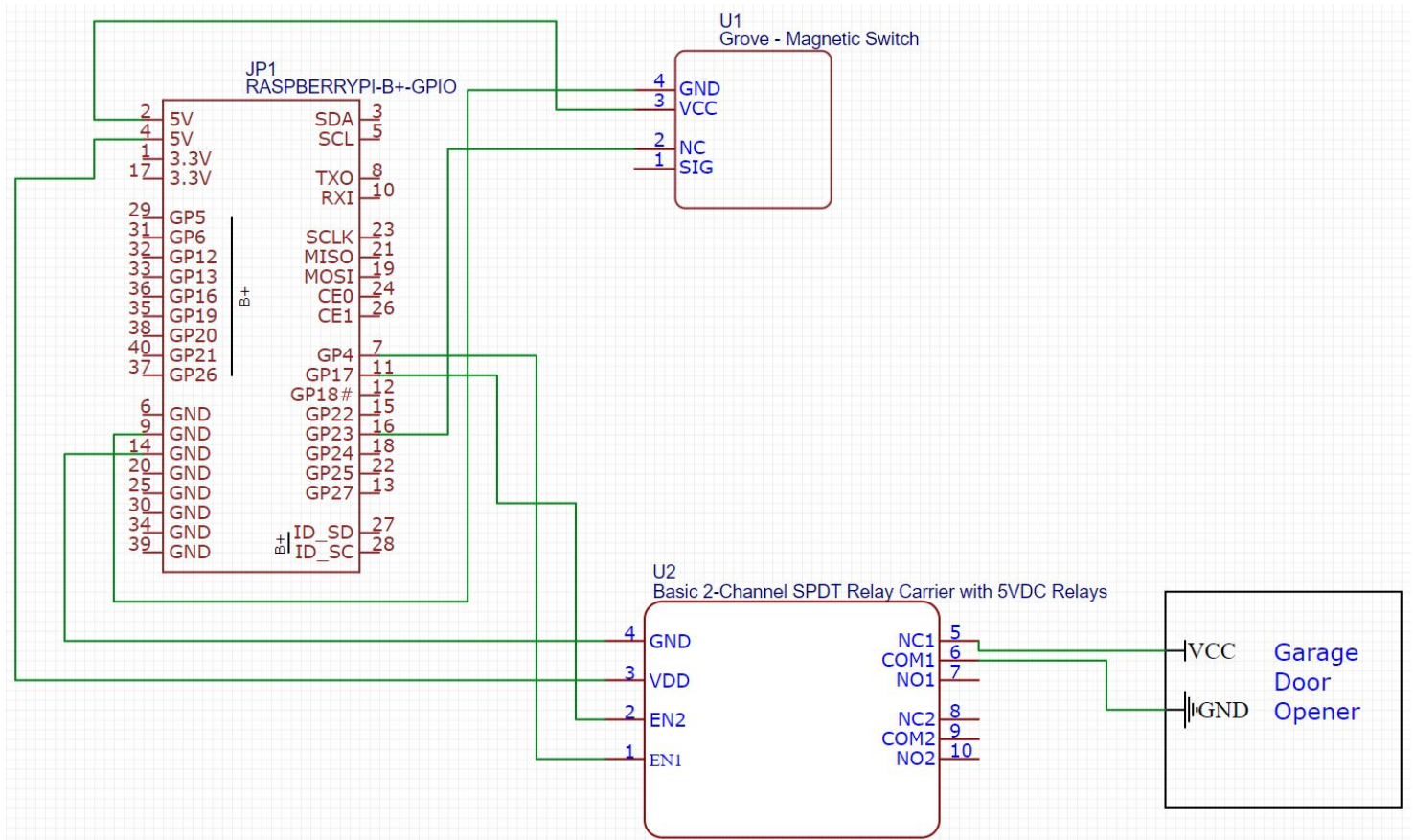


Senior Project Manual

Required Materials:

- Raspberry Pi
- Relay Module
- Magnetic Switch
- Jumper Wires
- Micro USB Cable
- Wall Charger (Power Brick)

Schematic:



