

Log-Hei (Jonathan) Leung

Hardware Final Practical Portion

The new duck game that I have created is essentially the same game, but you play as a duck trying to avoid getting shot at. Jumping gets you points, but risk failing to the ai programmed shooter. Turning the potentiometer would make the character go right, but turning it off, makes it go left.

Components Explanation:

The Controller is in a shape of a duck. I have used one potentiometer for movement left to right potentially, where turning it either moves the character or not. There is one button that was used to simulate jumping. The potentiometer and the button are to be hot glued to the surface of two pillars to secure the hardware in place. The vibrator motor is also hot glued to the outdented placement. This motor will activate to signal movement. The Arduino and breadboard should fit in place, minimal glue. An LED is provided, but I needed to block it out due to the un-useable size of the provided model. The LED should light up every time you jump. There is a custom button made to fit the button module. This is just for the user to feel more comfortable when pressing the button. The bottom and top components of the controller were made to fit all components.

Technical Drawings:

Due to the time allocated and design decisions, the technical drawings attempts at showing the dimensions, although poorly.

Assembly Explanation:

Although not modeled or shown, the plan for the assembly includes hot glue, magnets, and possible pegs. There is enough room to install pillars on the head and either side of the breadboard to install magnets in. This would allow easy access to the internal components. Pegs can be used, but it will take longer to make, and may snap if the wrong size is used. Hot glue will be used to hold down some of the components, to make sure they do not jiggle around when shook. The LED should also be glued down, but from the top.

TinkerCad explanation:

In the shown tinkercad video, I have two potentiometer. The reason being, I had first thought of using a joystick, but decided to just use one potentiometer instead. As you can see, when the potentiometer is on, the vibrator activates. Same goes with the button. If the button is pressed, the led lights up to signify jumping. In game coding for in engine has not been coded.

Improvements:

The prototype was rushed and the shape and stress were not tested. For tinkercad, if there was more time, I would have coded the potentiometer to make the vibrator move if it was above or below certain voltages. More wires could have been shown to simulate how it would work inside the casing as well.