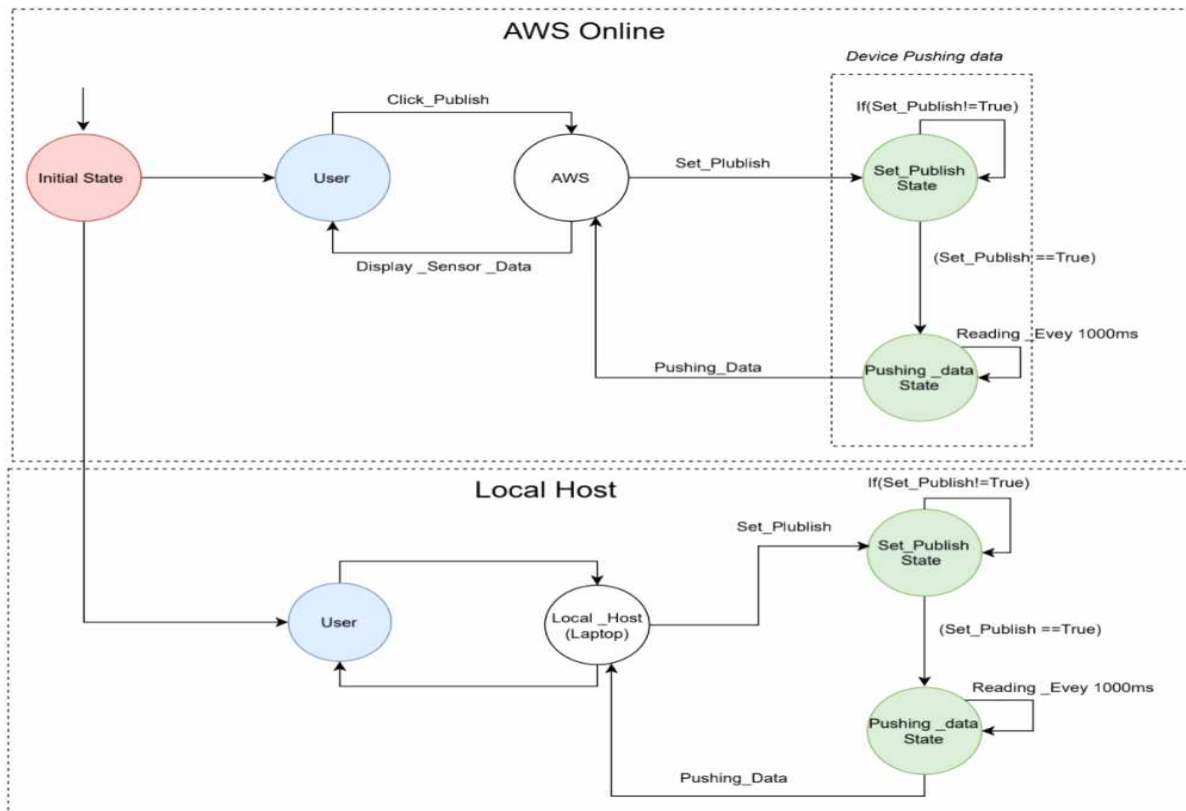
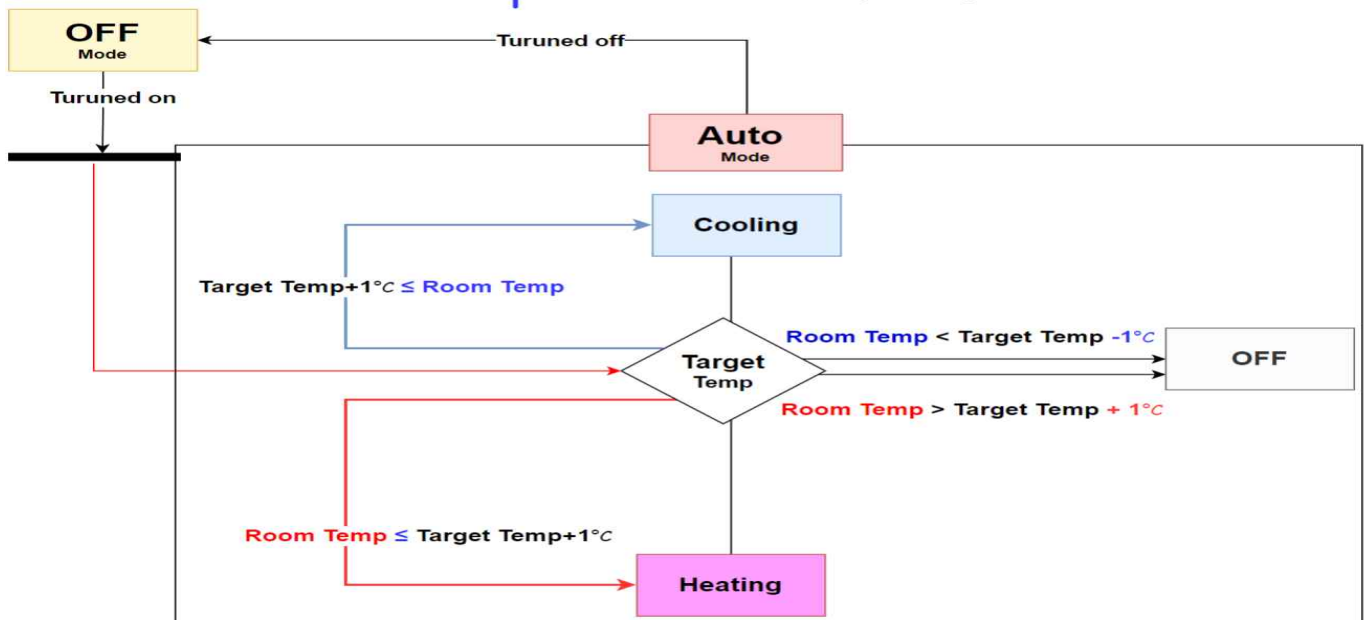


