DOTSLASH

BY ZUWEE TECHNOLOGIES PRIVATE LTD.

PURPOSE

- Create a framework called ‘Dotslash’ that can securely and reliably control a set of nodes wirelessly, over local network or internet, with help of a central hub.
- Use this framework to design, produce and market a range of integrated modern smart home solution.

DOTSLASH HOME

- 1) Dotslash Hub- Acts as the bridge between User and all the smart nodes(over internet or local network). It will have ZigBee and Wi-Fi wireless capabilities. Supports mesh networking and AES 128 encryption.
- 2) Dotslash Switchboards -It has the capability to turn devices on/ off(using electromechanical relay) as well current and voltage sensing capabilities

Status before joining MakerVillage

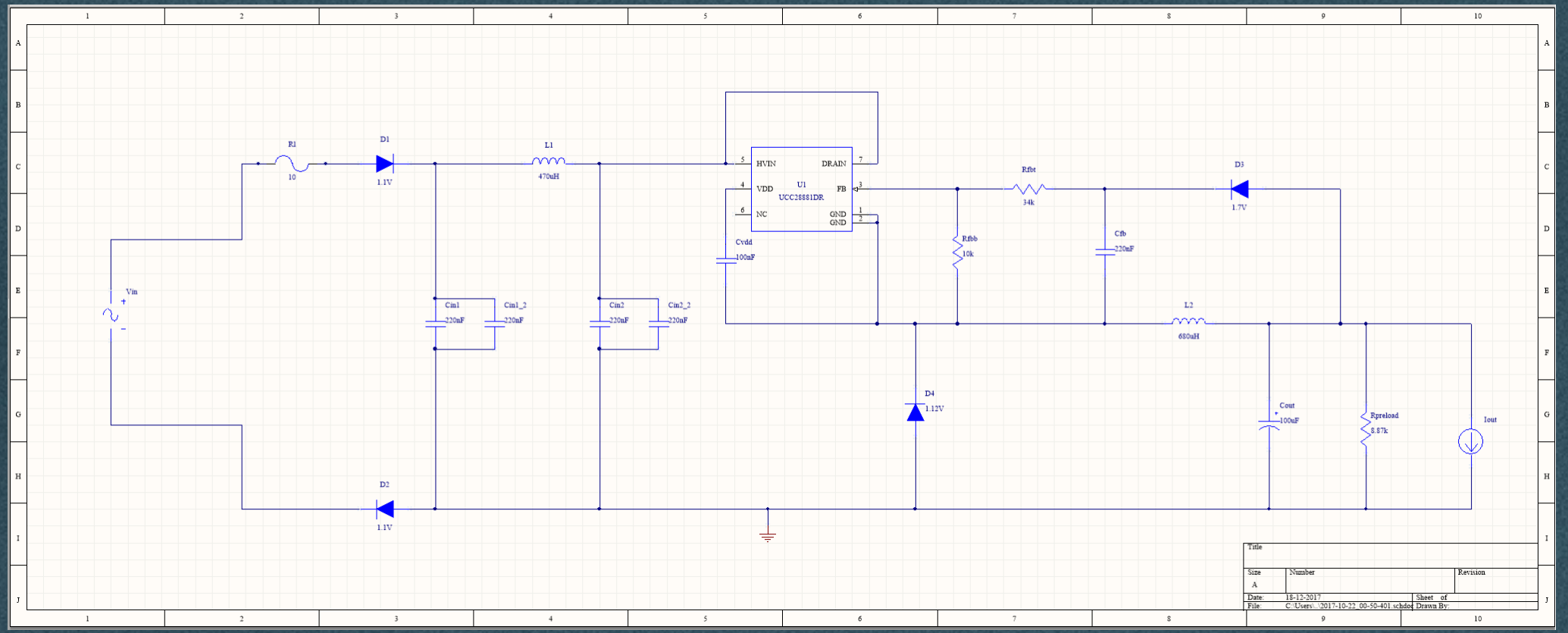
- Had firmware to be run on CC2538 Nodes
- Had implemented the server to be run in the cloud.
- Had client program and associated binaries to be run on hub to connect to the cloud and to communicate with cc2538 nodes.
- Hardware development was in the simulation phase. We were using development kits and Raspberry PI for software development.

CURRENT PROGRESS (Electronics)

- A switchboard was divided into three different modules and developed the following
- 1) Schematic and electronic design for an AC to DC 5V SMPS
- 2) Schematic and electronic design for bringing up CC2538 chip along with antenna , GPIO pins, and programming header.
- 3) Schematic and electronic design for latched relay with push button
- Simulations for voltage and current sensing circuits.
- Fabricated CC2538 bringup board
- Procured the components for CC2538 board

