Hardware Exam

Written Component/Explanation

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December 5th, 2024

For my exam assignment, I decided I wanted to try to come up with a controller that could be used with my GDW game this year. My group has decided to develop a rhythm game, so I wanted to come up with a controller that is both easy and fun to use.

What I came up with is a keyboard-like controller that contains:

- Arrow keys as directional input for dodging enemy attack sequences.
- Lighting that flanks the largest button on the board, indicating when you can use your special ability by lighting up
- A large bar that can be tapped to the beat of the music at all times, and slammed once the lighting indicates that your strongest ability is ready.
- Speakers that allow music from the game to be played through the controller itself as well as other speakers, to increase the ability of the player to hear the beat clearly.

I created this design based on what I thought would be easy to understand for the player, and what people would have fun interacting with. I figured that if people get into the music, they would feel a big payoff when slamming the largest button to activate their special attack because it feels different than the regular controls they use otherwise.

I wanted it to be large so that it isn't easily toppled or moved while in use, with plenty of space to add grippy surfaces to the bottom of the controller for support. The design I am submitting is not created to actual size specifications as I did not have a way to measure properly, in person. Instead, the controller is proportionate and may be scaled to the desired size at a later time.

I could not figure out how to access the mechanical components in Fusion, but I would need LED's, 5 button components (4 for directional dodging, one for the large attack button), a pressure sensor to differentiate between a button click and a stronger hit, and an Arduino Uno to run it all. I would also need foam for the buttons so that players don't hurt themselves when using force.