



IoT Smart Farm using Open-Platform WiMaRC System

Wireless Sensor Network for
Management and
remote
Control

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Design Concept



- High Reliability(7/24)

Handshake,
Load Balance

- OTA (over the air) update

Online buffer

- Low Investment Cost
(from 30-100 US dollar)

Open source
Hardware &
Software

- Low Maintenance (once
per year)

- Low Operation Cost (less
than 10 US dollar/year)

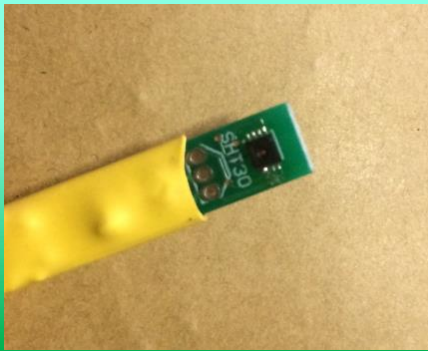
Low online traffic

- Self development

Open source
software

Sensors for Agriculture

- Temp & Humid Sensor
- Soil Moisture Sensor
- Light Intensity Sensor
- Pressure Sensor
- CO2 Gas Sensor
- Conductivity Sensor
- pH Sensor



Sensor Network System: Gateway

Sensors
Analog
Output :
0-5V

Sensors
Analog
Output :
4-20mA

Sensors
Digital
output



Data
Acquisition
Board

RF receiver
LORA
ARDUINO

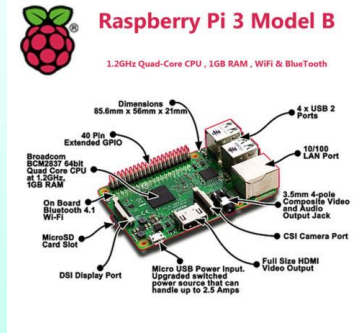
Working Period: always

RS232

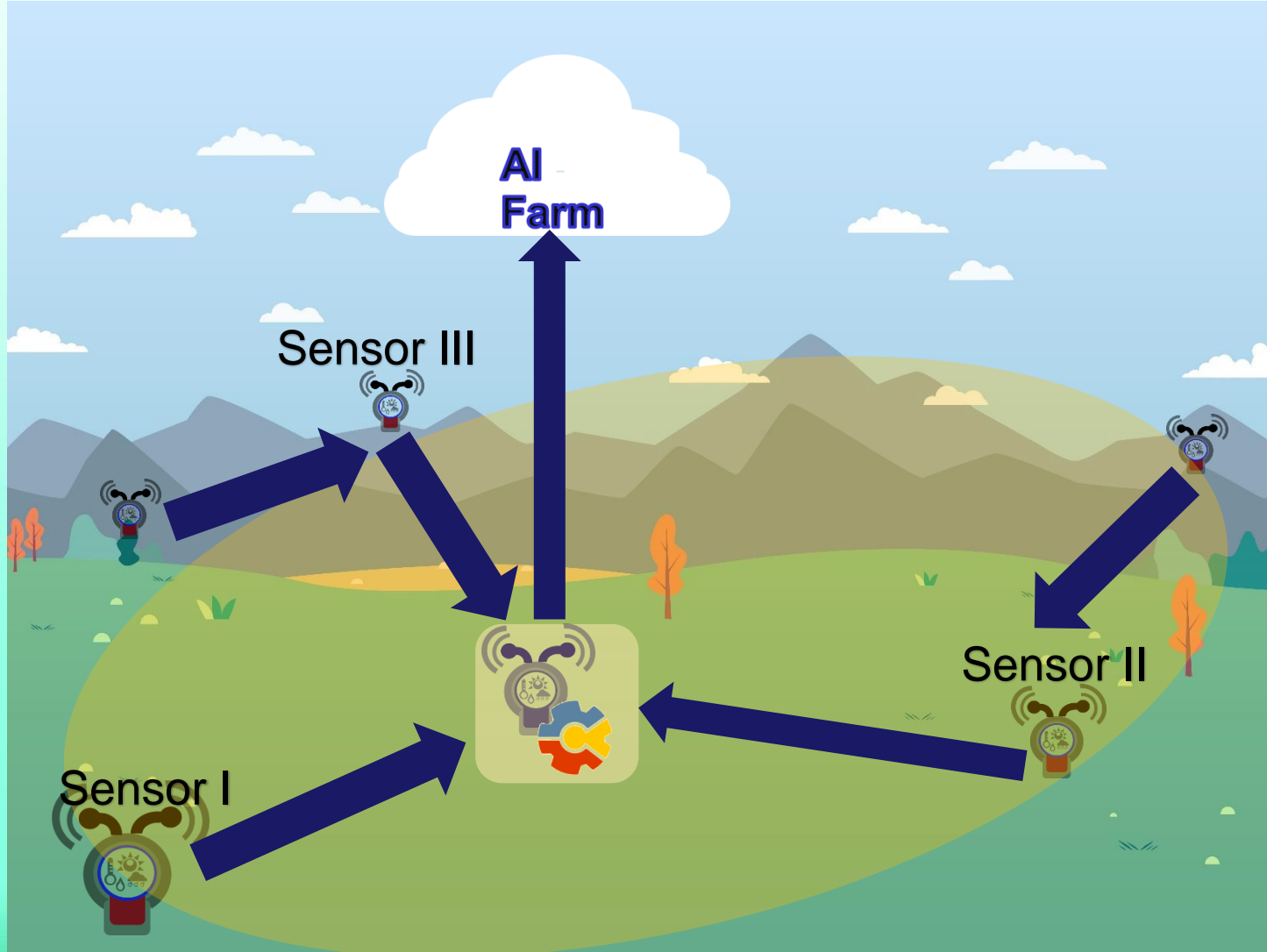
Singleboard
Computer
Raspberry Pi

10 or 15 min.

