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Steps Taken

Initial Sketch was made to resemble the functionality of popular gamepads such as the Xbox Controller and the DualSense/DualShock Controllers.

Inputs were considered when brainstorming what was necessary for the controller*

- Microbit uses a gyroscope and accelerometer to provide roll and yaw directions for input, similar to those found on Wii Remotes to aim
- LEDs light up when the user takes damage in-game
- Joystick acts as player movement
- Pushbutton acts as a shoot/action
- Speaker on microbit acts as auditory feedback on the shoot and reload

Configuration and button placement were done with other controllers in mind

Electronics Prototype was done in Wokwi, where a setup of all components was put together.

CAD was created in Fusion360.

1. The shell was made
2. The parts were implemented
3. Considerations for parts to fit in the shell, such as holes for the joystick, pushbutton, LED, and shell were split in half to house components
4. Exploded View created from each part
5. Drawing made from exploded view