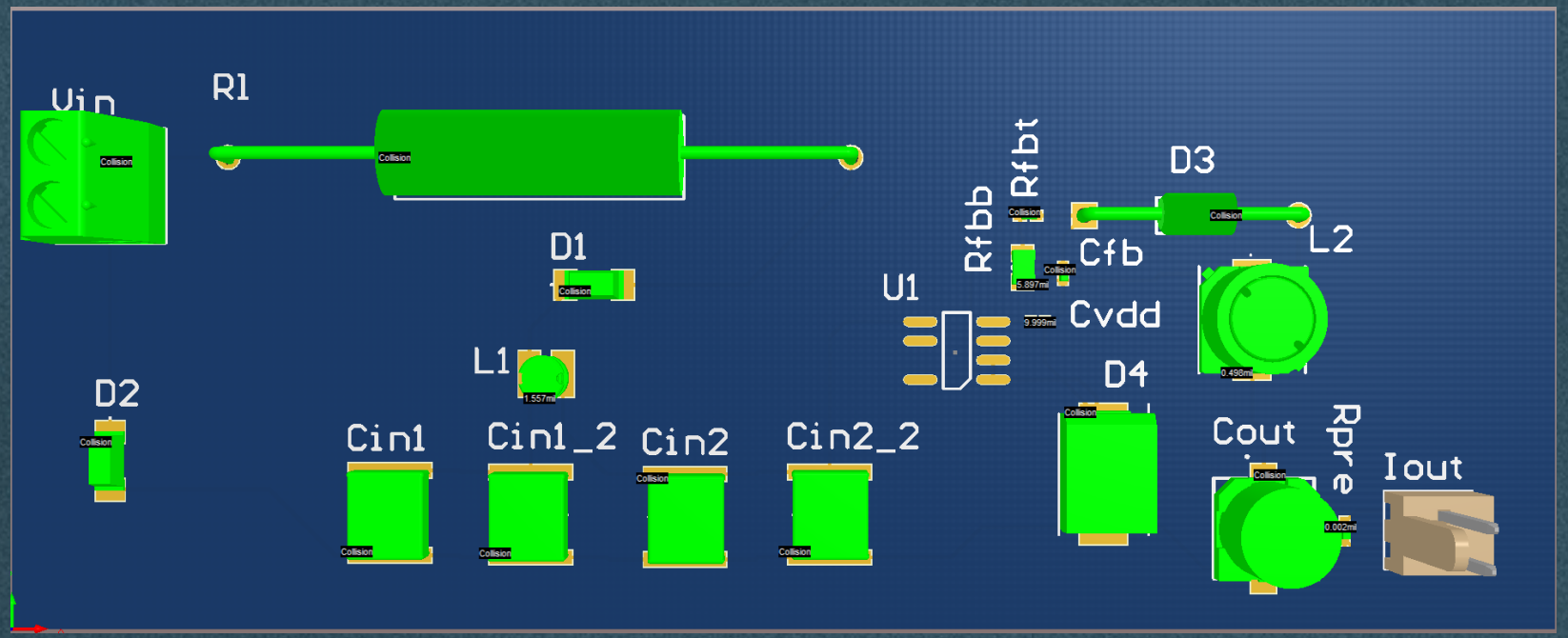
Proof of Work

- SMPS schematic



Proof of Work

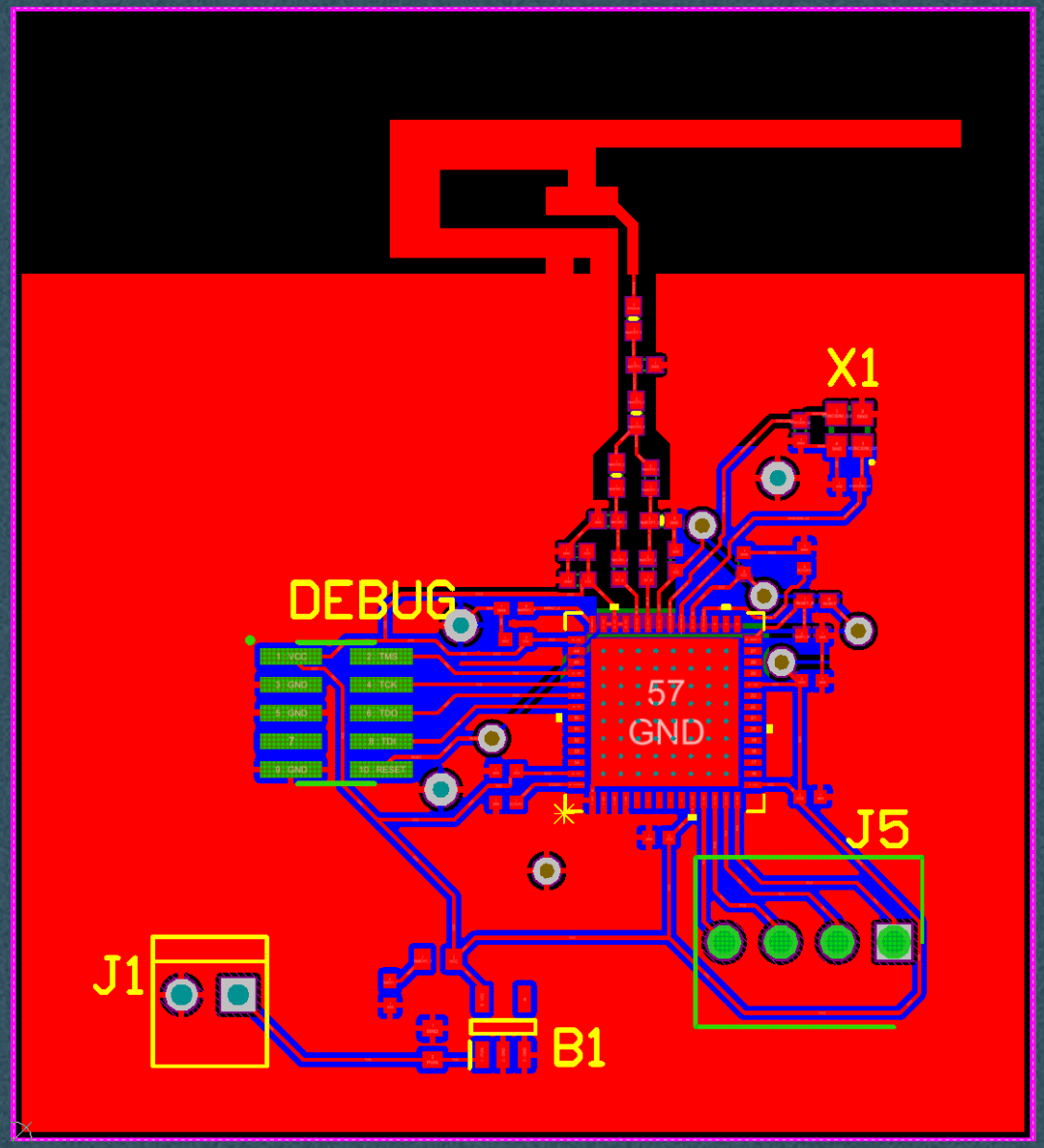
- AC to DC Model



