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Smart farm@NUOL
The implimentation of smart melon farm

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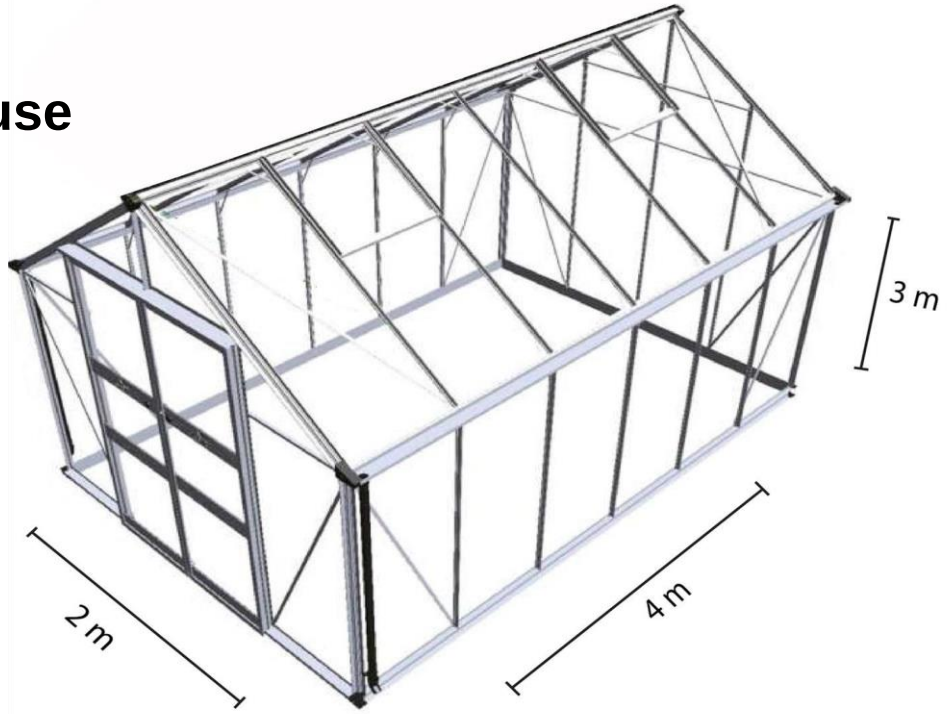
Objective

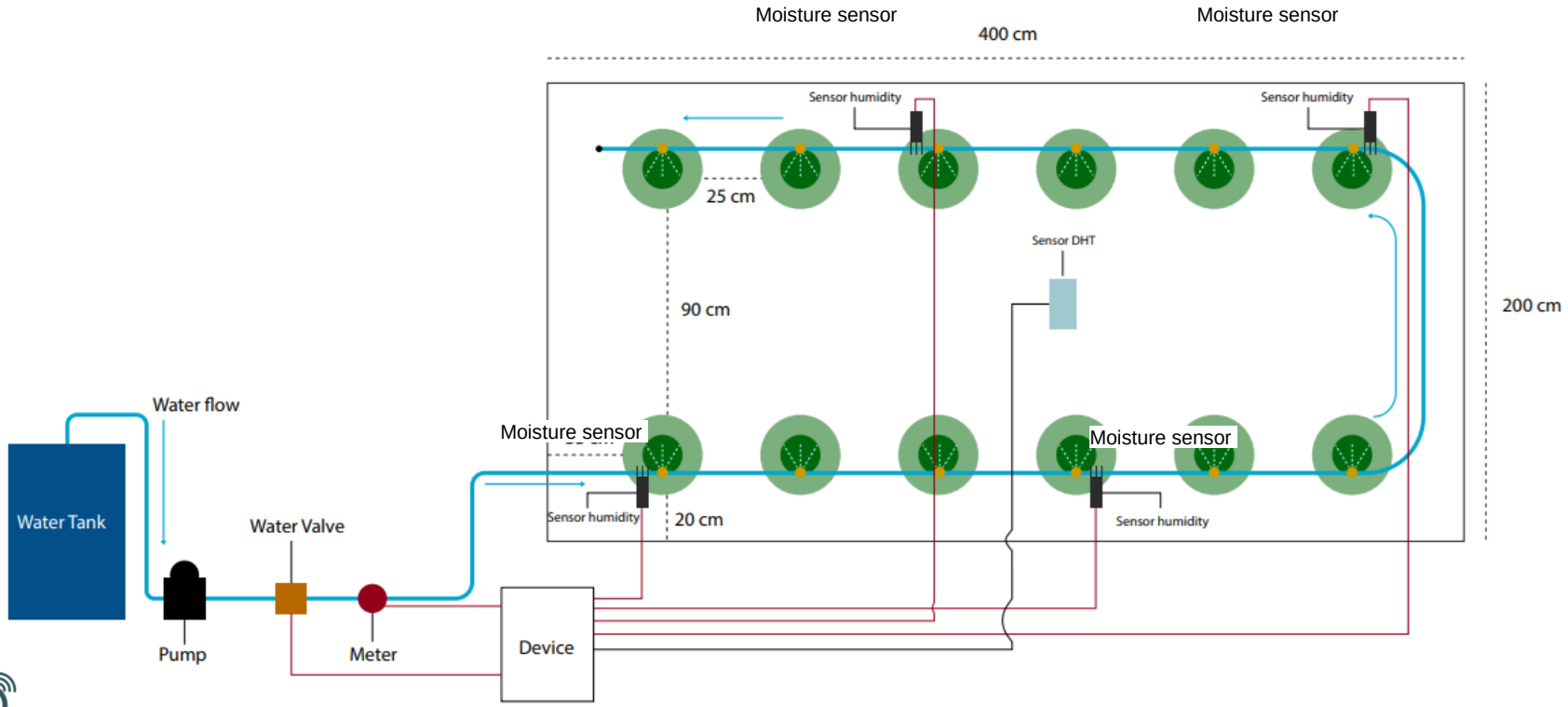
- Implementation of smart environment monitoring and controllable system for melon farm.
- Collected data of melon farm for using in the future.