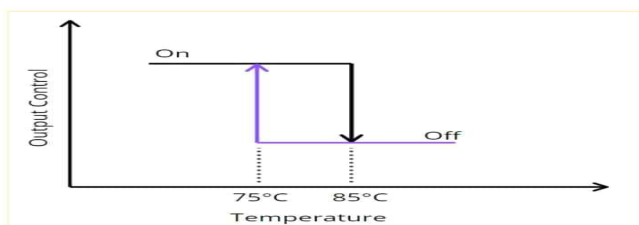
Finite State Machine of Smart-Home



power state machine



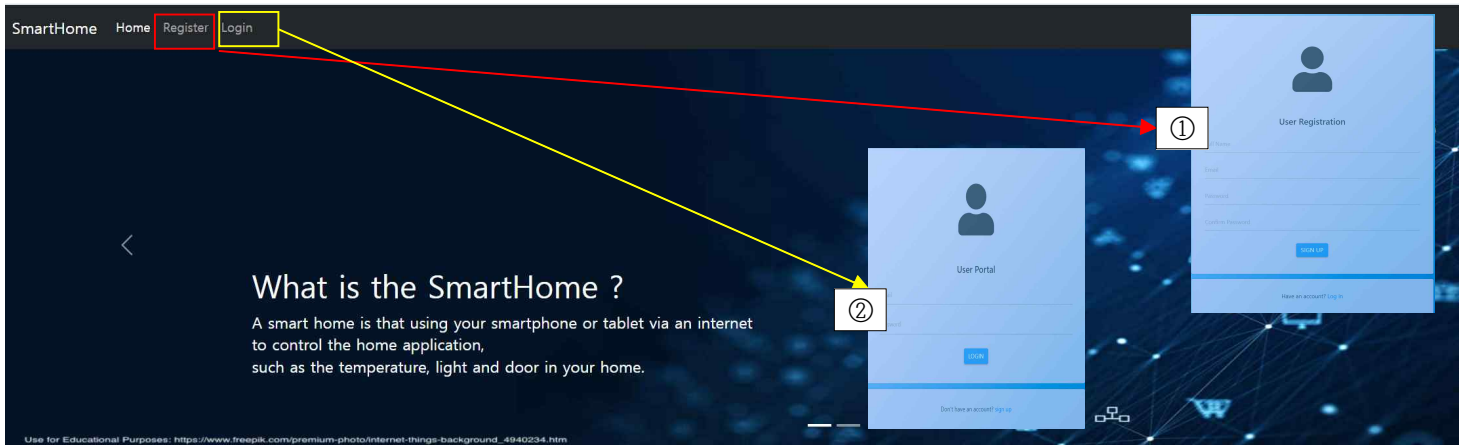
- Room temp : Sensing temperature, Target temp : Setting temperature.
- **Hysteresis of 1°C**



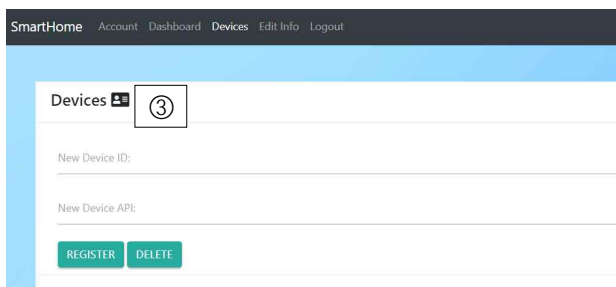
An example of temperature hysteresis with a set point of 80°C.