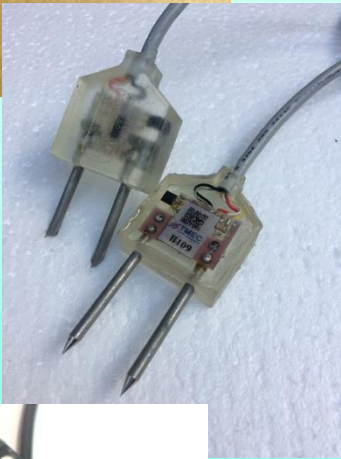
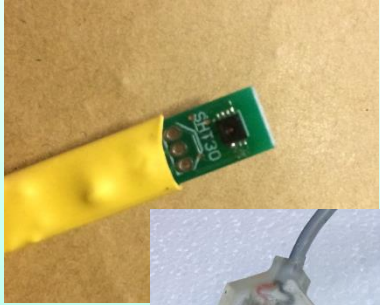
Cloud
Server



Wireless Sensor Network in open Field



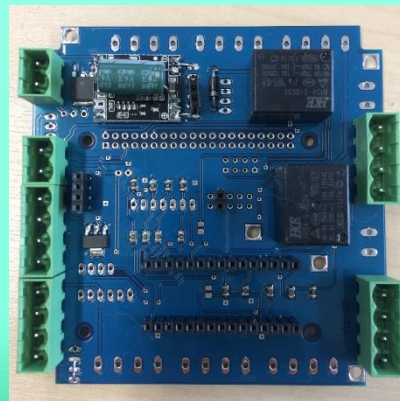
Master Node



Up to 8 sensors



RF module



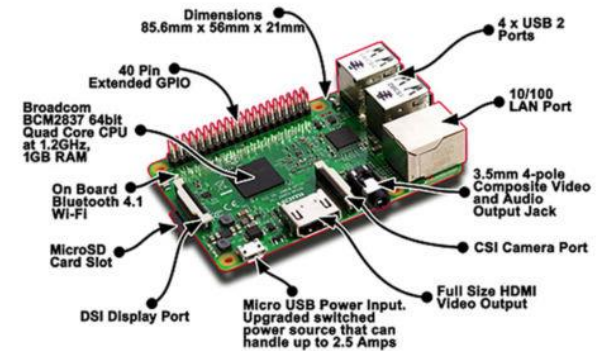
-LoRa module

Gateway



Raspberry Pi 3 Model B

1.2GHz Quad-Core CPU , 1GB RAM , WiFi & Bluetooth



Raspberry Pi

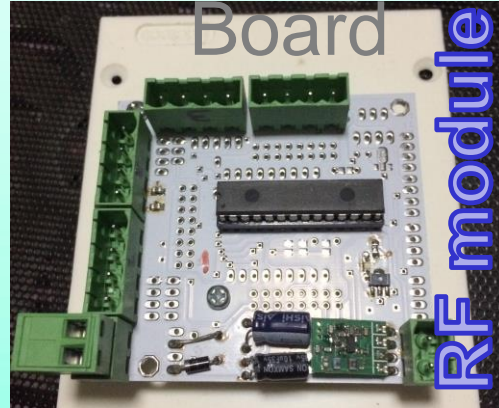
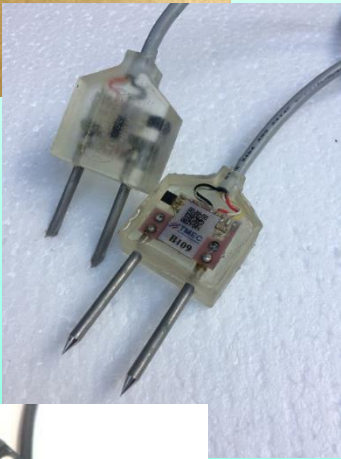
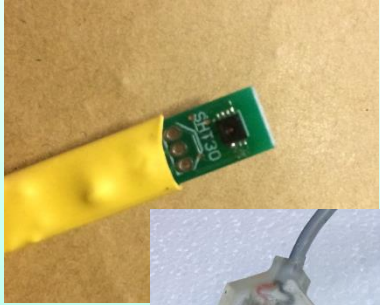
- NETPIE
- Local Database
- FTP