Scope of work

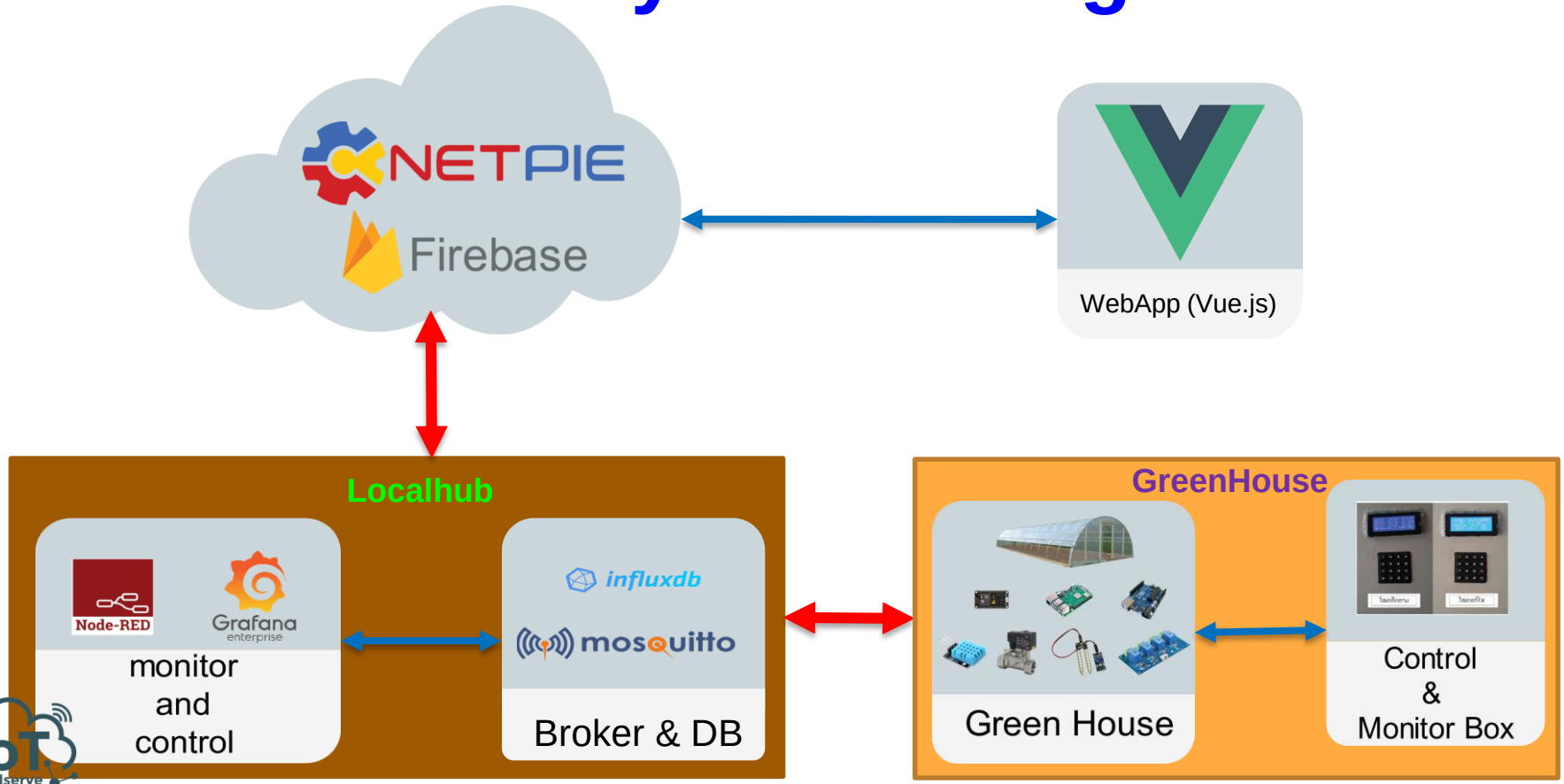
- **Implementation of GreenHouse as**
  - Width: 2 m
  - Length: 4 m
  - Height: 3 m
- **Plant 2 different type of melons**