- This design is discarded in favour of bridge things BT100 SMPS module

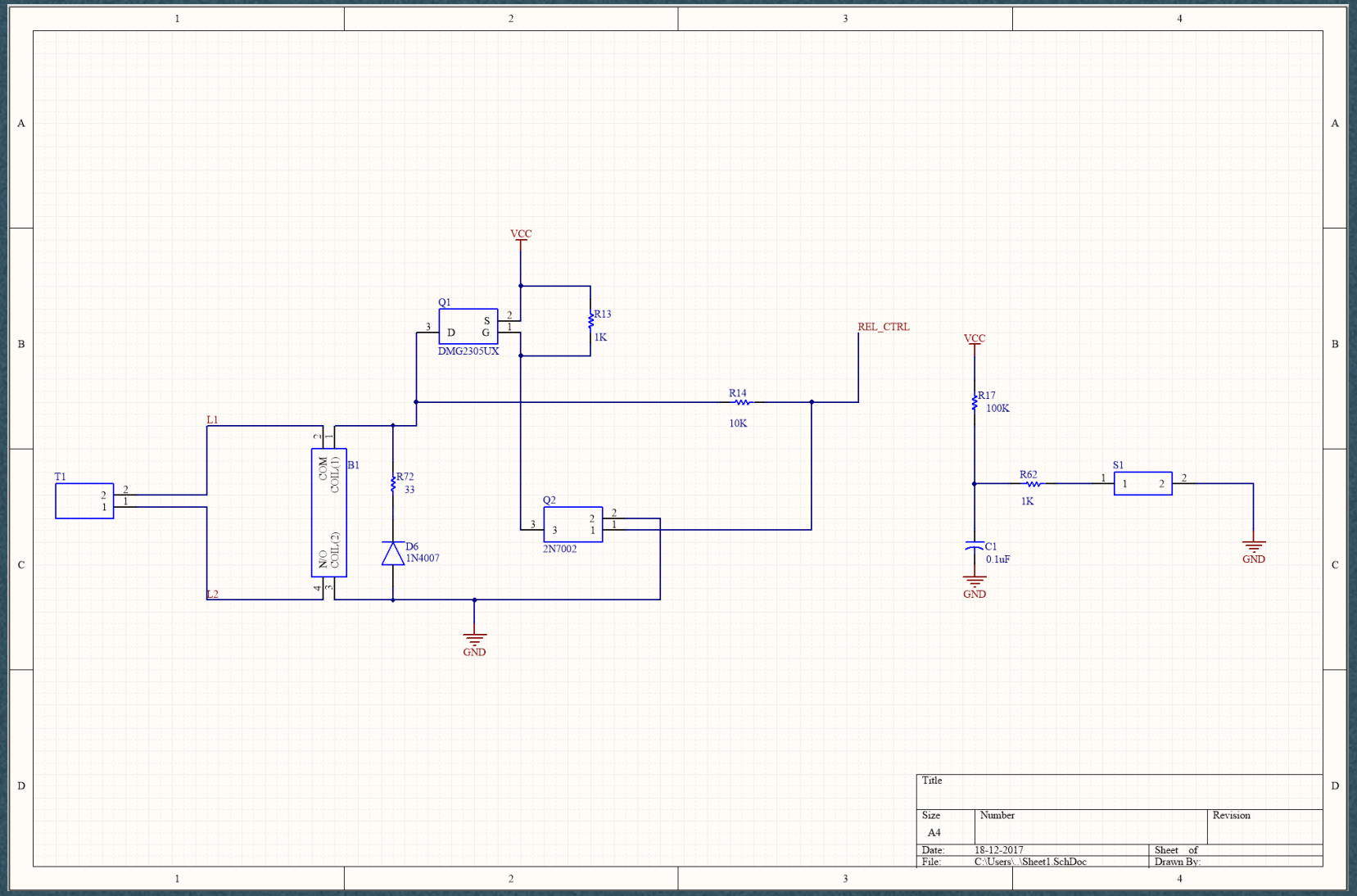
Proof of Work

- CC2538 Module PCB layout



