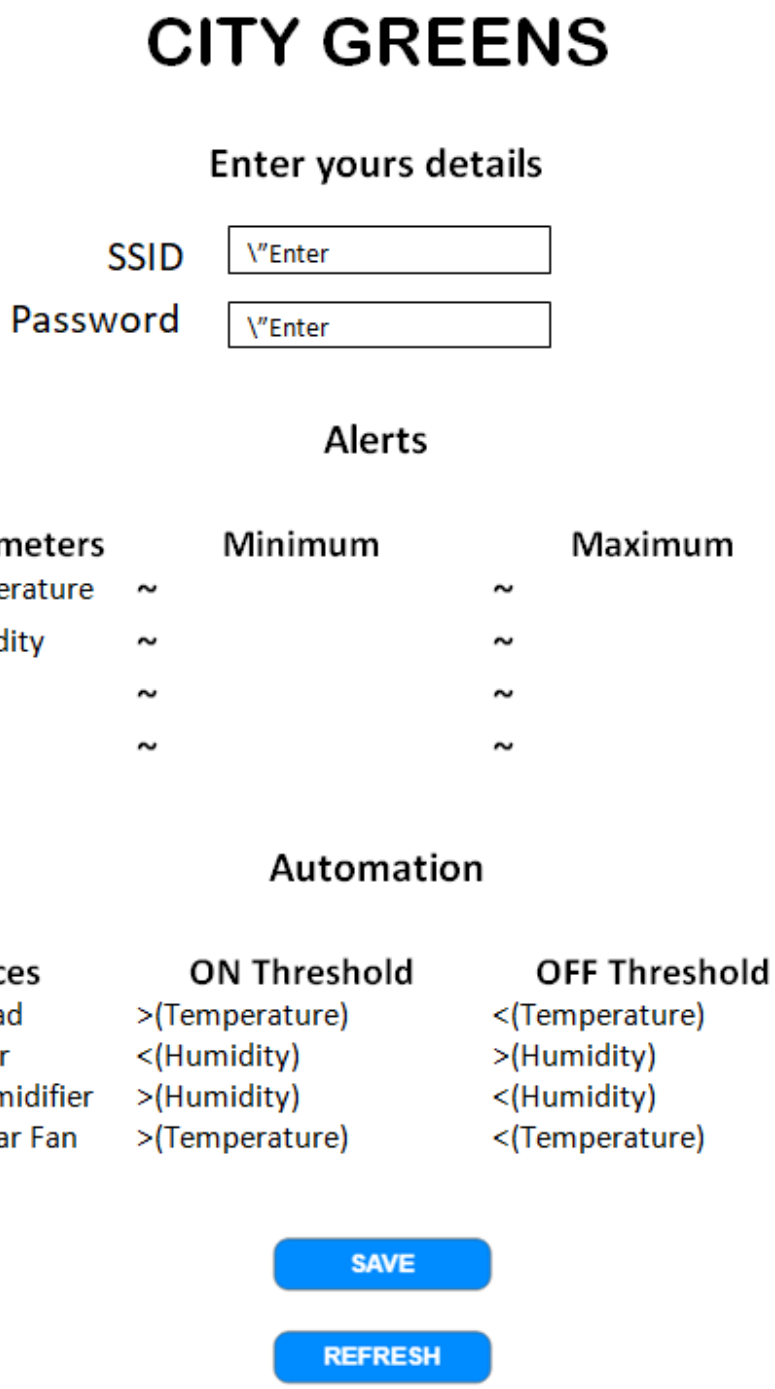
Scope Of Work

Gateway:-P1

It is capable of collecting data from several nodes via the BLE interface. It can store and send collected data to the cloud platform through WiFi. It will also feature a display unit for farm status.

