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Embedded Systems Design
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23 April 2019

Statement of Work: Security System

This system will utilize a PIR motion sensor, a speaker, and Wi-Fi for security purposes. Once the system is armed, it will poll for the input value from the PIR. This aspect of the system will be powered by the BBBw. The Wi-Fi will be integrated into the system by allowing the BBBw to access the internet, send texts, and receive texts. These texts will be used to arm or disarm the security system based on its current state. For instance, once the system is turned on and armed, the user may send a text to disarm the system; conversely, the system may be armed by a text from the user. If the system is armed and triggered by an intruder, then the user *must* send a text (most likely a predetermined password/PIN number) to disarm the system. The speaker will be integrated with the system by playing a sound output (.wav file) which will be an alert for intruders to exit the premises. The speaker's turning on will be a function of whether or not the PIR sensor detects movement after the system is considered armed. Finally, we will make the system robust to different locations. Even if the user wants to use the security system in different locations, with presumably different Wi-Fi signals, the security system will allow the user to input a username and password to sign into the local available Wi-Fi. This interfacing will be done through a local web page served by the BBBw.