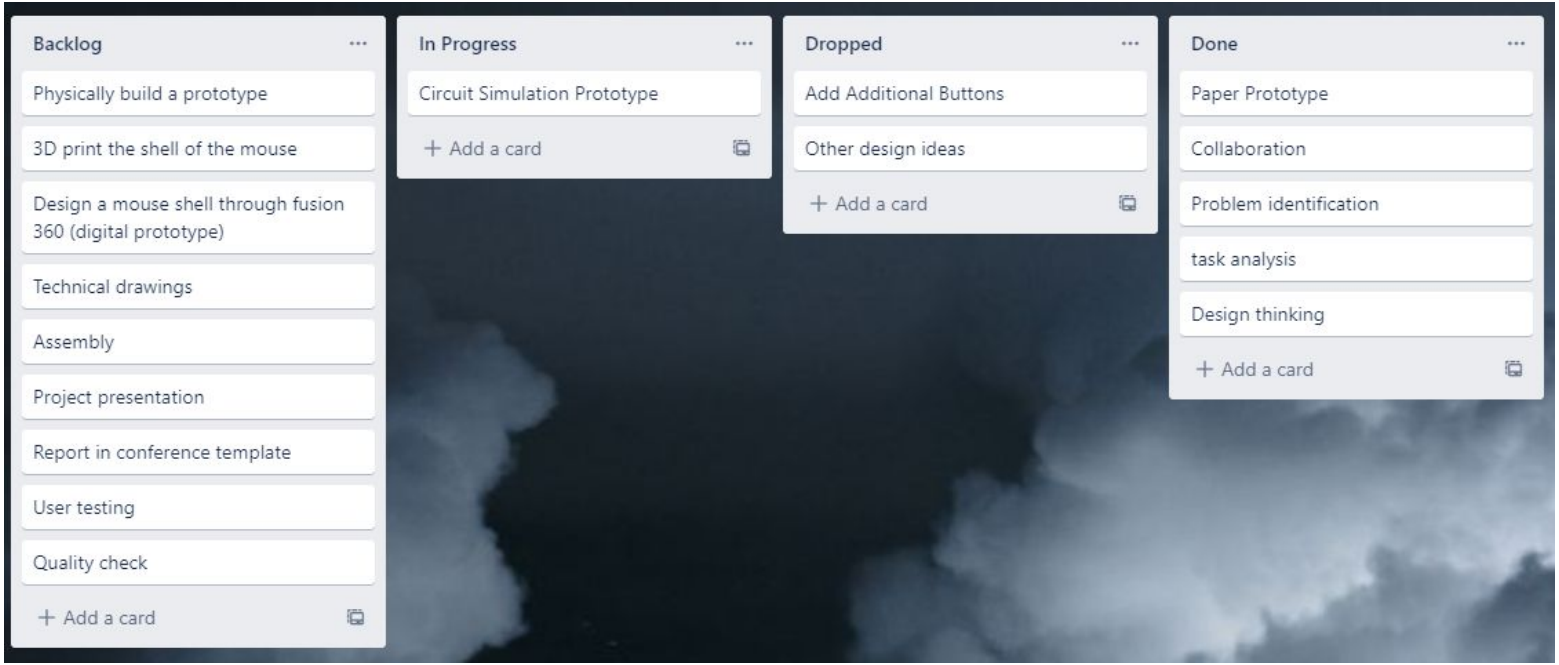
- Released in 2017
- Similar to the tartarus but this time on thus mouse.
- A multitude of additional inputs
- Customizability with the swappable modules
- **This product is very similar to what we aim to do but we believe that an analog stick would function similar to this but better.**

Significant Evolutionary Aspects

- The Razer Deathadder was one of the first gaming mice of it's kind featuring low latency sensors and an attention to ergonomics with the shape of the mouse's body
- Asus ROG Chakram, while it isn't well received by the consumers it is one of the first mouses with an analog input on the mouse.
- The vertical ergonomic mouse combines ergonomics as well as the analog input into a device more suitable for long periods of use as well as productivity.
- Razer Tartarus is one of the first keypads where the core functionality is that there can be a large quantity of keybinds without actually affecting the keyboard itself.
- Razer Naga Trinity offers customizability depending on the owner's needs.

Planning

Kanban Chart



Roles for Course Project

James - Software Designer

- Responsibilities for Interactive scene (Unity)

Fred - Hardware/Product Designer

- Responsibilities for Electronic integration

Thanks for Listening