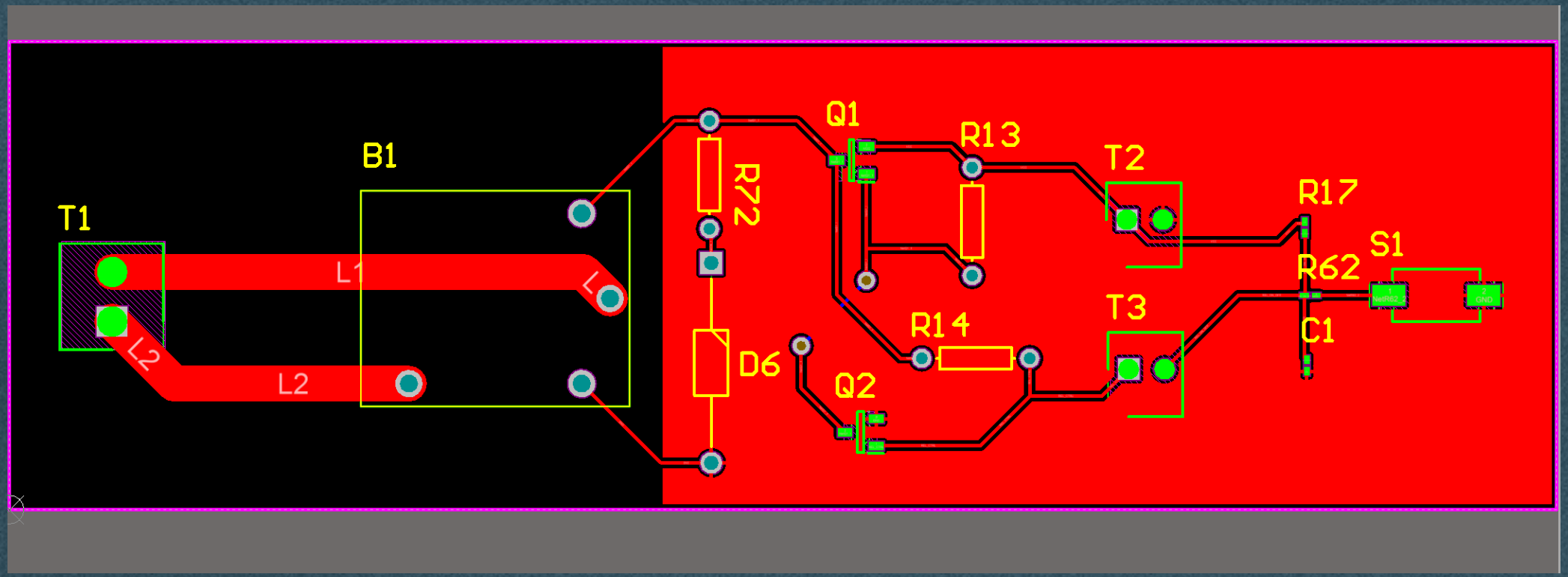
Proof of Work

- Latched Relay Schematic



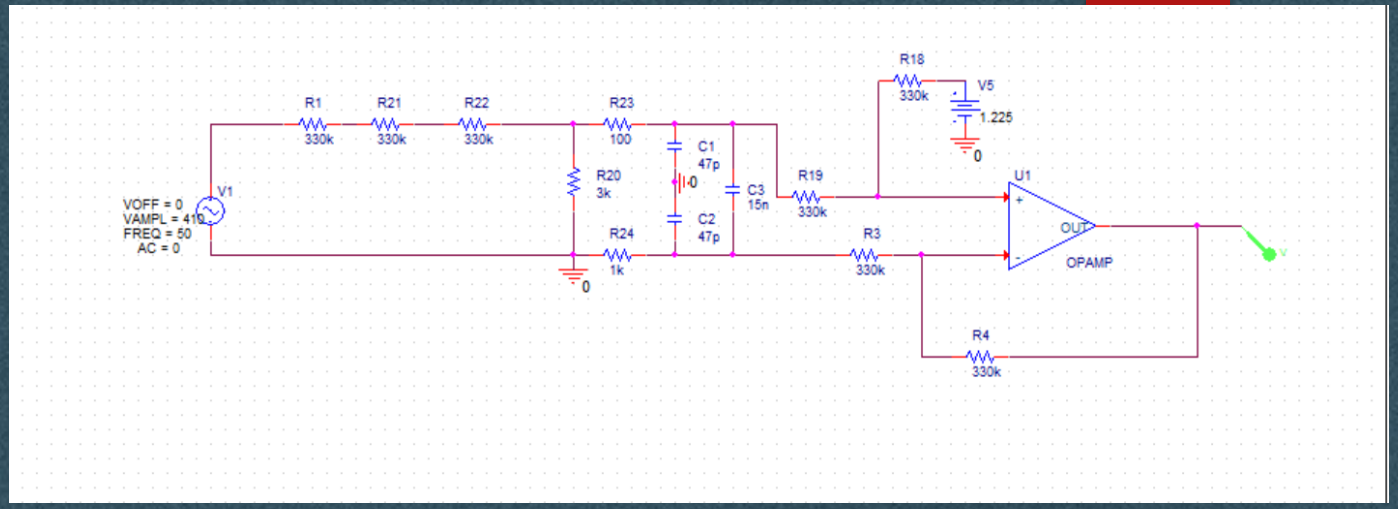
Proof of Work

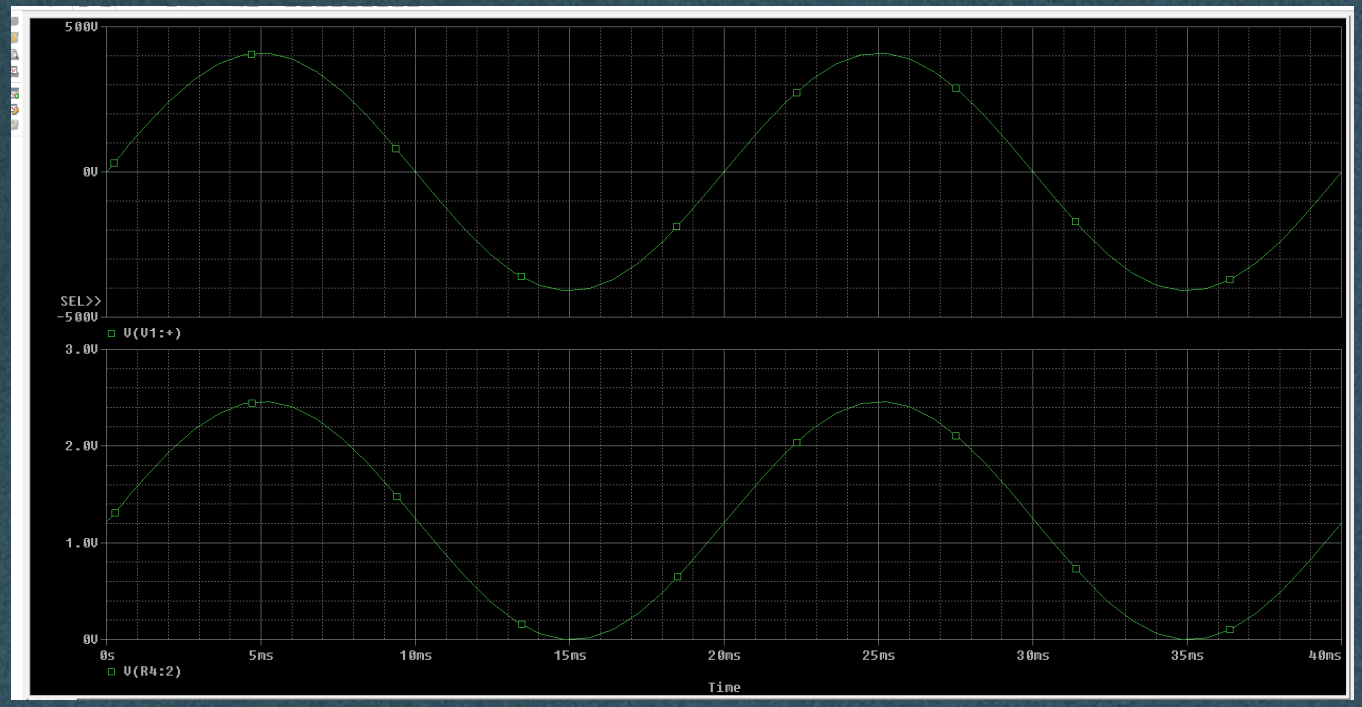