In a temperature controller, temperature hysteresis is defined by a minimum and maximum temperature value, where the heat will be turned on and off respectively. For example, if the Room's temperature is to be maintained at 80°C with a hysteresis of 5°C, the cooling fan will activate when the temperature reaches 85°C and turn off when the temperature drops to 75°C.

Move to “https://ec2-54-151-67-43.us-west-1.compute.amazonaws.com/”

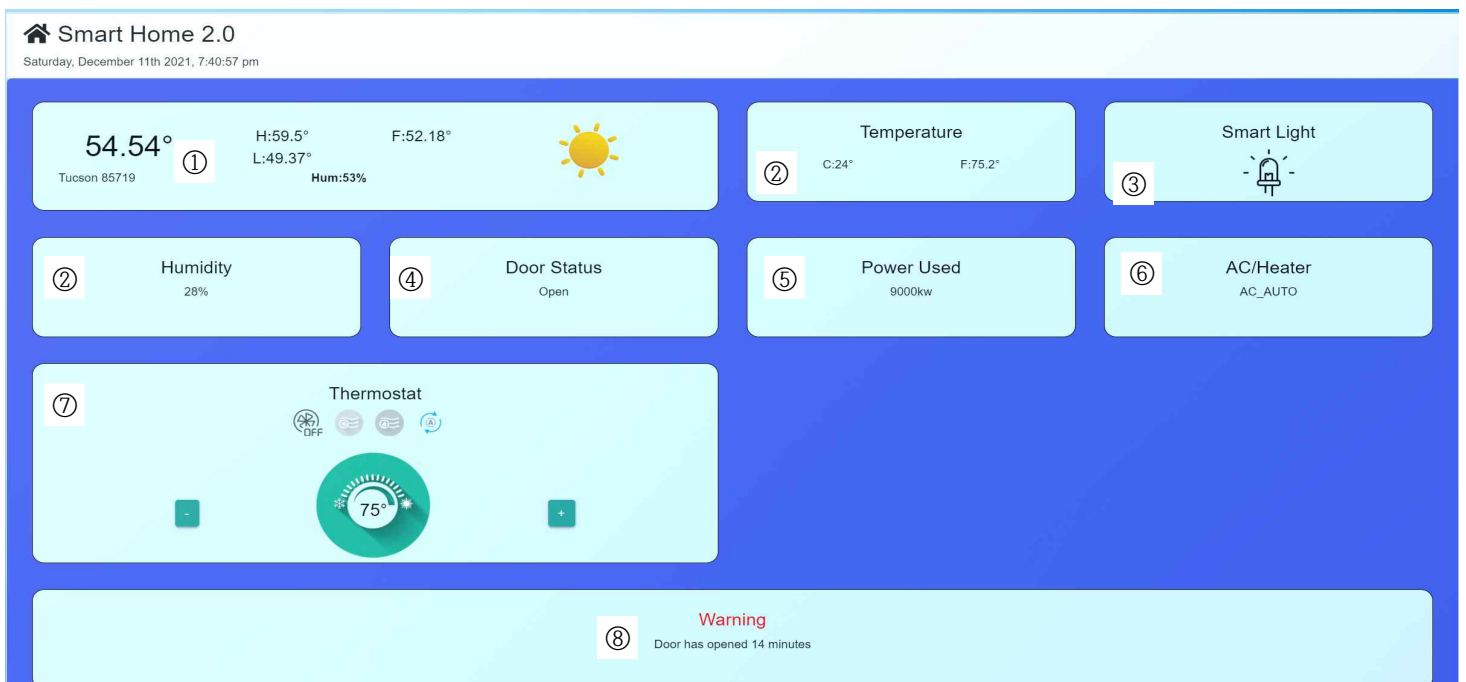


- ① First, sign up to control a smart-home
- ② Move to login



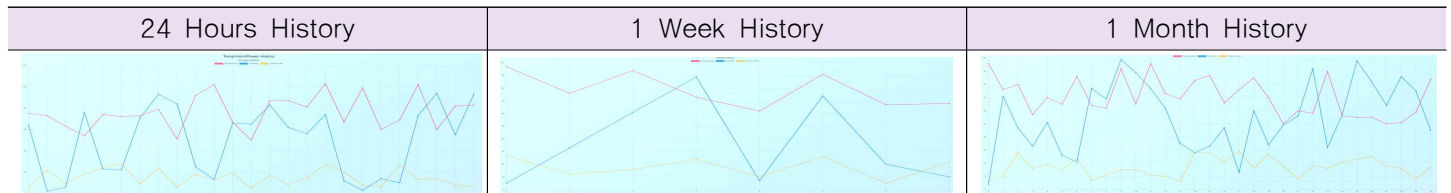
- ③ Register you device on AWS.
 - Device ID, Device API(Token number)For example
 - Device ID : 3f0020000d47303338353831
 - Device API : 2dc7b02d63a975b548f1b3d506d3061b7ed5c9d0

- ④ You can read sensor-data and control IoT sensor(Smart-light, Thermostat)
 - Control & Monitoring



NO	Description
①	Get the weather by the third party API and display the information(based on zipcode)
②	Read the sensor data(temperature and humidity) and display the sensing data
③	Control smart light such as turn on/off
④	Monitor the door status(ON/OFF) that be estimated, based on the value sensing by photoresistor
⑤	Display the electric usage(such as air-conditioner and heater) in the smart-home.
⑥	Display the heatig & air-condtioning's working status(off/cool/heat)