Client Node

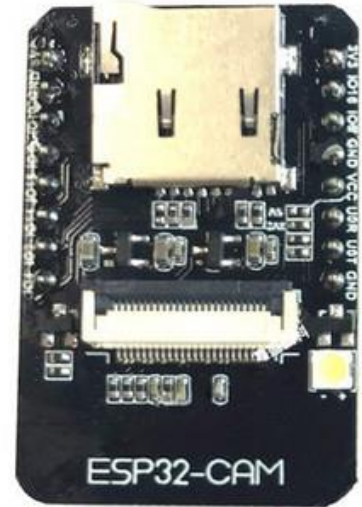


Data
Acquisition
Board



Gateway/option

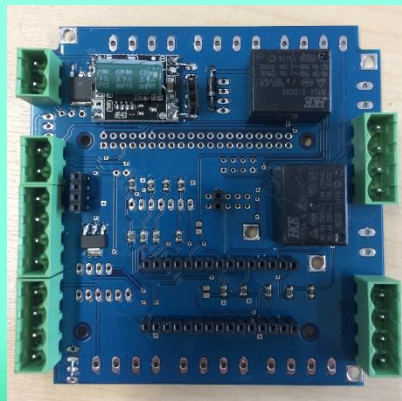
ESP32-CAM



Store NO.4399055



WIFI +OV2640 2MP



-LoRa module



Up to 8 sensors

MaejoLORA



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Master Node Open Field Installation



