# Midterm 1 – Smart Room Controller:

Desired goals:

* Have the Hue lights change color on a scale of blue to red based on temperature. This should be easy because I already have code that can be quickly adapted for this.
* Use the Wemo outlets to turn on a fan, an mp3 player, and a few speakers around the room.
  + The speakers will turn on when I sit at my desk and turn off if I’m away from my desk for more than 5 minutes.
  + The fan will turn on if the temperature goes over 75ºF.
* The OLED will display the currently playing song, the current and total time in the song, and the current temperature.
* The music will automatically turn on when I sit at my spot in the room and turn off when I leave my spot for too long.
  + There will be 2 automatic modes with different playlists. The first mode will play classical music quietly, the second mode will play metal loudly.
  + Moving away from my spot will automatically turn the playlist to quiet mode.
* The manual controller will be a 3d printed remote control.
  + The OLED will be near the center of the handle,
  + Neopixels will be in the remote to display volume with the number of lights enabled and temperature with the color.
  + An encoder will be used to control the volume and will change color depending on the current playlist.
  + A button to toggle modes. The encoder will be used for this.
* I’ll use the makerspace to craft a charging stand for the remote. If I can figure out how, the BME will be in the stand. Otherwise, it’ll be at the front of the remote.

Stretch goals:

* Extra buttons to control the songs.

AnticipatedComponents:

* A new photon 2 because my current one will probably be permanently fixed in the remote.
* An mp3 player capable of changing playlists over wifi. I might need 2 mp3s that I can swap between if I can’t get the one I’m using to switch playlists over wifi.
* At least 3 speakers.
* A BME to get temperature.
* A proximity sensor to sense when I’m sitting in my chair.
* An OLED to display temperature and song info.
* The neopixel ring to display the volume in increments.
* A PCB or breadboard to solder components into.
* An RBG encoder for volume.
* 4 buttons for power, playlist swaps, wemos, and huebulbs. The encoder counts as a button.
* A block of wood to make a charging stand out of.
* Batteries that can power my remote.

Concerns and Consideration

* I’m not sure if a single MP3 player will work with this setup. If not, I’ll need 2 to swap between for different playlists.
* I need to get timers to finally click for me. I’m still having issues with them.

Notes:

* Discuss with at minimum Johnathan, Joshua, and either Ana Chavez or Charles Call.
* Get help with the woodworking stuff because I’m not confident with the machines.
* Keep many notes and pictures to upload to hacker.io and github.
* Don’t forget the presentation! Write a script beforehand so I have an idea of how I want my presentation to go.
* Ask how to use rechargeable batteries to power the remote.
* I have the first draft of the fritzing and schematics ready.