Exam notes controller for game Pac Man ghost controllers By Nicholas Paolucci 100750011

Rough mock up of the design

For this controller which is shaped like a ghost from pacman i designed it to keep the details in mind with it holding the general shape of the ghost the controller will be able ideally to be rotated to either have the user holding the bottom near the bottom of the ghost or if the player wants to they could spin it around and have the top of the controller nearest to them either way the experience should not be affected the controller design features 2 main inputs 1 a joystick to control all the ghosts movements kinda like what the arcade cabinet has to control pacman

joystick mockup and d pad mockup

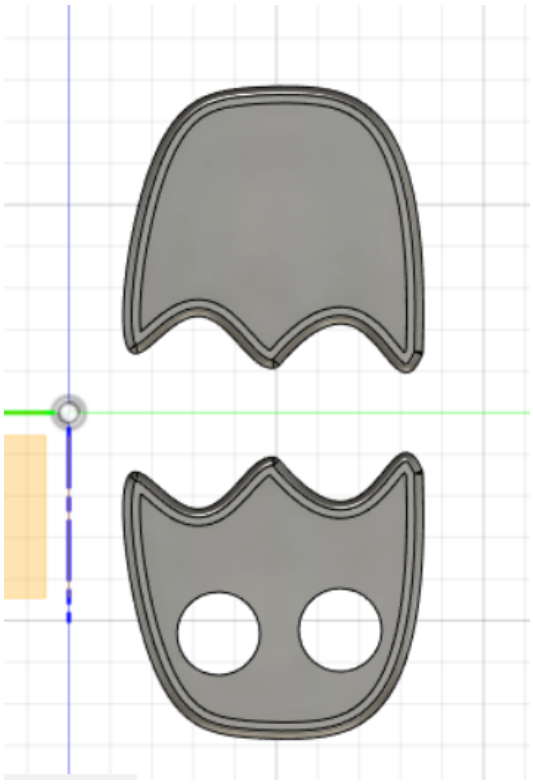
The dpad will be used to control the jump with it functionally acting as 4 buttons 1 for each ghost and depending on the direction you press a certain ghost will jump ie left on d pad will make

pinky jump where right will make clyde jump and inky will jump when down is pressed and blinky when up is pressed on the dpad.

Instant change of plans occurred when i found out you can't use a joystick in tinker cad and also there is no d pad function either so to approximate the d pad i created 4 push buttons in the shape of a d pad approximately as for the joystick I have decided its best to also replace it with a d pad seeing as the ghosts only ever move up down or left or right there is no need for the extra directional control offered by the joystick.

Components

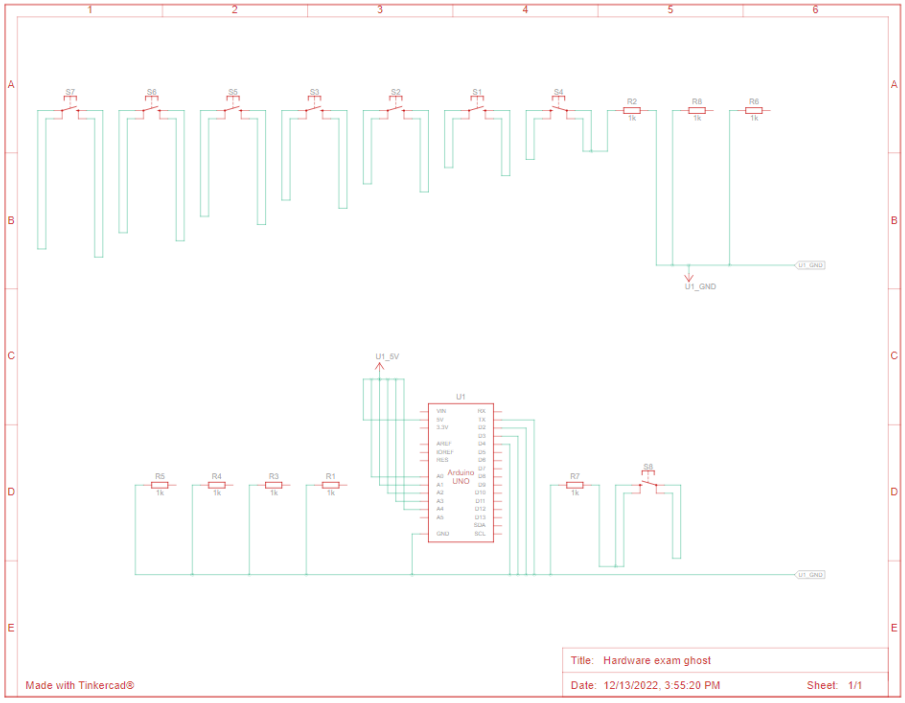
To Accomplish this would be push buttons specifically 8 of them to create a pseudo dpad design twice over essentially I would want to create what amounts the a NES controllers layout in the place of the 2 eyes of the Ghost with 1 eye containing 1 dpad and the other eye containing the 4 buttons and or 2nd dpad