(Note: Minor Modifications Required from Original Schematic)

- A 4-channel relay was used because it was more inexpensive

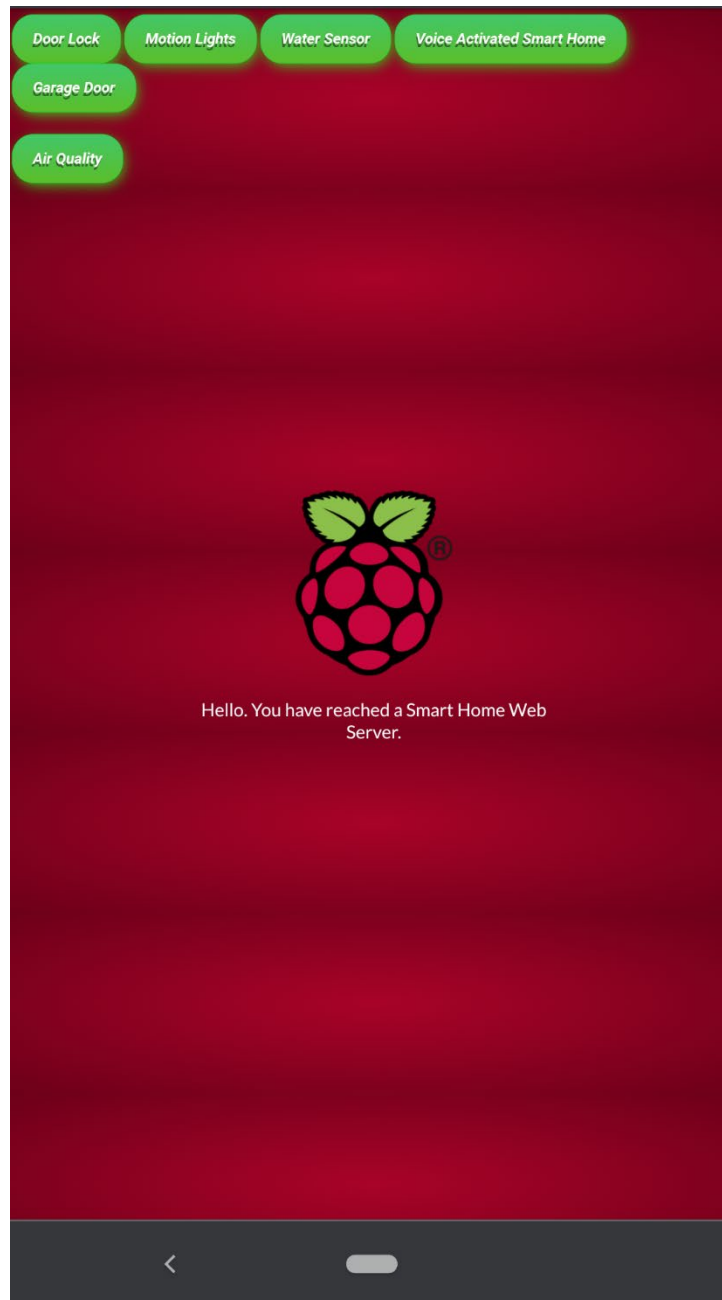
Wire Connection Instructions:

1. Pin 2 on Raspberry Pi connects to V_{CC} of Relay Module
2. Pin 7 on Raspberry Pi connects to Input Channel 4 on Relay Module
3. Pin 9 on Raspberry Pi connects to Ground on Relay Module
4. Pin 11 on Raspberry Pi connects to Input Channel 3 on Relay Module
5. Pin 13 on Raspberry Pi connects to Input Channel 2 on Relay Module
6. Pin 15 on Raspberry Pi connects to Input Channel 1 on Relay Module
7. Pin 14 on Raspberry Pi connects to Common (COM) Terminal on the Magnetic Switch
8. Pin 16 on Raspberry Pi connects to Normally Closed (NC) Terminal on the Magnetic Switch
9. Pin 1 on Relay Module connects to V_{CC} on Garage Door Opener
10. Pin 2 on Relay Module connects to Ground on Garage Door Opener

