**Project Work Progress Report No 3**

Date: 03/10/2019 Team #: 33

Project Title: Intelligent Door System

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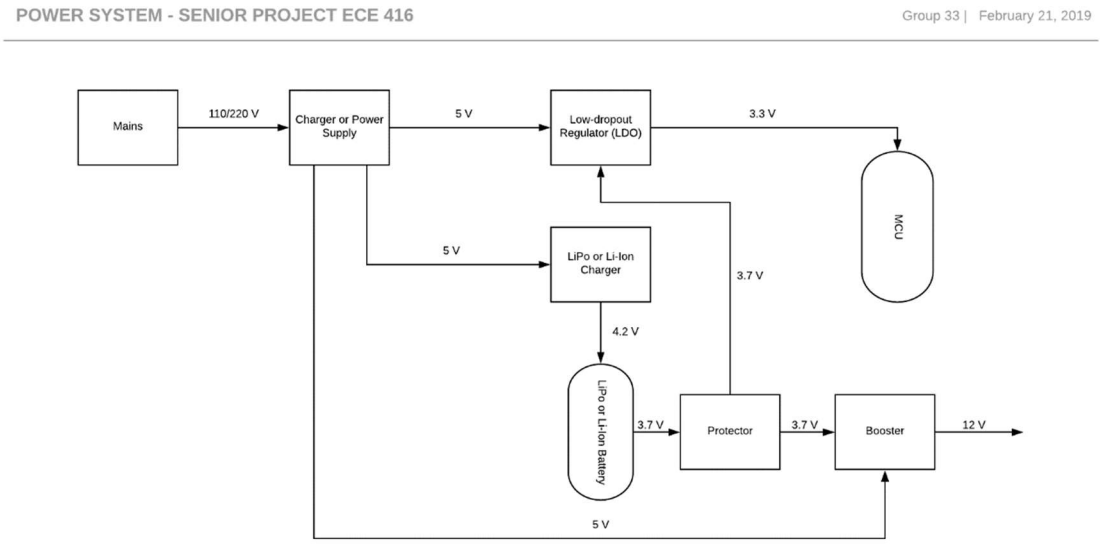
1. Project progress since last report:

**Hardware**

The power system we are designing for our project has been completed and we have all the necessary components. The main issue we had was to find the right boost converter to step up the 5V line to 12V because of the solenoid lock we previously selected while also providing battery backup system when a power outage occurs. We were able to find those components for a very affordable price and because of this it simplified our schematic and design. Our next goal will be to build the power system and test it.




The following two weeks:

- A list of the different GPIOs needed for the project will be finalized by the end of next week.
- Preliminary design of PCB will be finalized.
- Power System will be tested.

**Network Framework**

- Connection has been made with router in a private network.
- After stablishing the connection, the ESP32 displays the IP address of the private network in the serial monitor, thus allowing us to ping the network easier in order to stablish an internet connection.

- ESP32 Wi-fi capabilities were enabled allowing it to connect multiple devices, the ESP32 will display the number of devices connected in its network.
- A personal IP, gateway and mask were generated in order to create a static IP address for the ESP32, this will come in handy when trying to connect to a server for the App

The following two weeks:

- Create a small web server in LAN
- Generate an access point between the ESP32 and the web server
- Use the Wi-Fi capabilities previously developed in the ESP32 to make it accessible to the web server regardless of the distance
- Generate status messages in the web server though the ESP32. This status will indicate how many devices are connected in the ESP32, the name of the devices and the IP addresses. This will be useful when we trying to encrypt the user's information for better security.

**Application**

- Login interface finalized by allowing multiple users to have its own account
- Application is Wi-Fi enabled.

The following two weeks:

- Create a password and encryption method to unlock the door wirelessly using Android App.
- Test Wi-Fi connection and pairing method of the ESP32 with the application.

2. Milestones achieved:

- Power System finalized
- MCU Wi-Fi capabilities were enabled
- Application is Wi-Fi enabled
- Account and User interface finalized in Application
- Solenoid circuit has been tested.

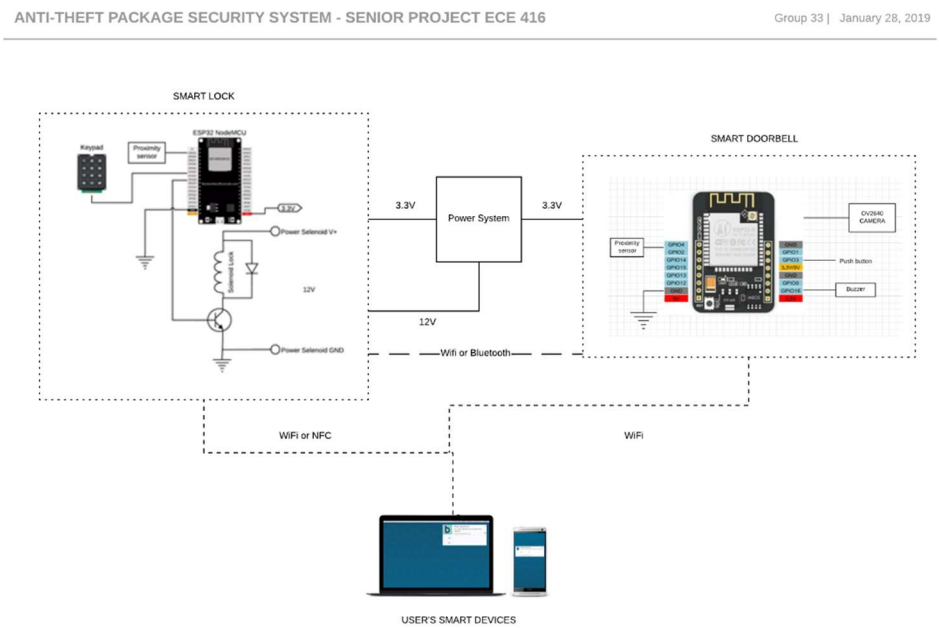
3. Problems and roadblocks, if any:

- I2C and SPI communication between the ESP32 and PN532 is not possible.
- The ESP32-CAM module for Smart Doorbell module was backordered because they are out of the stock.

4. Is project on schedule? YES__X__ NO____

5. Next steps: (elaborate specifically on any problems listed in 3 and if the answer in 4. Is NO)

The Adafruit PN532 was removed from the project because of time constrains. This shield enabled NFC features in the project. The team is going to work in implementing a password and encryption method on the Android App so the lock can be unlocked wirelessly by applying different levels of security. The diagram has been updated.




We are looking into replacing this module by buying this camera (ESP32 compatible) and using the board to communicate with it.