- Latched Relay Layout



Proof of Work

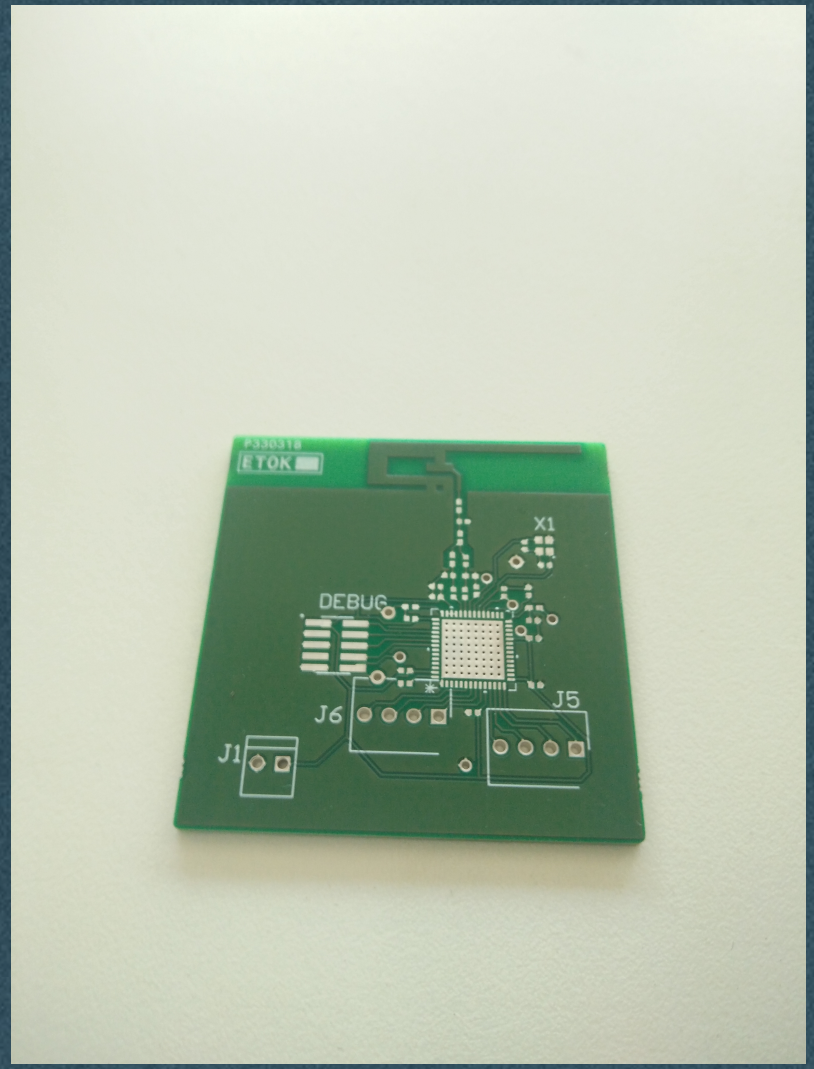
- Simulation for voltage sensing





Proof of Work

- Fabricated PCB module.

