Smarthomd

Hardware Connection

Using WiringPi number

LED pins

Pin 7, 0, 2, 3, 25.

SPI pins

MOSI MISO SCLK 3V3

SPI Module:

MCP3208 - 8Channel Analog Digital Converter.

I2C pins

SDA SCL

I2C Module:

BMP180 - Temperature and Pressure Sensor.

LCD1602 - 2 Line 16 Characters LCD Display.

L293D pins

Pin 21(LEFT), 22(RIGHT), 23(ENABLE)

Button pins

Pin 6(UP), 5(DOWN), 26(LEFT), 4(RIGHT)

Alarm Light

Pin 24

Mecury Switcher

Pin 27

DHT11

Pin 28

Motion Detector

Pin 29

Software Setting

1. How to build. Command `make` will take over everything. Just go to the folder "src" and type: `make`
2. How to run. Run: `sudo ./bin/smarthomed` It will start a web server listening on `<yourIP>:80`. And you can interact with the screen display to check value.
3. Send your Siri or Google Assistant request to following URL and it will give you the response.

> "LED ON": GET "http:// `<Your IP>` /switch/on?led= `<LED Number>` ",
>
> Response: 200 OK
>
> "LED OFF": GET "http:// `<Your IP>` /switch/off?led= `<LED Number>` ",
>
> Response: 200 OK
>
> "LED STATUS": GET "http:// `<Your IP>` /status?led= `<LED Number>` ",
>
> Response: 200 OK, data: `0` off, `1` on.
>
> "BMP180": GET "http:// `<Your IP>` /temp/status",
>
> Response: 200 OK, data: `{"temperature": 24.5, "humidity": 0%}`
>
> "DHT11": GET "http:// `<Your IP>` /temp_humi/status"
>
> Response: 200 OK, data: `{"temperature": 21.5, "humidity": 30%}`

4. How to reuse this module. This project come with the "Doxyfile", which allow you generate document using doxygen. With the help of this document, you will know how to use this module. So, you can reuse the code elsewhere. See more about doxygen on: http://www.stack.nl/~dimitri/doxygen/

5. Demo Video

   ToDo

6. How to contact. email:Xiangyu.Guo@asu.edu