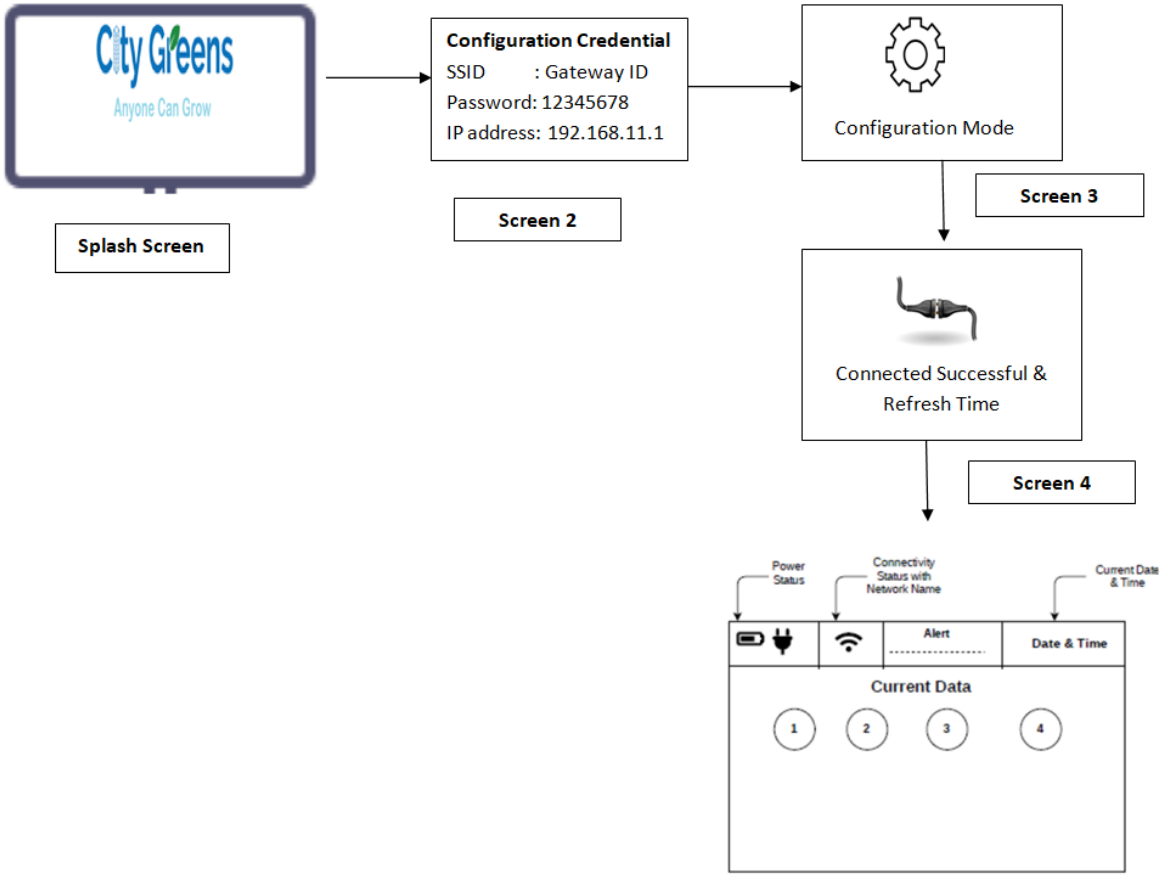
Required Features:

1. Updating Wi-Fi Credentials via a html webpage.
2. The web page design is attached here



3. It save the Wi-Fi credentials & alerts data to its internal memory

4. It will check for OTA firmware updates via GitHub
5. Display Screen will Initialise
6. Scan for BLE nodes, identify our sensor nodes, make a connection with them and collect data via BLE
7. It will receive data from 8 Nodes Via BLE Communication.
8. Display Screen Design is shown below