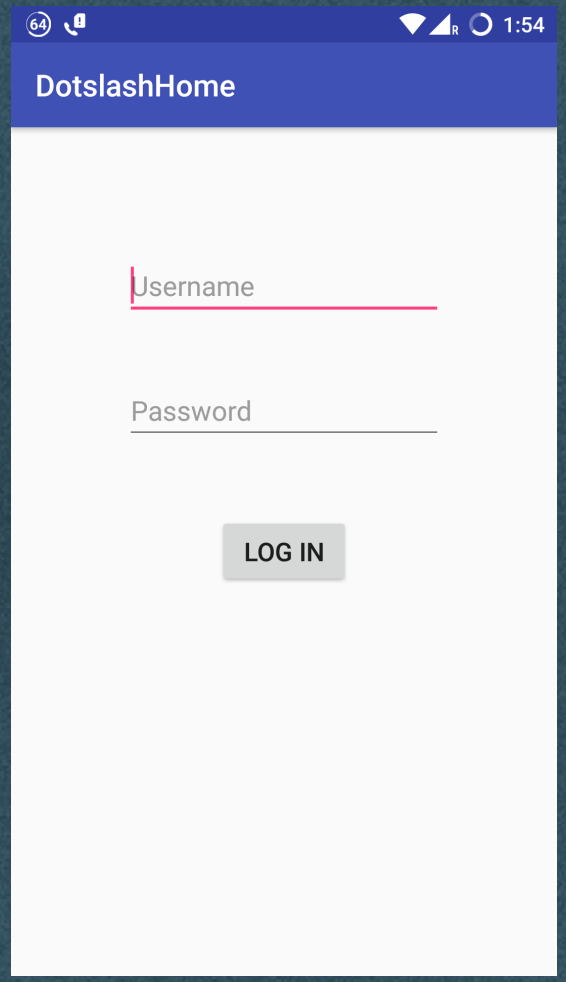


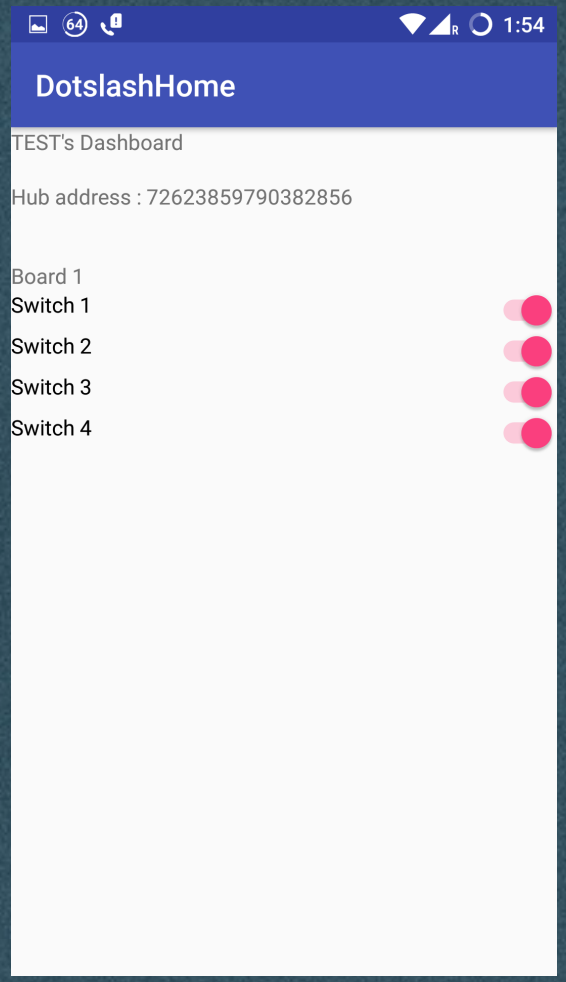
CURRENT PROGRESS (Software)

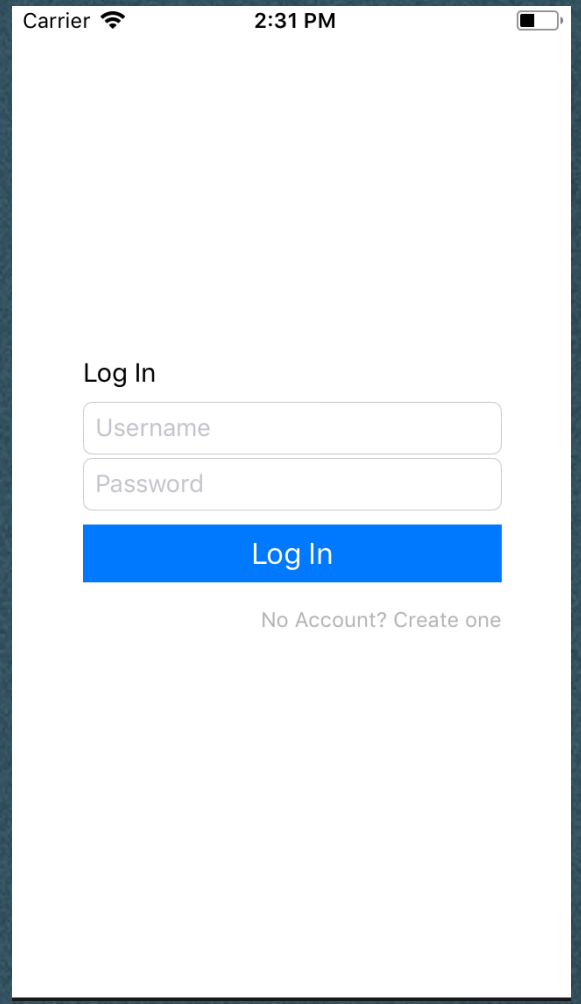
- Developed bare-minimal Android and iOS application
- Working on development of local-server. Developed a configuration server, so that user can connect to the hub's wifi and connect it to the actual internet connected Wi-Fi.