⑦	Control the thermostat such as setting the target temperature and display the auto mode/off, off/cool/heat status.
⑧	Alerts door status warning message

– History : Temperature & humidity, Power consumption



– Online Communication

▼ Online Communication

ID:3f0020000d47303338353831 ①

PING INSTRUCTION

Please select variable to read ②

Humidity

READ READ ALL

Online Publish

OFF ON ③

Online status: Device is Offline

Online status: Device published successful

Please select your Online Device ID:3f0020000d47303338353831

Humidity

Humidity

Temperature_Celcius

Temperature_Farenheit

door_analogvalue

smart_light_analogvalue

NO	Description
①	Ping test for the selected devices
②	Read selected variable to read sensor-data(such as temperature, door_analog_value..)
③	Publish function(for a registered device to be published from offline)

– Smart Light Control Panel

▼ Smart Light Control Panel

Manual Bed Wake ①

Brightness: ②

R: 10

G: 38 ③

B: 0

Auto Bed Wake

Brightness: 15

R: 62

G: 97

B: 99

NO	Description
①	Set manual/auto, bedtime, wake-up
②	Adjust the smart-bulb's brightness(dimming control)
③	Adjust color(R, G, B)

Sensor setting

Sensor min: 73 ①

Sensor max: 1835

Sensor Val: 2550

Present brightness: ②

Sensor min: 500

Sensor max: 1835

Sensor Val: 952

Present brightness: 77

NO	Description
①	Adjust sensor min & max
②	Display current value and current brightness

– Adjust the speed of LED blinking(D3)

