CS122A P2 Proposal

Baby Monitor and Noise Machine

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**Introduction**

This baby monitor and noise machine aims to combine several essential gadgets made for parents of toddlers into one, self-contained system. Rather than having one device for playing white noise for sleeping toddlers, one for controlling a night light and another for a baby camera – this system will combine all three of these devices together to create a much more space efficient package that can be controlled via a smartphone. Via the smartphone application a parent will be able to remotely monitor their child via a live video feed at any given time, while also choosing from a selection of different white noises to ensure their baby is sleeping comfortably, as well as choosing from an assortment of different light settings based on the environment they wish the room to be in.

**Complexities**

1. OV7670 camera module for a live video feed.
2. ESP8266 NodeMCU is the wireless module which will be communicating the information from the arduino to the smartphone application.
3. Blynk IoT will be our application of choice (May be changed to different applications depending on compatibility and further testing).
4. Active buzzers for simulating white noise sounds.
5. Different LED’s for nightlight simulation.

**User Guide**

The user will download the Blynk IoT application to their smartphone of choice. The user then powers the system on. Once the system is on the camera will remain in a standby state, to be activated upon the user accessing the camera option via the smartphone application. Once accessed the user will be able to view a live feed from their smartphone showing the immediate surroundings of the arduino. A pre-set list of different white noise sounds, on loop, can be selected from and played via button presses on the arduino unit itself. These will also be able to be changed via the smartphone application and virtual buttons. Additionally, the nightlight LED’s can be managed and configured via the smartphone application.

**Hardware Components**

* Computing
  + Elegoo UNO R3 microcontroller
* ESP8266 NodeMCU
* OV7670 Camera Module
* Inputs
  + Smartphone Application
* Outputs
  + LEDs
  + Active Buzzers