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Industrial Design for Game Hardware

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INFR 3380

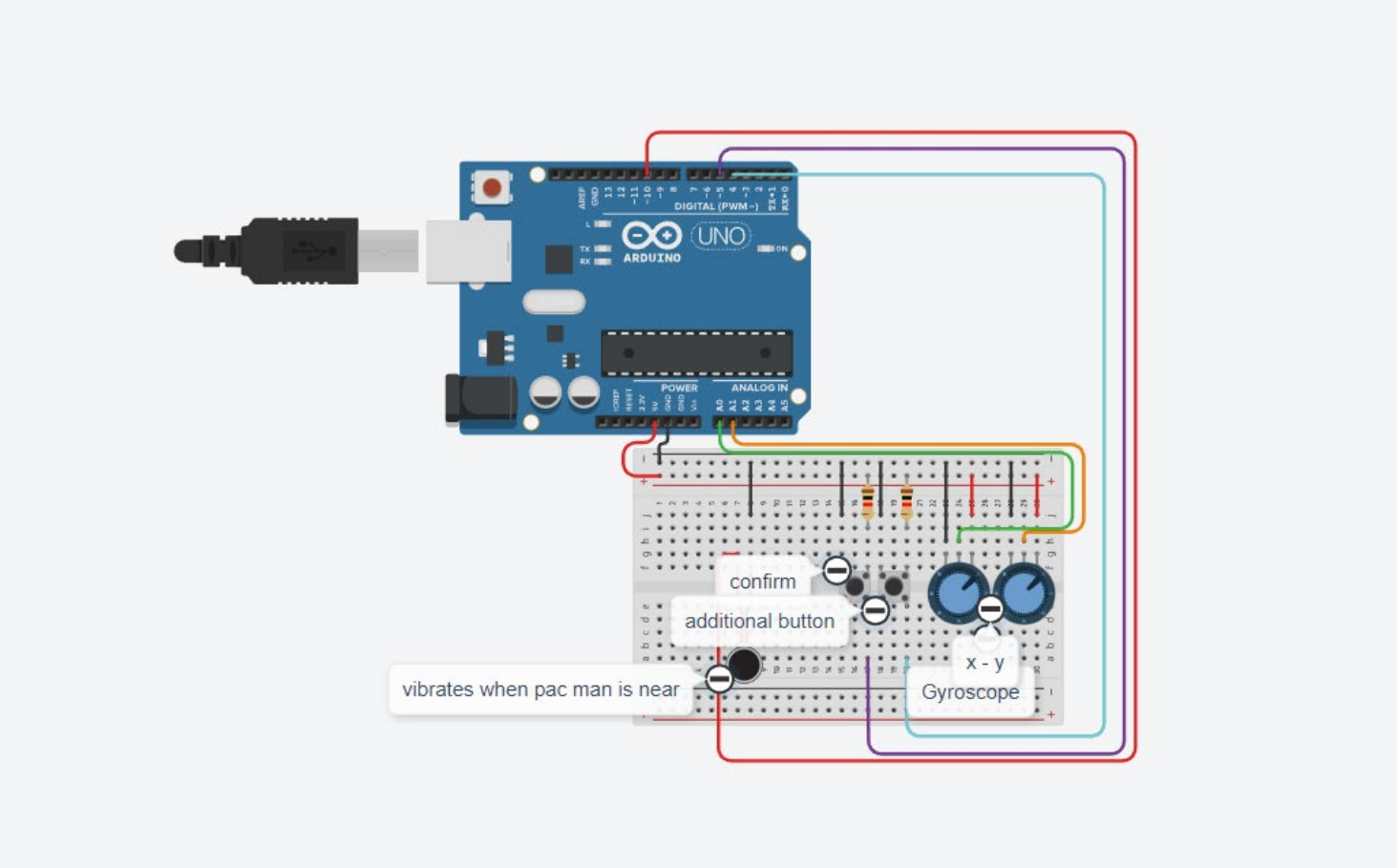
Final Exam

Practical portion explanations

The controller is a basic design modeled after how the ghosts look. This is why there is a rectangular body and a curved top, resembling the appearance of one of the ghosts. The idea is using two buttons, a gyroscope and a vibration motor. The vibration motor goes off when Pac-man is near the player, indicating either the ability to attack or that they are in danger. The gyroscope is used for movement. The player will rotate the controller based on the direction in which they would like to move. The two buttons can be used for restarting a level, going to a new level, or any other functions, along with selecting things.

In Fusion 360, I have developed the basic model of my controller, and placed the electronical components above the controller to indicate where in the controller they would be placed. Breadboard and Arduino side-by-side, with the motor at the top of the controller, and the two buttons in the large spaces indicated by the circular outer parts coming from the controller. The gyroscope would be placed in the middle.

TinkerCAD simulation (link available in repo README) shows the wiring involved with this controller, setting up the Arduino and breadboard together, with the various electronic components I have mentioned.



In terms of assembly, the idea is to have the back side (opposite to the buttons) removable to access the inside. The controller would be placed back together using screws in the four corners of the back. This would not interfere with any parts of the controller and allow for disassembly if needed, without being too easy, so it does not break easily.