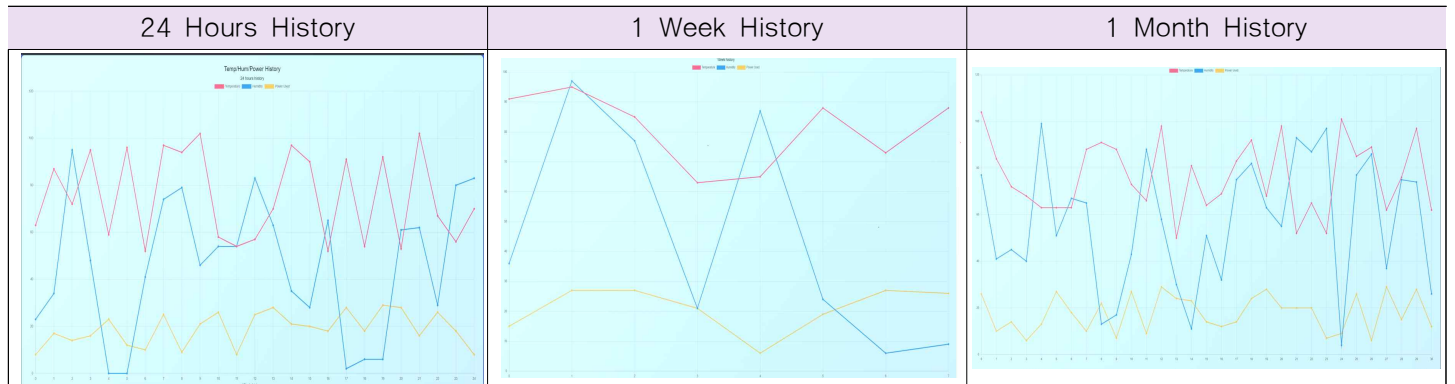
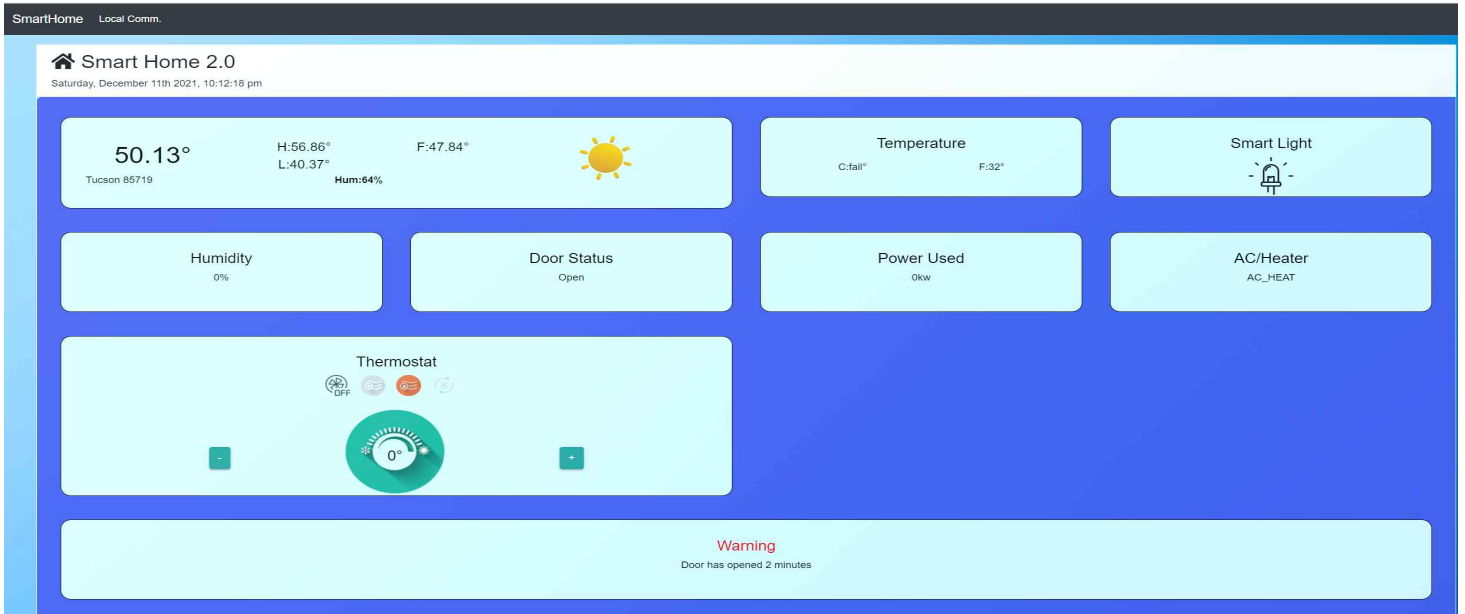


– Display cmd status and received data.



● Localhost & mobile version have the same functions(such as controlling smart-bulb, reading data ..)

■ Localhost version



Local Serial Communication

Local Serial Communication
COM3
DISCONNECT

COM status:
Serial monitor opened successfully (Data rate: 9600)

Smart Light Control Panel

Auto **Red** **Blue** **White**

Brightness:

R:

G:

B:

Sensor setting

Sensor min:

Sensor max:

Sensor Val: 2627
Present brightness:

LED (D3) blinking

HZ:

CMD Status Data Output

```
{
  "cmd": "write",
  "msg": "message written",
  "success": true
}
```

RD Data Output

```
{
  "cmd": "write",
  "msg": "message written",
  "success": true
}
```

■ Mobile version