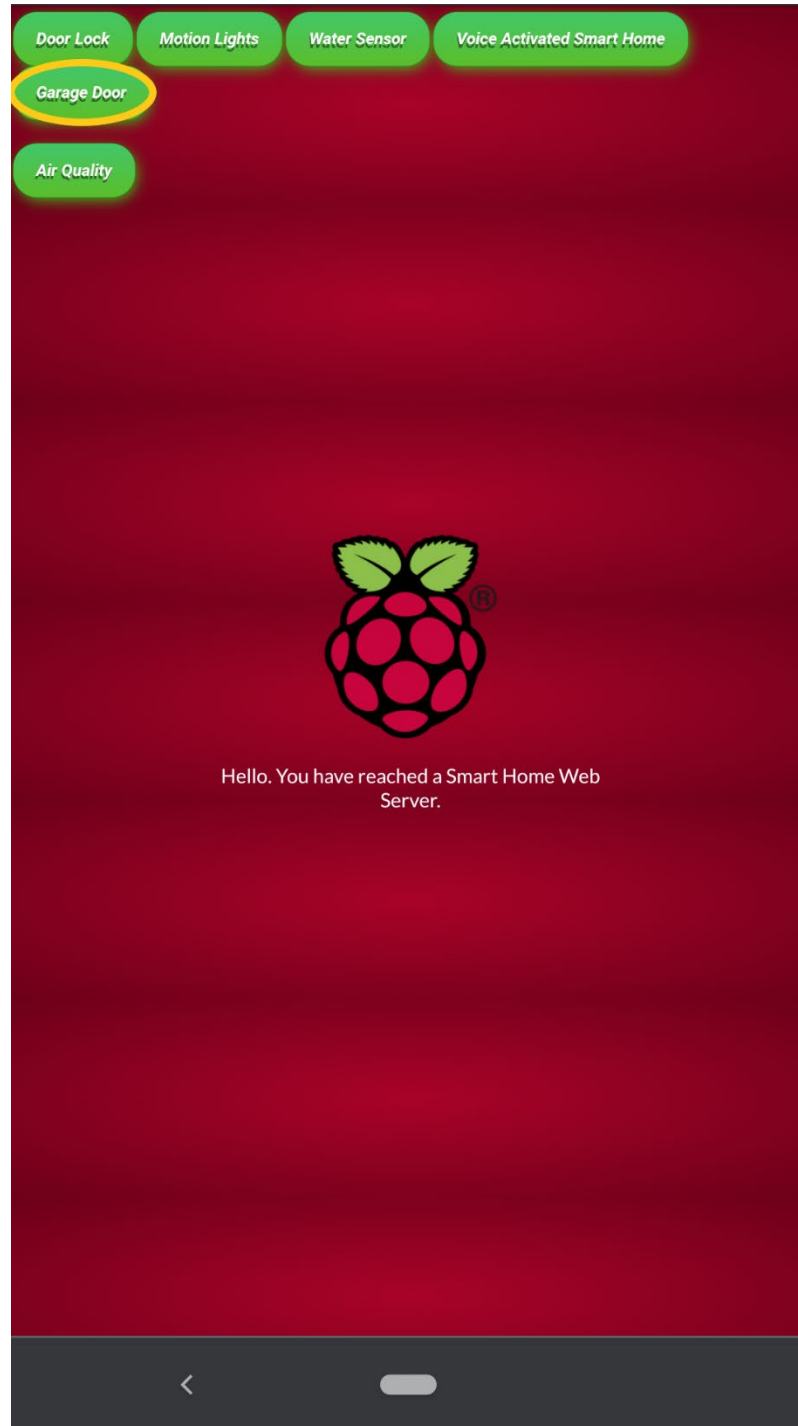
The purpose of the magnetic switch is to be able to detect whether the garage door is open or closed. So, the magnetic switch will be right next to the door. This means that u will need two long cables to run from the circuit to the location of the magnetic switch on the door. The cables should connect to pins described on instruction 7 and 8 of the wire connection instructions section. When the circuit is connected properly with the garage door opener the door will open as a result because there is a short in the circuit. The way a garage door opener works is when you hit the button it creates a short in the garage door opener which sends a signal to open and close the door. What this circuit does is allow you to send the signal to short the circuit wirelessly through a mobile device.

