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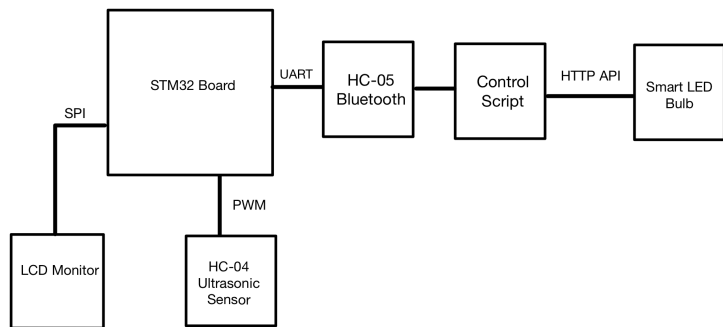
**Project Proposal: sLight of Hand**  
<https://sites.google.com/view/slight-of-hand/>

Overview:

We will utilize the STM32L476RG microcontroller to create a smart desk lamp. We will leverage the board's Real-Time Clock (RTC) in order to adjust the color temperature (K) of the light bulb. The user will be able to use an HC-SR04 Ultrasonic Sensor to adjust the brightness of the light bulb by hovering their hand over the sensor. These readings will be forwarded to an HC-05 Bluetooth module which will be sent to a control script that adjusts the light bulb accordingly. An LCD display will be used to display the current time, as well as the brightness level and color temperature of the light bulb.

Peripherals:

- HC-SR04 Ultrasonic Sensor
- HC-05 Bluetooth Module
- ILI9341 SPI LCD Display
- Smart LED Light Bulb



Serial Interface Protocols

- UART for Bluetooth
- SPI for LCD Display

Responsibility List

<b>Matthew Nguyen</b>	<b>Ethan Epp</b>
<ul style="list-style-type: none"><li>● Program HC-SR04 to adjust brightness</li><li>● Program LCD display to show necessary data</li><li>● Read documentation for HTTP API of Smart LED bulb to create control script</li></ul>	<ul style="list-style-type: none"><li>● Set up RTC on board and relate it to color temperature of light bulb</li><li>● Program HC-05 Bluetooth Module to send readings to control script</li><li>● Retrieve light bulb data from HC-05 Bluetooth module in order to provide data for LCD</li></ul>