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Odd Number

Explanations for Practical Portion

I didn't do a Fusion360 project, just the TinkerCAD part.

Solution Explanation (Choice of components)

My ghost controller allows for players to move (up, down, left, right) and to enter or exit a state called hide mode. When players enter hide mode, they will be invisible to Pacman, so he doesn't know where you are. The tradeoff is that your ghost's speed will be reduced, making it harder to chase Pacman down.

- My controller has 2 types of sensors: 4 push buttons for movement (up, down, left right) and a potentiometer to toggle hide mode on/off.
 - o I chose push buttons to represent the ghost's movement to replicate how keyboards have individual keys for each direction of movement (arrow keys and WASD keys). It would make the controls more intuitive for the user since they mimic familiar gaming devices.
 - o I chose a potentiometer to represent hide mode since you can slide according to which mode you want and toggle between modes very easily with this component. Players wouldn't need to hold down any buttons to stay in the mode they want either. Just by looking at a sliding potentiometer, they would visually be able to understand which mode they're in too based on the location of the stick.
- My controller has 1 actuator, which is an LED that lights up every time an input is received. This is to give feedback to the player to ensure that that game is receiving their inputs.

TinkerCAD

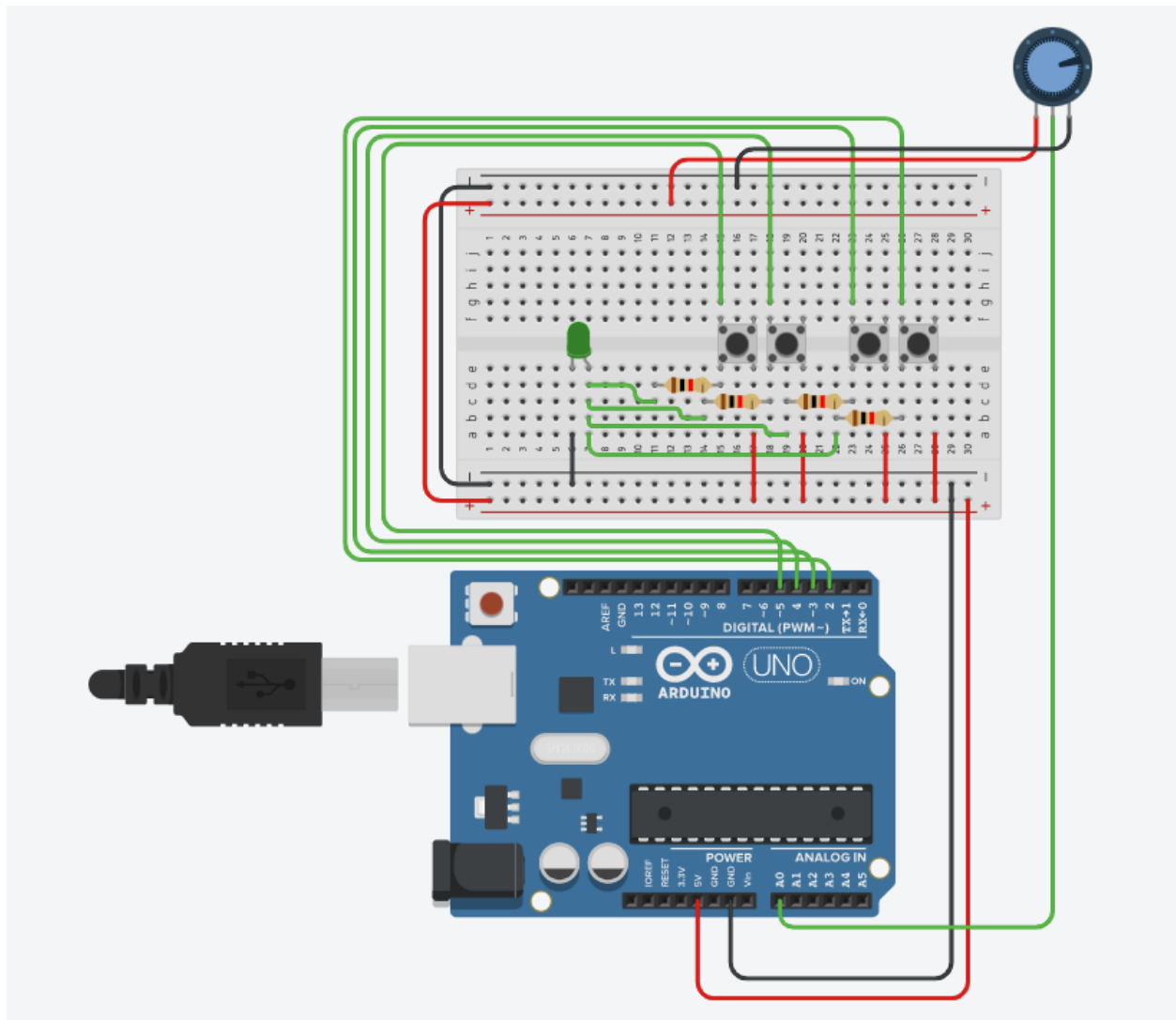
Link to project: <https://www.tinkercad.com/things/0GDOZ7bOBIs?sharecode=drqQCUAL3E1-CzZ0Xsxcg3V7ugpHBb4QlIMhx81ChmSE>

Simulation Functionality Demo: <https://youtu.be/8tJxcDdUGyM>

Simulation Explanation:

The push buttons are arranged in the following order from left to right: left, right, down, up. Every time you press a button, the green LED will light up, indicating that an input has been received. The serial monitor will also print out which button has been pressed.

The sliding potentiometer can change between 2 modes, which will toggle the hide mode on (1) or off (0). The serial monitor will print which mode is toggled.



Component List

Name	Quantity	Component
U1	1	Arduino Uno R3
D1	1	Green LED
SUp SDown SRight SLeft	4	Pushbutton
Rpot1	1	250 k Ω Potentiometer
R1 R2 R3 R4	4	1 k Ω Resistor