Presentation

# Team:

## Designer, Programmer, Assembler:

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Matthew worked for more than half a decade as an electronics manufacturing technician before he decided to go back to school. He is now training to be an IoT and rapid prototyping specialist.

Matthew is a voracious reader and gamer, with a particular fondness for sci-fi and fantasy novels, and well-made single player RPGs. He considers the LitRPG genre to be one of the greatest creations ever, at least when written well.

If he isn’t listening to audiobooks, Matthew is nearly always listening to music, which is the motivation for this project. His favorite instruments are piano, violin, and drums, and actively looks for bands that use all 3. He mostly listens to metal, but he greatly enjoys classical instrumentals as well.

# Project Summary:

When he was tasked with making a smart controller for Hue bulbs and Wemo outlets, Matthew was given the freedom to add other features. Matthew quickly decided to integrate his love of music into the controller.

The resulting product is an MP3 player with integrated speaker that automatically turns on music, lights, and outlets when it senses someone sitting in front of it. The system automatically turns off 10 seconds after it stops sensing anyone.

The buttons on top of the enclosure allow the user to pause, skip to the previous or next track, and turn off the lights and outlets. Clicking the encoder switch changes to the next playlist, while turning the encoder controls the volume.

The Neopixel ring lights up to display the current volume, and changes color based on the temperature. The pixels will be pure blue at freezing and will become redder as the temperature goes up. It becomes pure red at 100ºF.

# Challenges:

The biggest challenges with the creation of this product were correctly sizing the slots for the components in the enclosure and doing the wiring inside the case. When he has time, Matthew plans to redesign the enclosure to have the front panel be printed and installed separately from the rest of the enclosure so he can do the wiring before finishing the assembly.

There were also some issues getting the MP3 module to work, but these were overcome before they could stall the development too much.