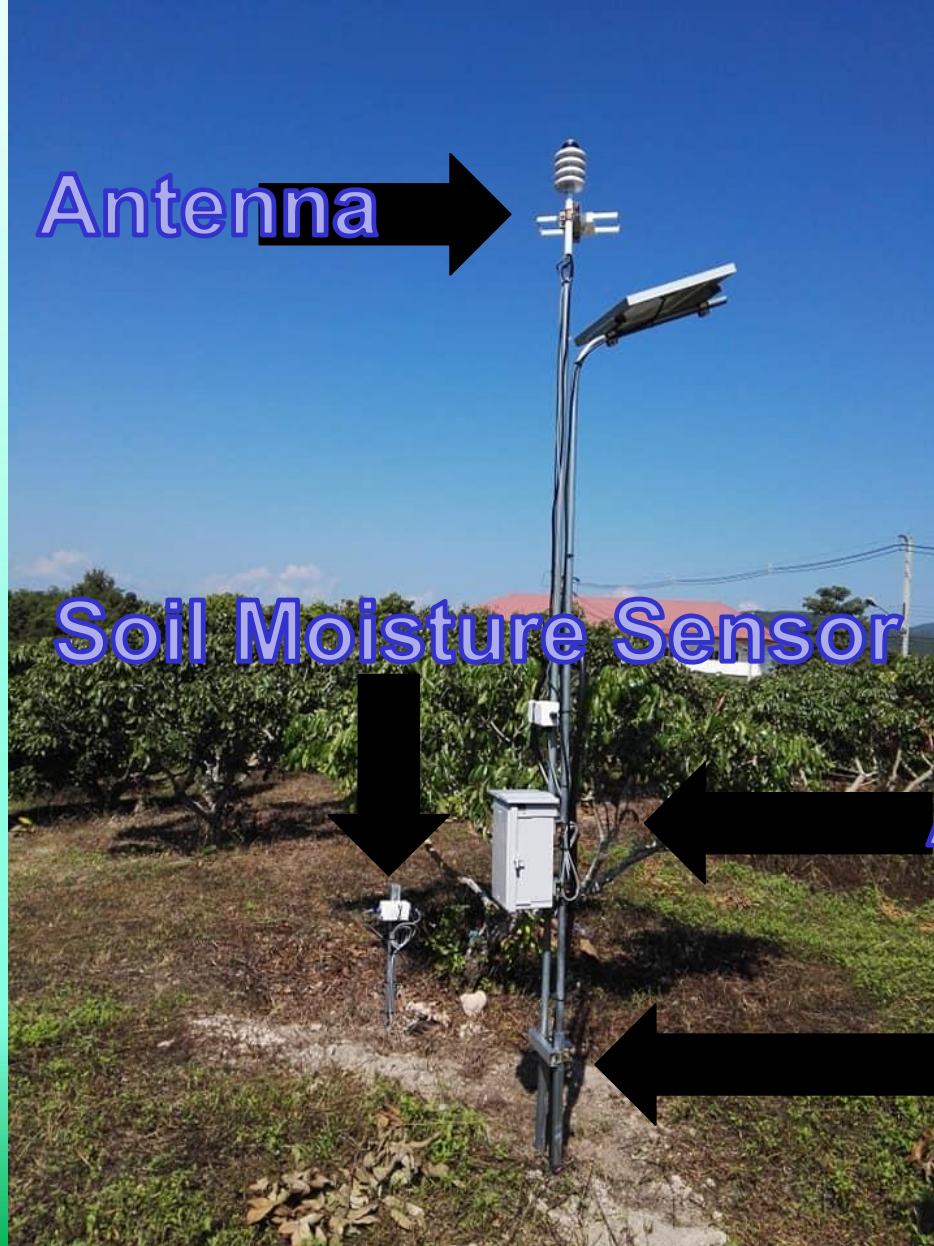
Sensors

Webcam

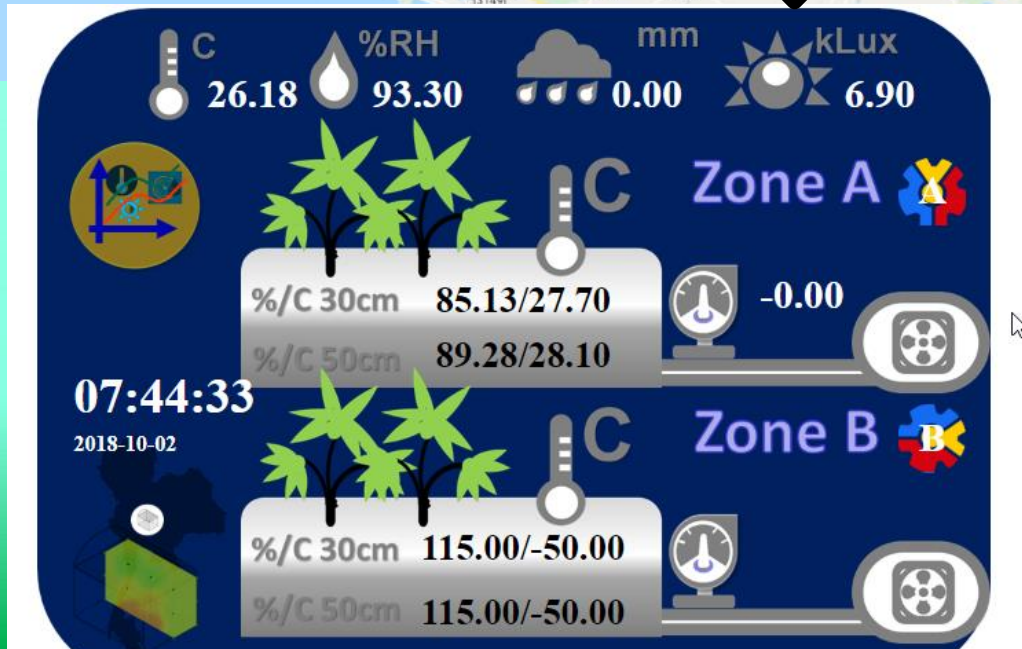
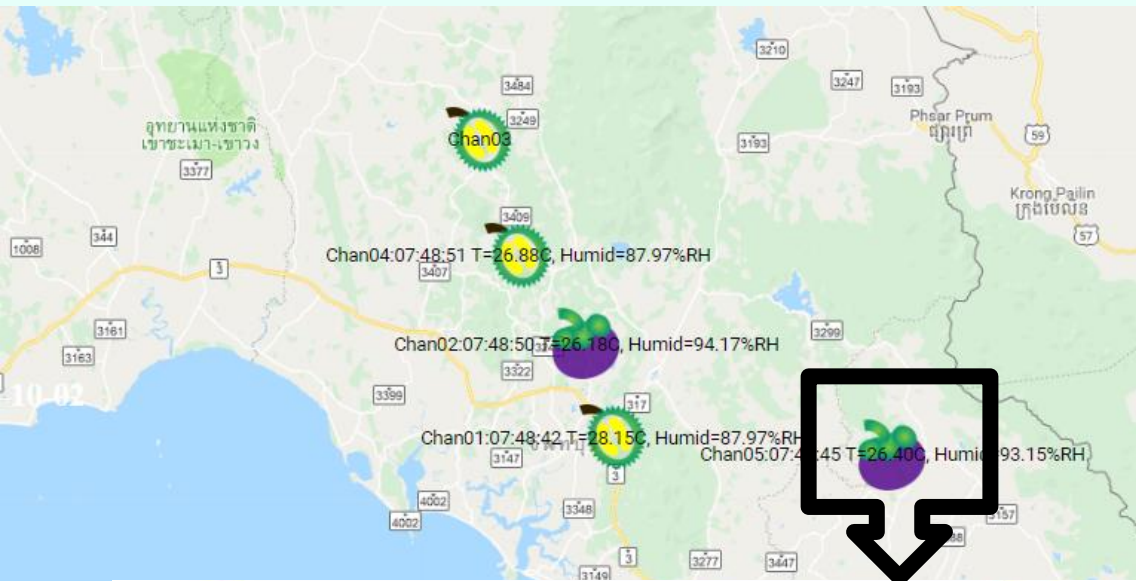
Arduino Sensor Node

