

PC Joystick Input Device

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The Problem

- Standardized control scheme for keyboard + mouse
- Precision and fluidity in game control is important!
- Keyboard controls:
 - Restrict level of control
 - Can be unintuitive to casual players
 - Can cause discomfort
- Control Sticks:
 - Reduce range of motion for aiming



Solutions?

- Small market for left-hand PC controllers
- Other options are somewhat expensive
- Could be considered a *premium* controller, high skill use
- Needs a more accessible option

Most prominent example we've found:



<https://www.azeron.eu/>

The Potential Users

<i>Needs</i>	<i>Technical Requirements</i>
Controller stability	Some way to affix the device to a desk/surface. Alternatively, a heavier weight.
Comfort in use	Buttons are large enough that fingers can rest on all buttons at a time, regardless of hand size. The shell funnels the hand into the best position for use.
Ease of use across games	Ability to interpret analog inputs as keyboard/mouse inputs (analog-to-digital conversion). Should read as an XInput controller for most games.
Customization	Provide configuration for keybinds, and potentially presets for different game genres or specific titles.

Our Process

- Thought about key requirements, FPS games as a main example.
- Movement direction AND strength controlled by the analog stick.
 - Modifier keys?
- 4 button rows covers the actions for relevant games.

Primary Keys (Combat / Movement)

- Crouch (pinky)
- Jump (ring)
- Interact button (middle)
- Reload (index)

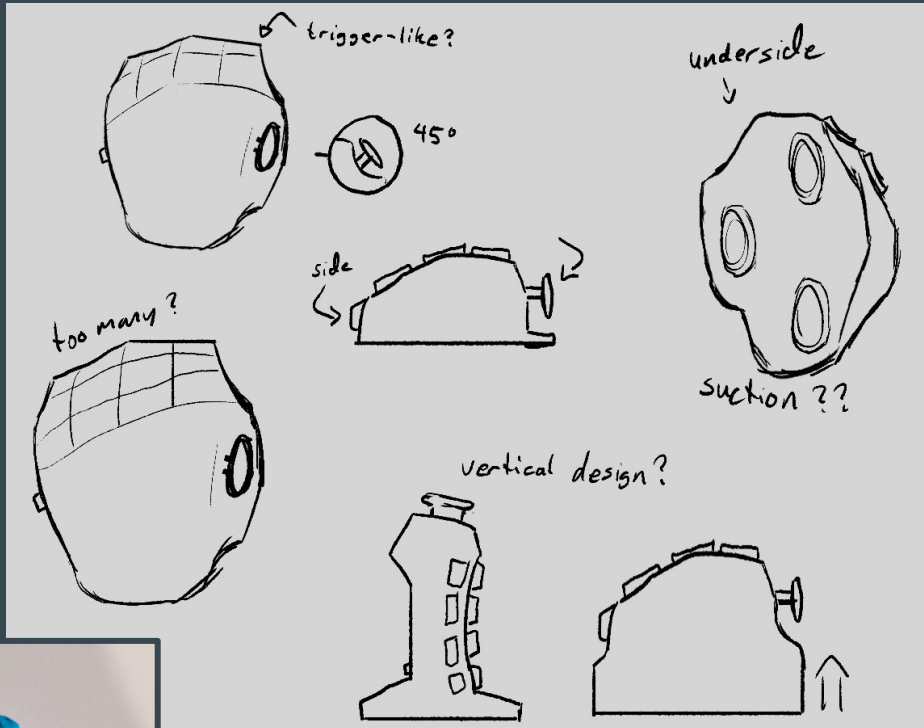
Secondary Keys (Requires fingers to relocate)