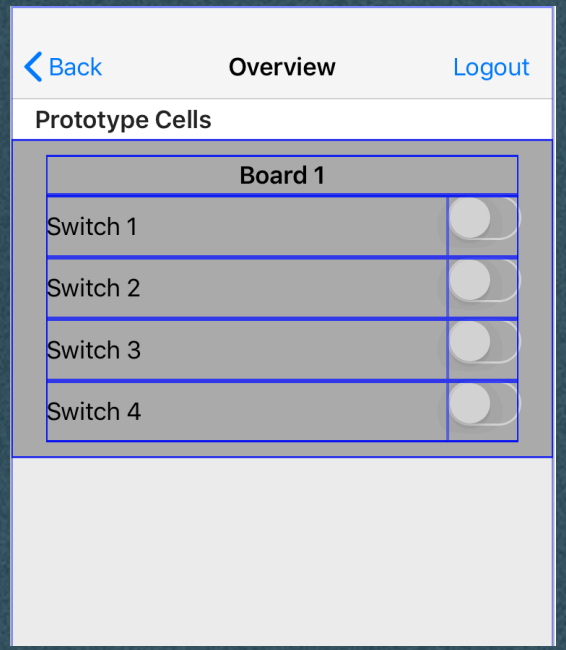
Proof of Work

- Mobile Applications



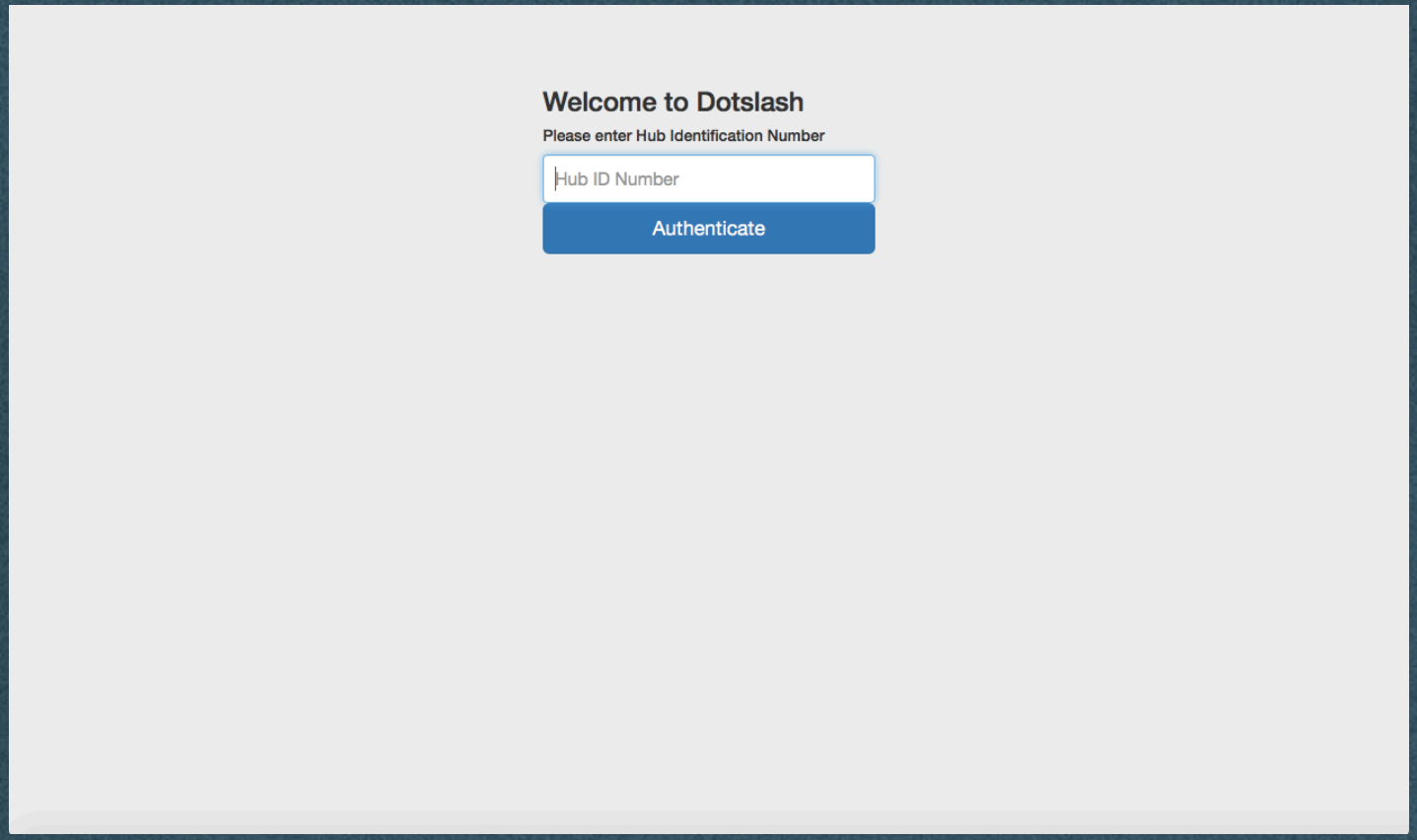






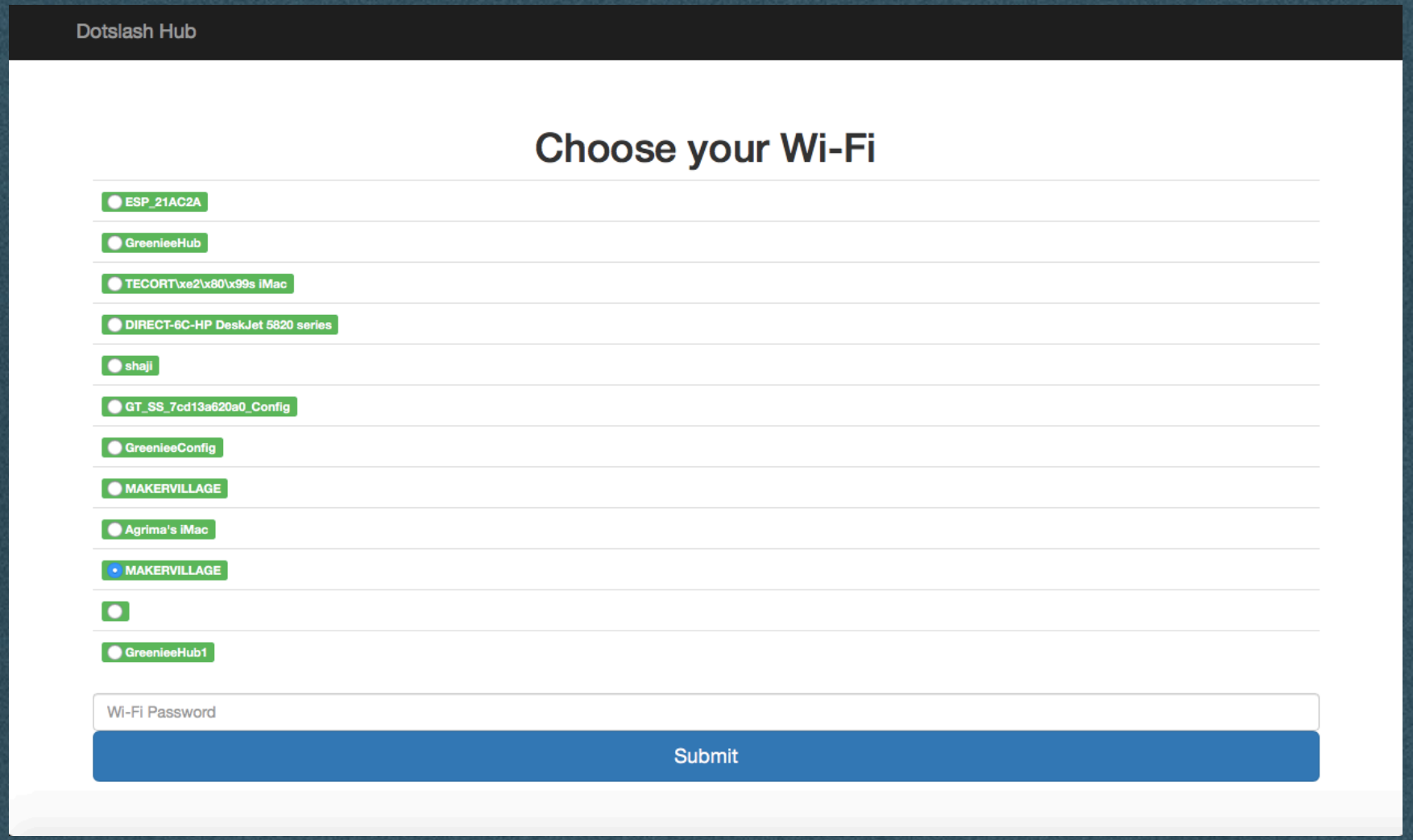
Proof of Work

- Config Server Login



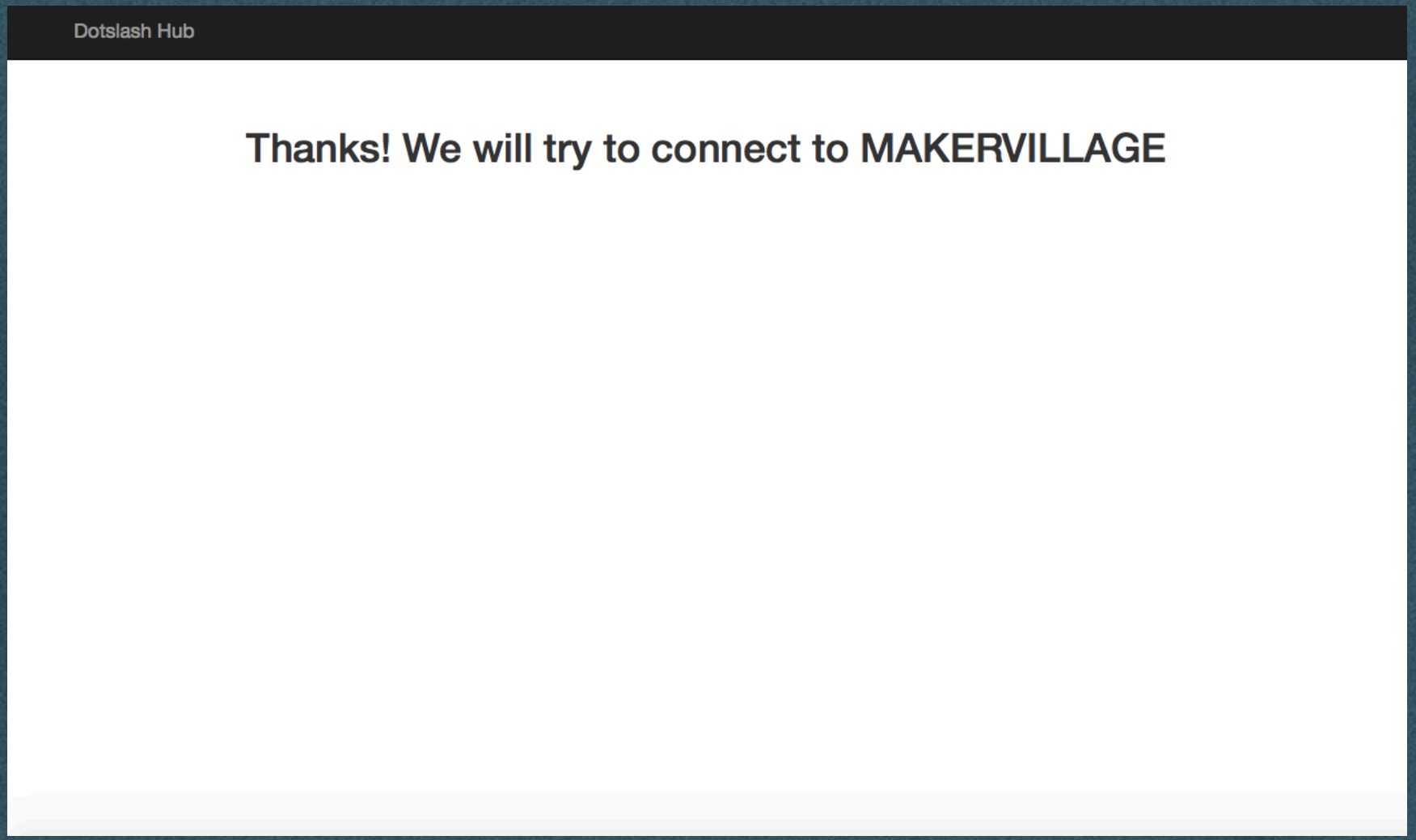
Proof of Work

- Config Server. Select Wi-Fi



Proof of Work

- Config Server Connection



Next Steps

- Solder the components on to the board and verification.
- Complete schematic of voltage and current sensing module , combine it with latched relay circuit, and fabricate.
- Create a switchboard using BT100 SMPS, CC2538 board module and the above module.
- Complete the work on local-server and User interface redesign for apps
- Expected to be completed by March end

THANK YOU.