Support

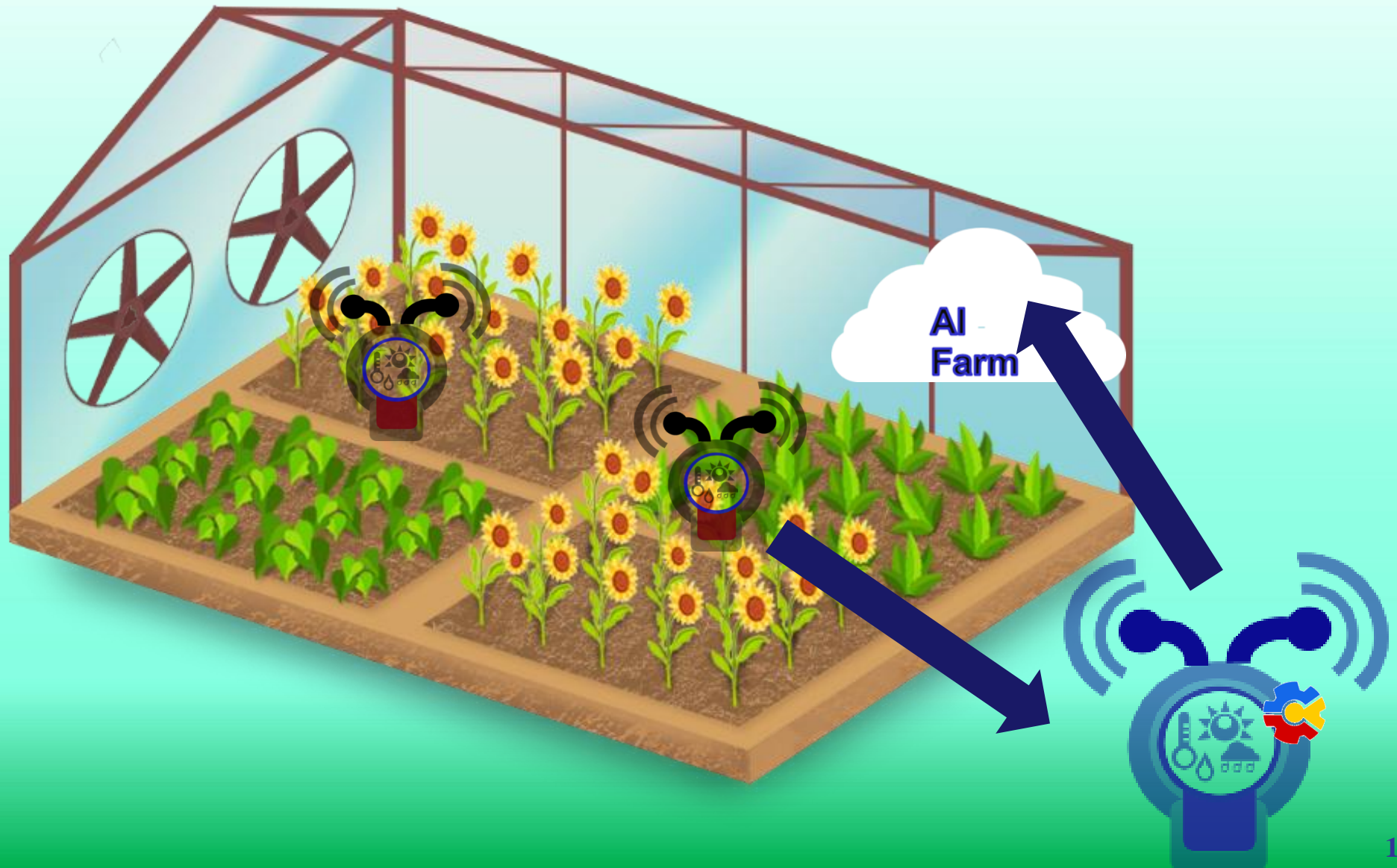
Client Node Open Field Installation



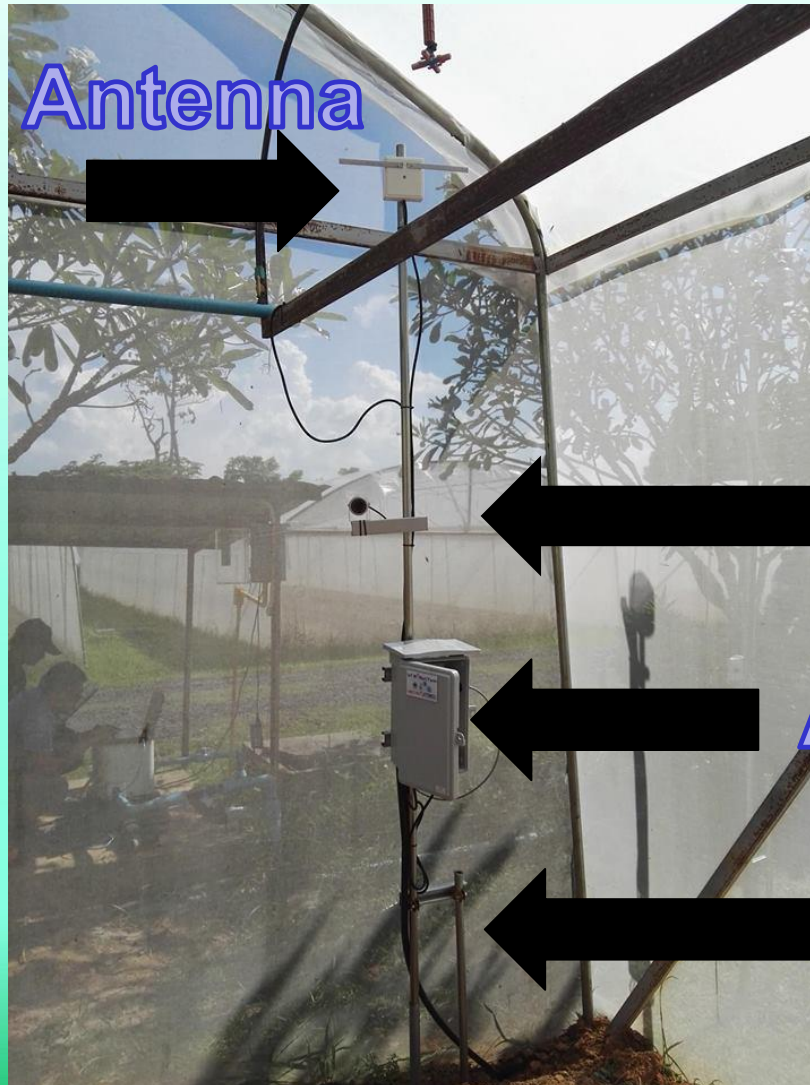
Open Field System



Wireless Sensor Network in Greenhouse



Master Node Greenhouse Installation



Antenna

Webcam

Arduino Sensor Node

Support

Client Node Greenhouse Installation



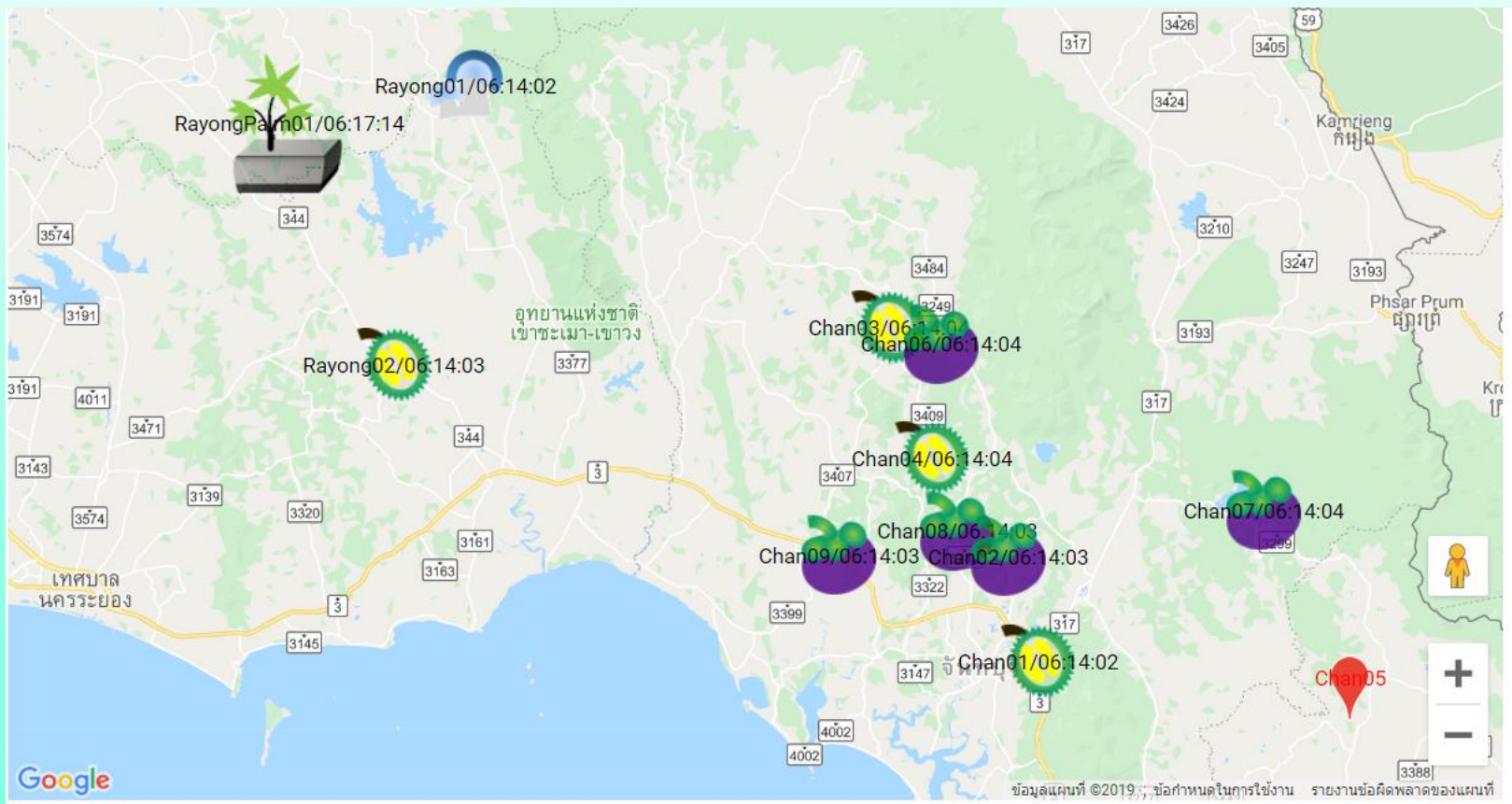
Sensor

Power Supply

Sensor

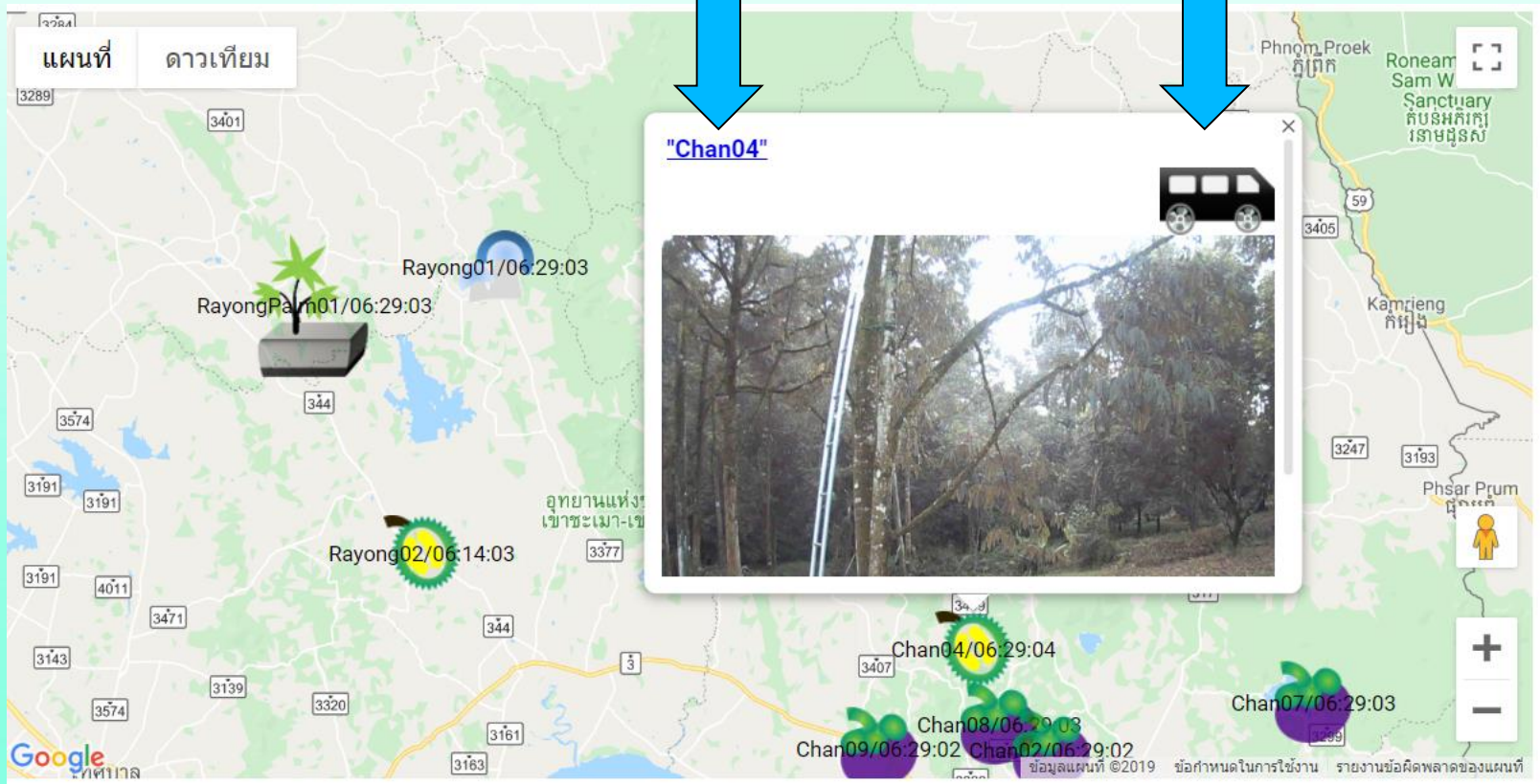
Arduino Sensor Node