How to Use:

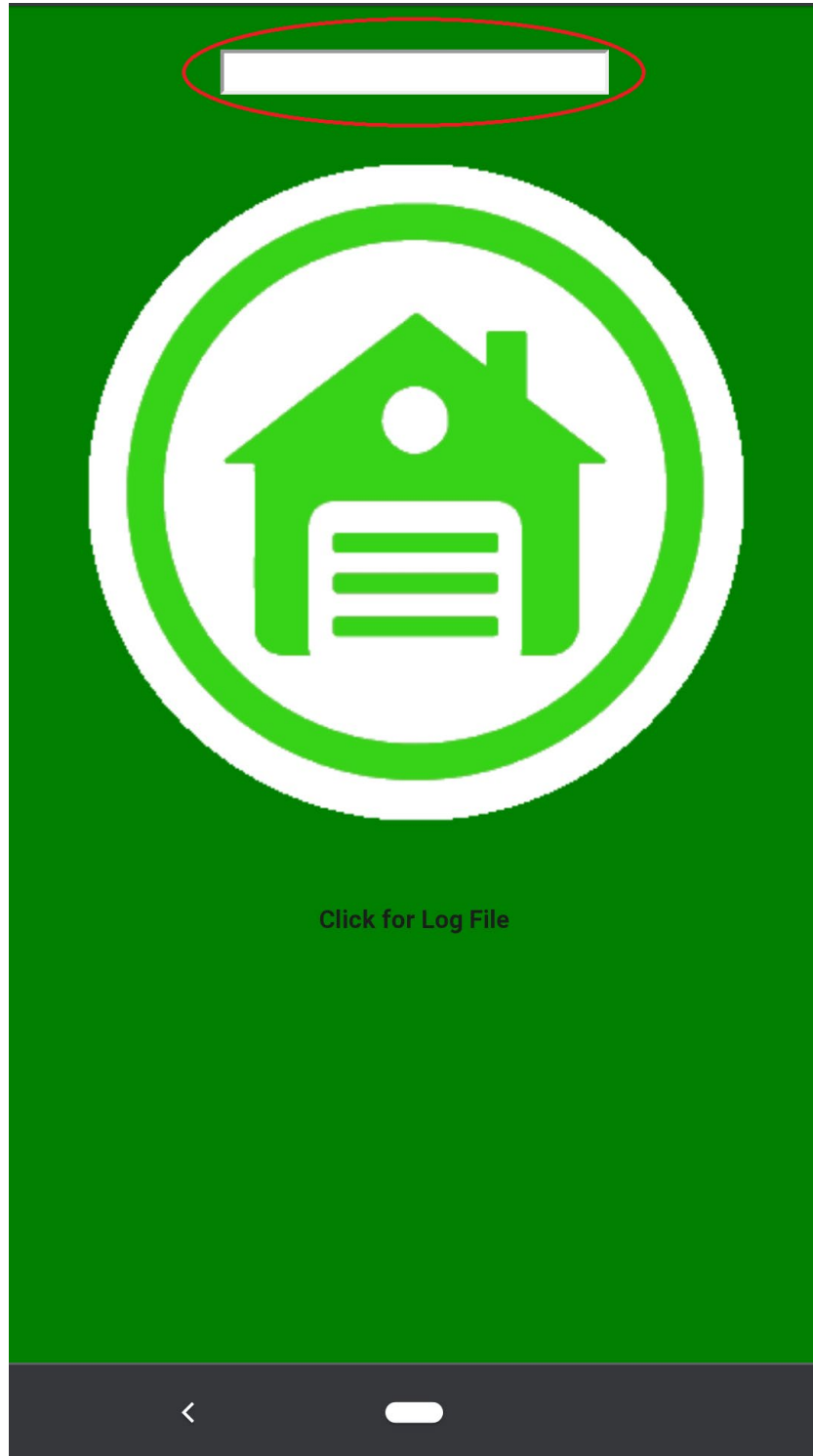
1. Go to web browser and use the following link: <http://smartpihome.duckdns.org:8888/>