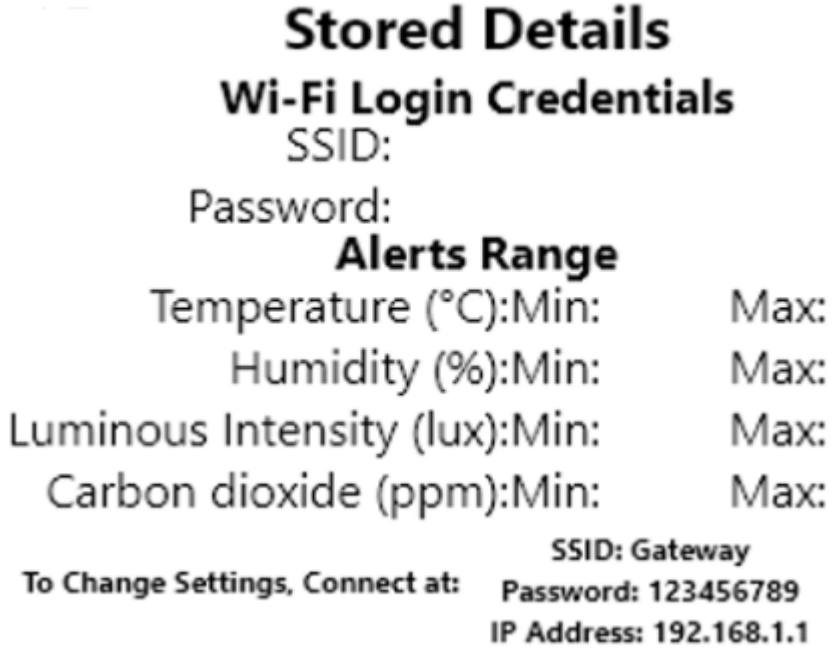


9. It will save/log the data to an SD card in .csv/.txt format.
10. Installation of MQTT software over the server (Digital Ocean Droplet).
11. The device will publish saved data to the cloud via MQTT.
12. It has a Temp./humidity (HTU21D) sensor on the PCB
13. Power Supply has 12V Battery (Li-ion 2500mAh-3s-11.1v-3c-3S1P Protected Battery Pack) with 12V 2A AC Adaptor
14. RTC will be used to update time.
15. There are three Push Buttons used in the gateway
    Reset: it reset the settings of gateway & device will start from its default state;
    Configure button: it will be used as a manual interrupt to firmware for Wi-Fi & Alert Data Updated by User.
    Power : It will be used as a Power On & Off Button for the gateway.
16. One LED will used for showing for Power on & off

Gateway Display Screen Flow

1. Splash Screen

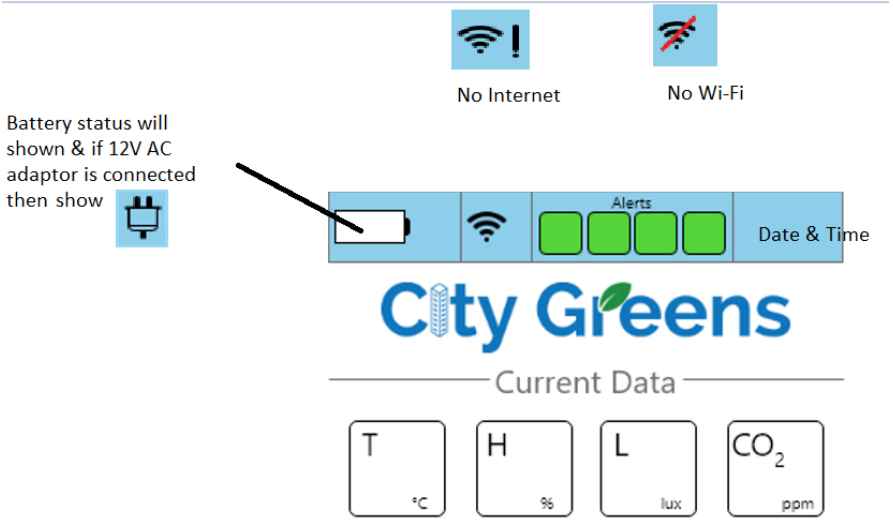
2. When user will push the configure button then display screen will show Configure page



User will open shown ip address 192.168.1.1 in there url then a html page will open & user will fill the login credentials & save alerts value. The saved values shown on screen then the user will again push the configure button.firmware start to connect with given Wi-Fi credential.

3. After connecting with wi-fi firmware will start to search for an OTA firmware update. If any firmware update is there then firmware will start updating & display will show below screen.

4. After OTA search main screen will show on display



5. Search for available BLE Device ,Connect with them & receive data, when all the data has been collected from BLE Node then screen will update with following data.
   - ❖ wifi_status true -> WiFi Connected, false -> WiFi Not Connected
   - ❖ internet_status true -> Internet Connected, false -> Internet Not Connected
   - ❖ temp_alert true -> Average Temperature in Range, false -> Average Temperature not in Range
   - ❖ humidity_alert true -> Average Humidity in Range, false -> Average Humidity not in Range
   - ❖ lux_alert true -> Average Lux in Range, false -> Average Lux not in Range
   - ❖ co2_alert true -> Average CO2 in Range, false -> Average CO2 not in Range
   - ❖ Date in format: DD/MM/YY
   - ❖ Time in format: HH:MM
   - ❖ average_temp Average Temperature from all nodes and onboard sensor
   - ❖ average_humidity Average Humidity from all nodes and onboard sensor
   - ❖ average_lux Average Lux from all nodes and onboard sensor
   - ❖ average_co2 Average CO2 from all nodes and onboard sensor
6. Screen will update in every 5 min