Support



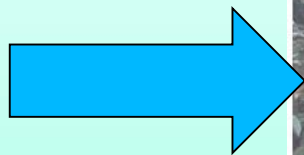
<http://203.150.37.159/YSF/NETPIE>

ข้อมูล เส้นทางไป



<http://203.150.37.159/YSF/NETPIE>

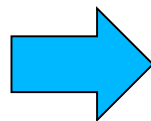
ภาพจากสวน



ข้อมูลย่อยหลัง


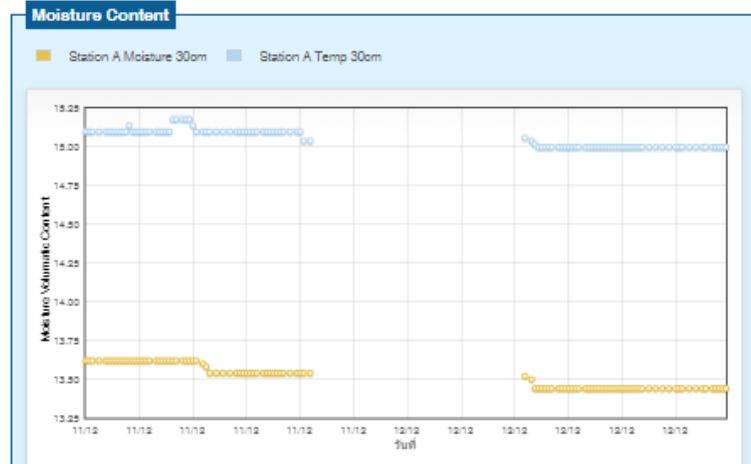


สภาวะแวดล้อมในสวน

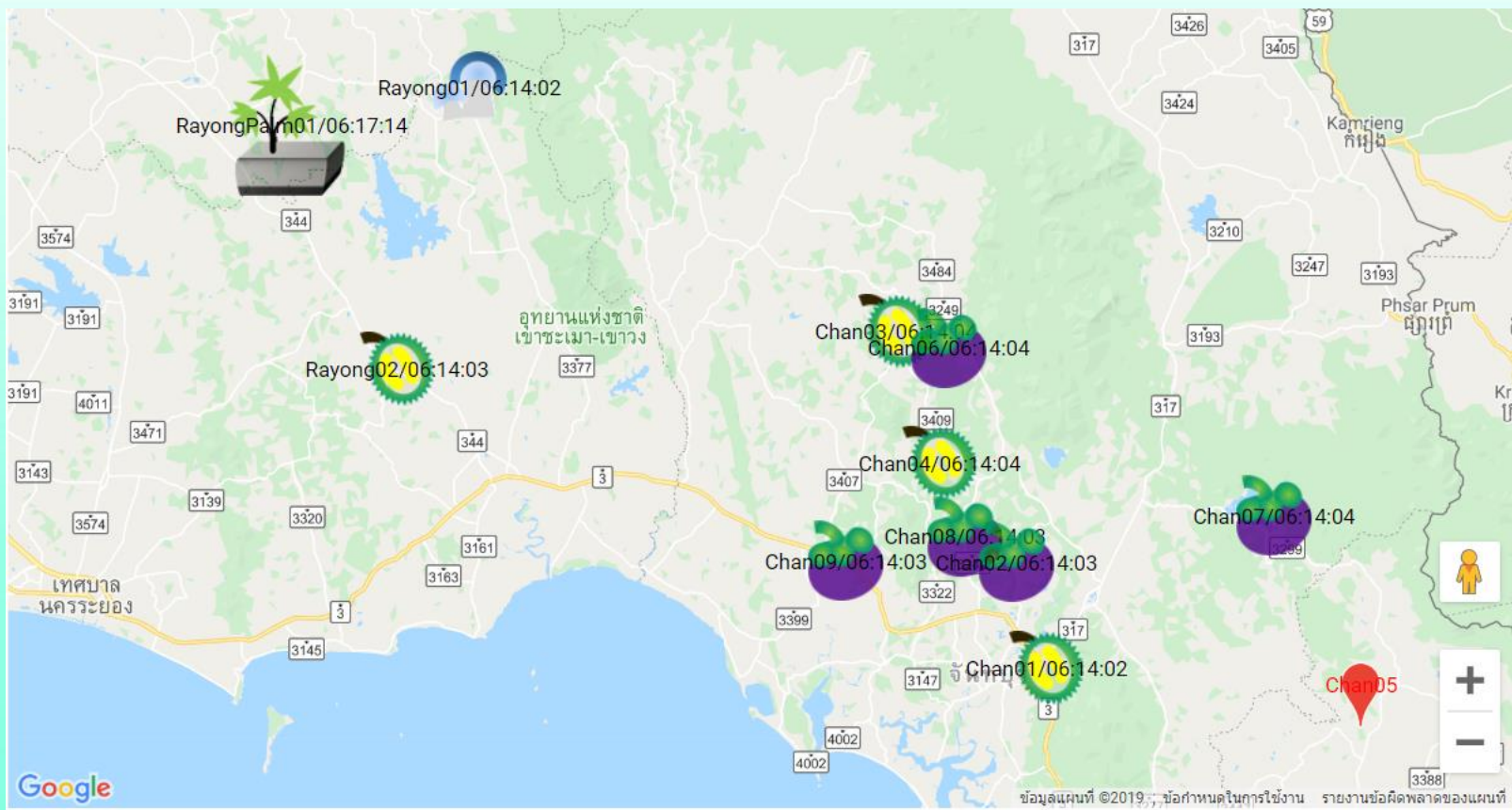


ความชื้นดิน

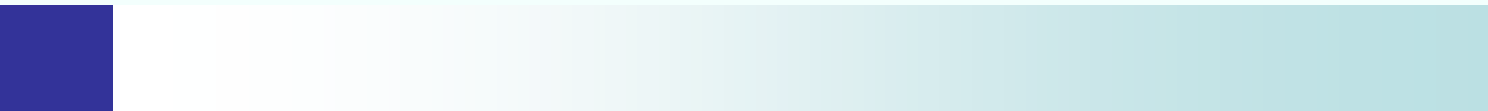


☒ Enable tooltip

ขอชื่อสวน ขอ logo



<http://203.150.37.159/YSF/NETPIE>



IoT WiMarC Farm

Public Group

About

Discussion

Chats

Members

Events

Photos

Group Insights

Moderate Group

Search this group

Shortcuts

Opastrith

IoT WiMarC Farm

NETPIE

Write Post

Add Photo/Video

Write something...

Photo/Video

Get Togeth

Change Group Cover

INSTANT GAMES

YOUR GAMES

Love Joe Methee

Search - IOT wimarc - GitHub

Part 2: Introduction to NET

FarmWiMarC

FarmWiMarC - GitHub

GitHub, Inc. [US]

https://github.com/FarmWiMarC

FarmWiMarC

Repositories 11

People 2

Teams 0

Projects 0

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Find a repository...

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New

Manyasmarc Farm

Updated on Jun 1

DEPA20180723

Updated on Jun 8

PIENODElibforArduino

C++ Updated on Apr 30

Top languages

Python JavaScript C++ HTML Eagle

People 2

opastrith

WiMarCFarmIoT

Windows Taskbar

9:56 AM 11/5/2018

Thanks