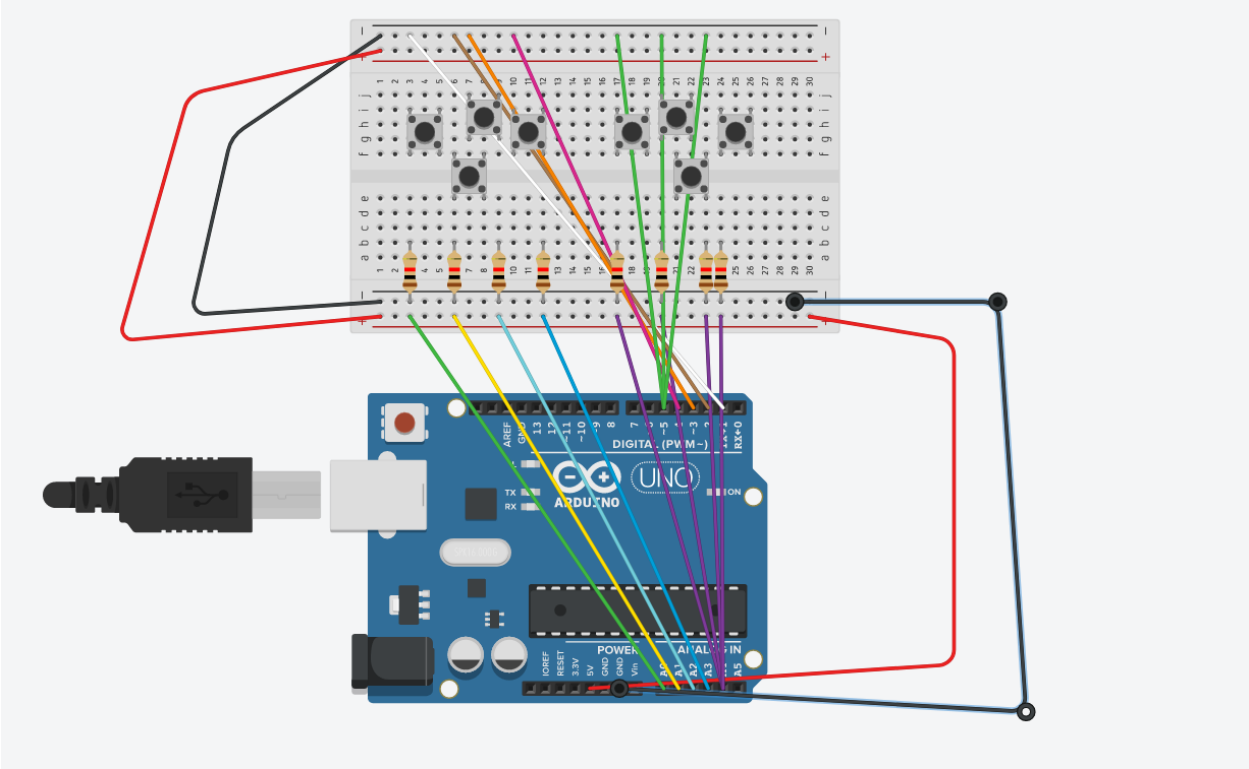


Fusion model this is the base model i created in fusion to put the components together in the lid has 2 holes where the eyes would be in those 2 holes is where all the buttons will be located This was done to keep the integrity of the design in tact with the only places they could really be put without making the design not resemble the final product for the design I filleted the hard edges because I wanted it to be easy to hold and comfortable while being held the plan to hold the controller together was to use superglue on mini magnets and use those on either side of

the controller to hold it together tightly while still allowing the user access if they absolutely needed it.

I also attempted to do a tinkercad simulation but I was running out of time and was struggling to get it working so I will explain essentially what I wanted it to do here instead and hope I get some Marks at least





The technical drawing and diagram

Tinkercad explanation For the tinkercad model I attempted to create what essentially is a d pad and 4 buttons similar to what you find on nearly all modern controllers in some way shape or form my reasoning for this is a d pad is the perfect control scheme for a 2d game like packman and even better for a 2d game where you only move in 4 directions and on 0 diagonals

The second 4 buttons was essentally to be the jump button for each individual ghost with each button corresponding the a ghost and allowing them to jump a wall so essentially all the ghosts would have had a unique jump and you would have to pay attention t time said jump well because all the ghosts direction is controlled by the d pad meaning the main way to get them to go different directions is to have them each jump when you want them to because otherwise they all will just move the same way. I was planing to do this by having each tied to an input on the arduino with the 4 dpad directions being tied to a single outputt because said input would control how they act and allow the player to control the ghosts as 1 single unit I also did it that way because there was no d pad device to put in place of the 4 buttons but 4 buttons would essentially have the same effect