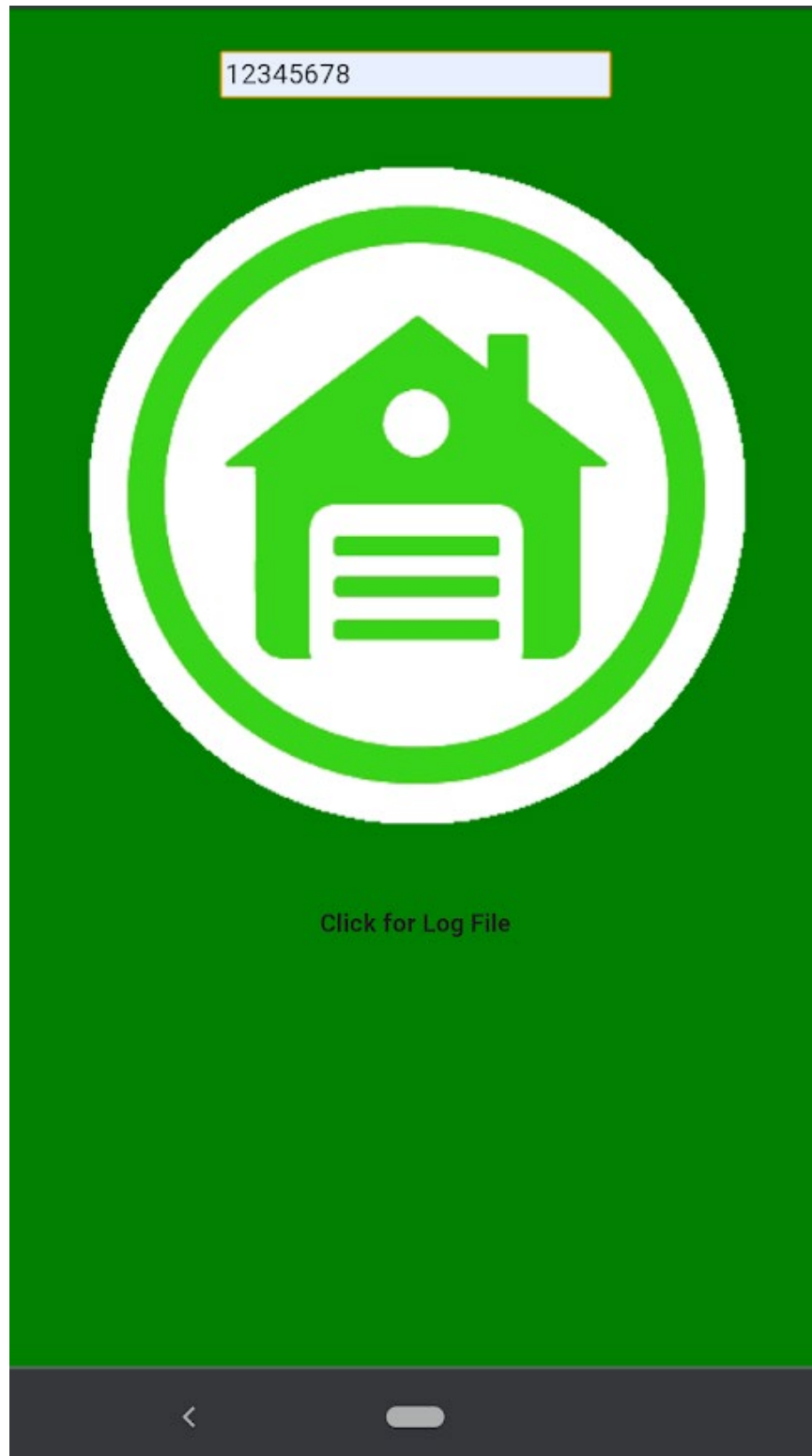
2. Select Garage Door



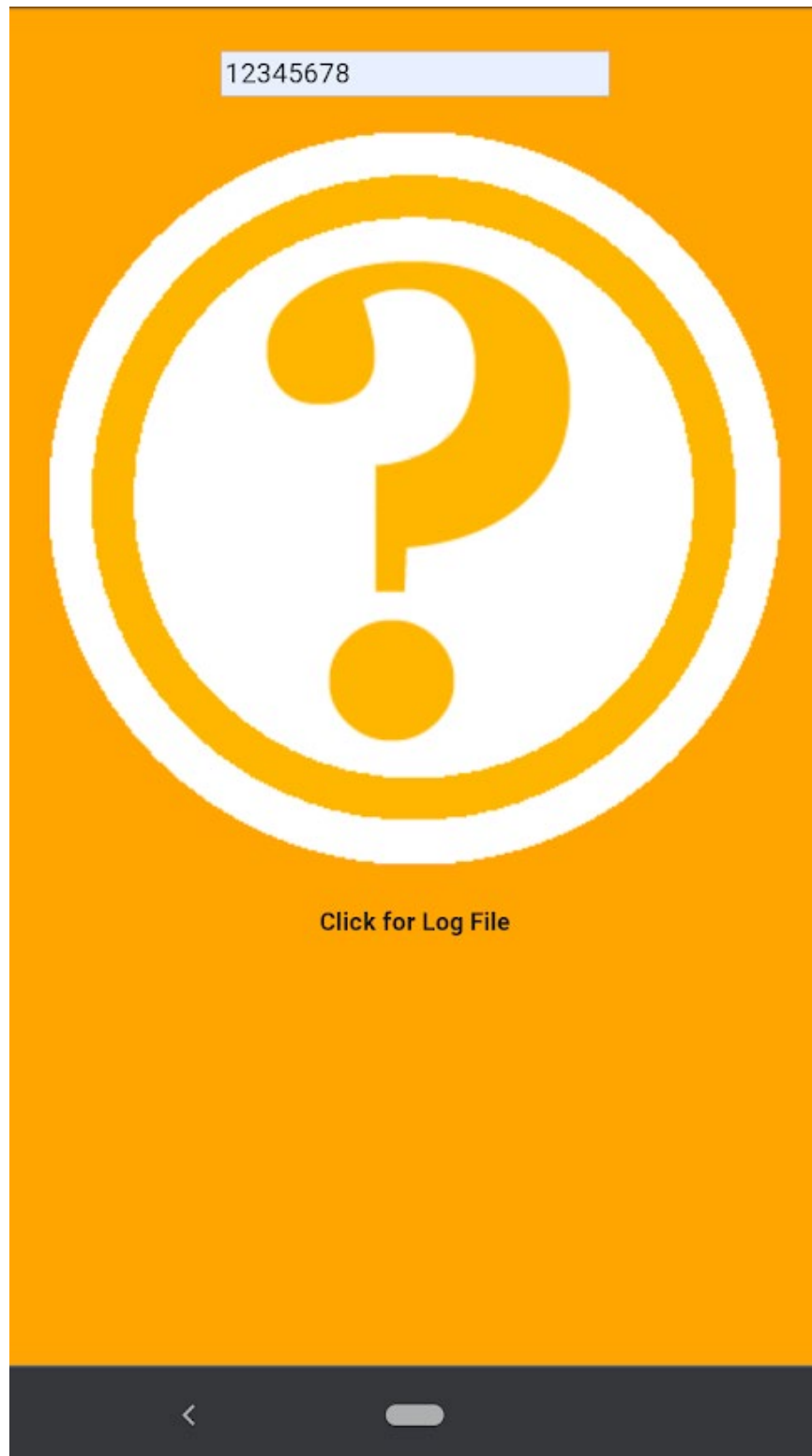
3. Type in password in the text box
 - a. Default Password: 12345678
 - b. Can be changed in menu



4. To open the garage door hit the green image of the house



5. To close the garage door, type the password again and hit the orange image of a question mark



Note: When the garage door is closed once again then it should be closed any time the screen displays the green image of the house