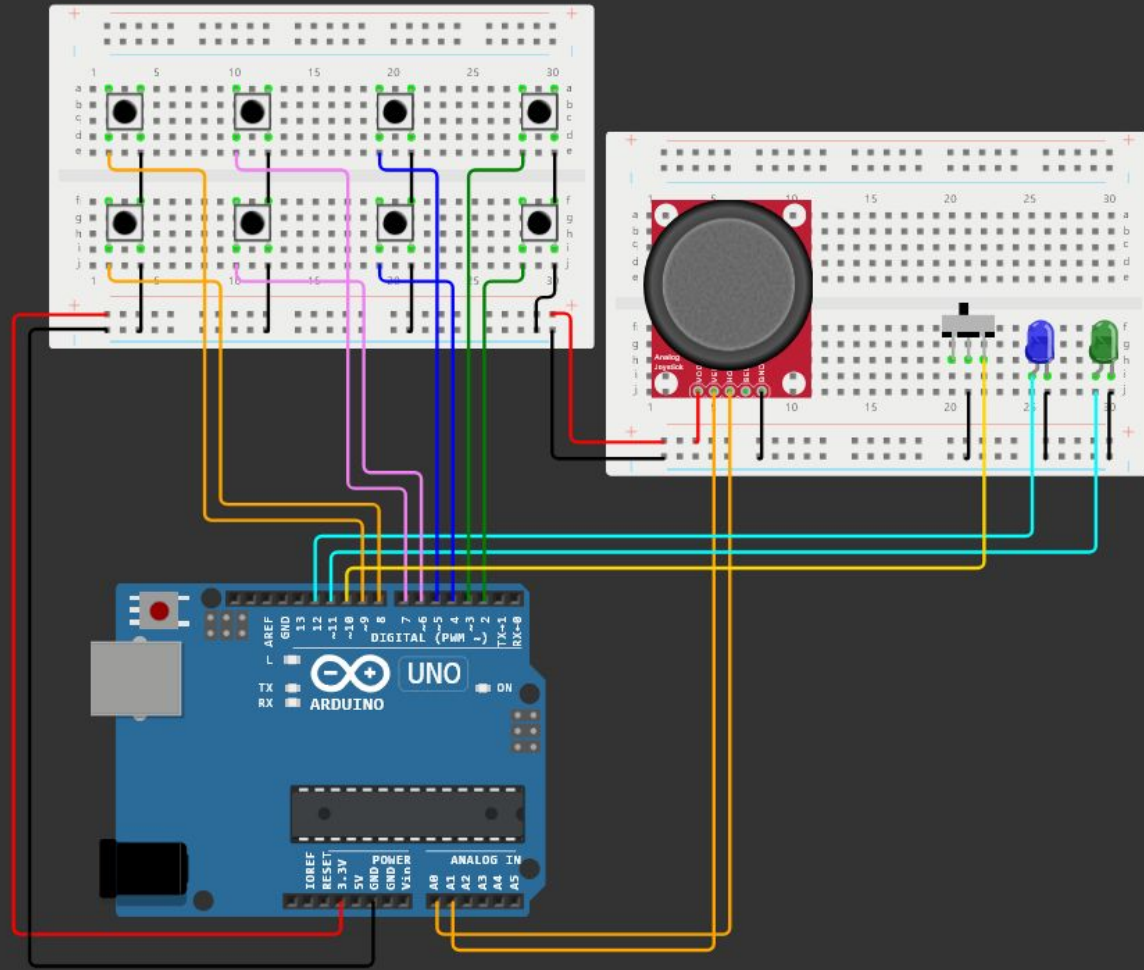
- 1, 2, 3, 4
- Weapon swapping, etc.

Tertiary Keys (Out of combat)

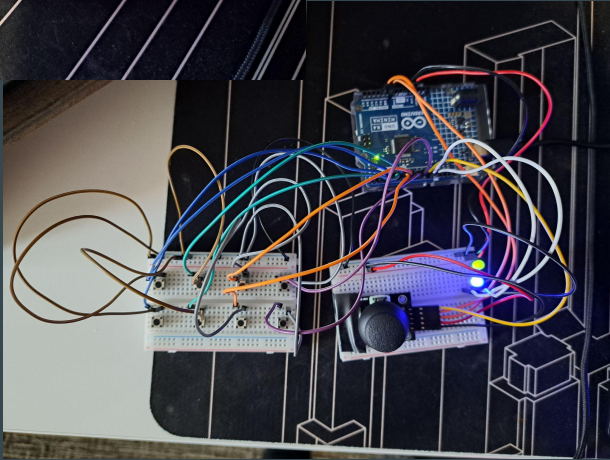
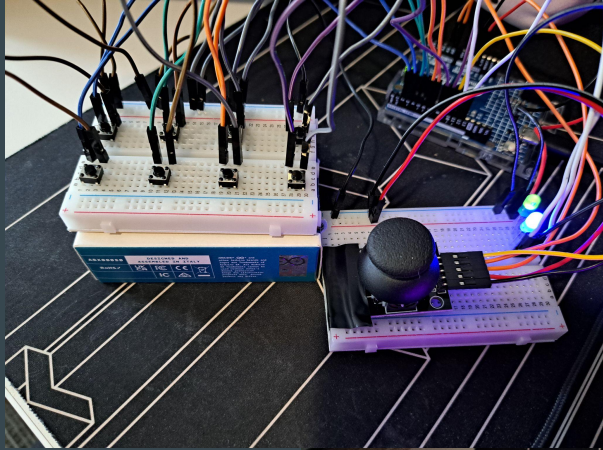
- Escape/Menu
 - Drop Weapon
 - Tab Menu
 - ...
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Prototyping...





Prototyping...



To Do

- Arduino Micro is the way to go.
- Refine the sketch code with libraries.
- Get more jumper sizes!!
- *Questions?*