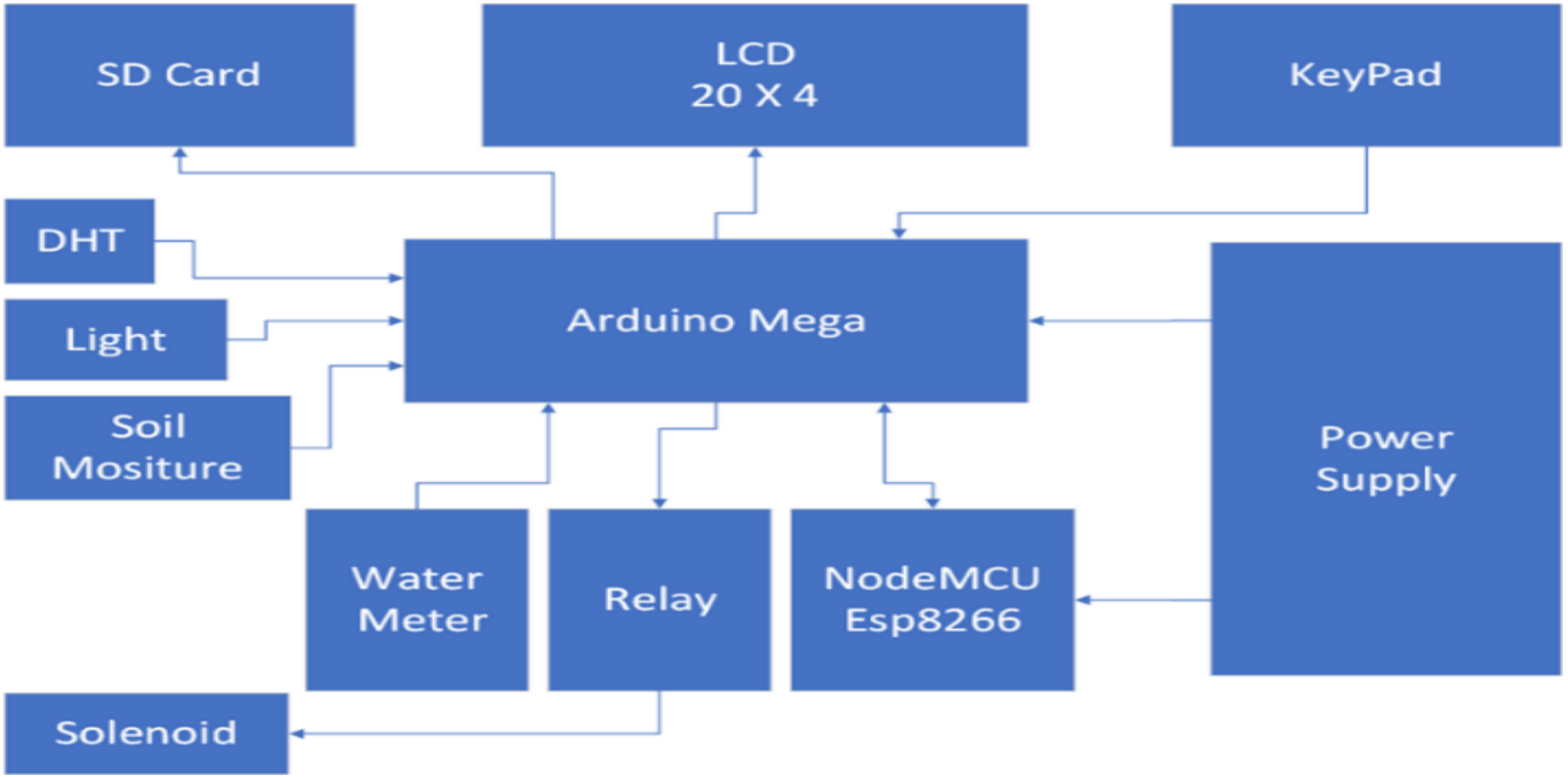
Inside the greenhouse



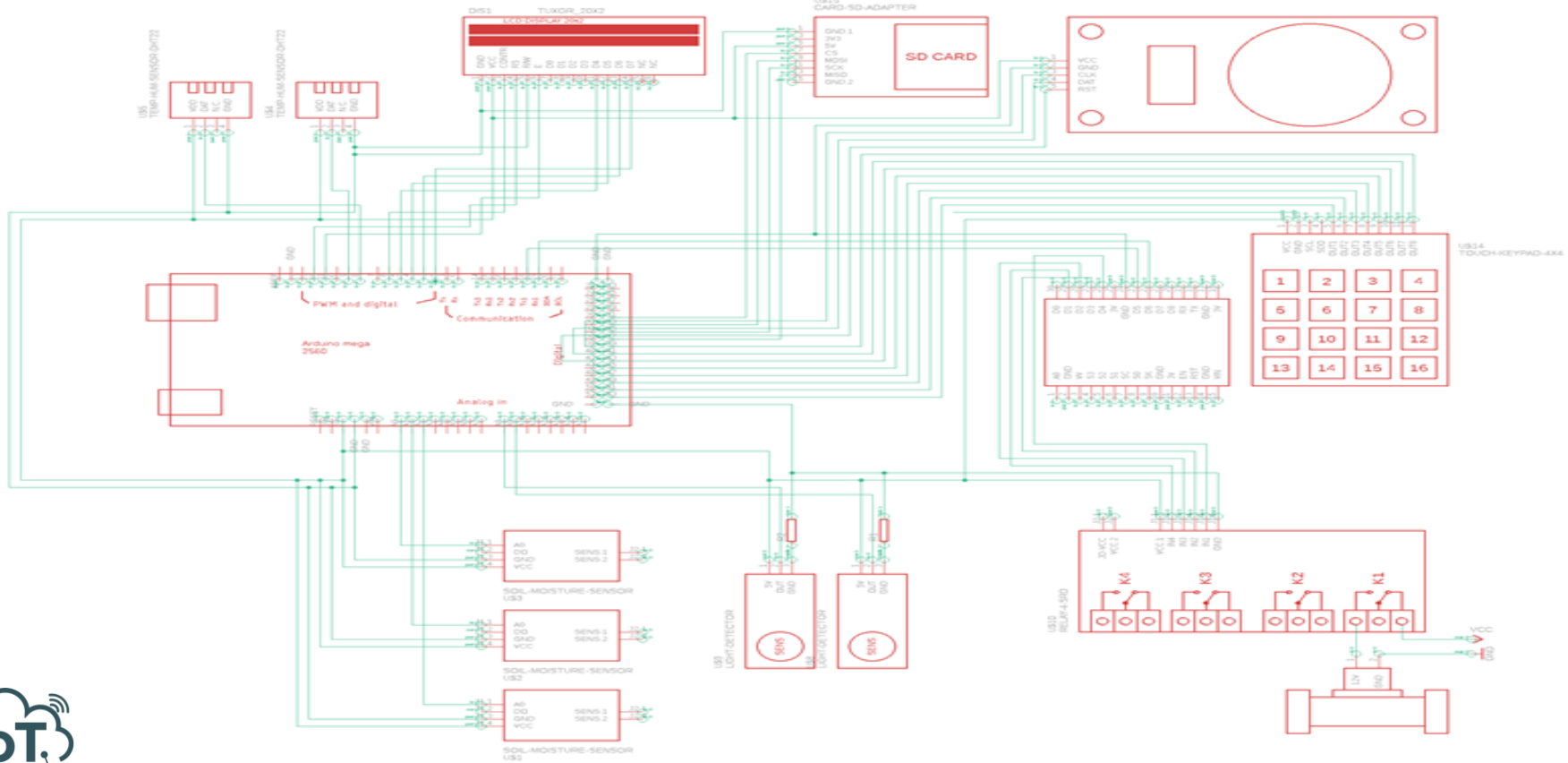
The system Design



System Diagram for GreenHouse

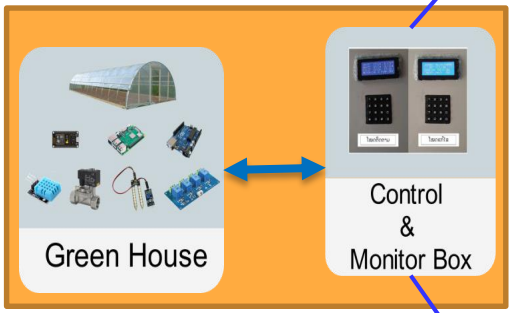


Circuit Diagram



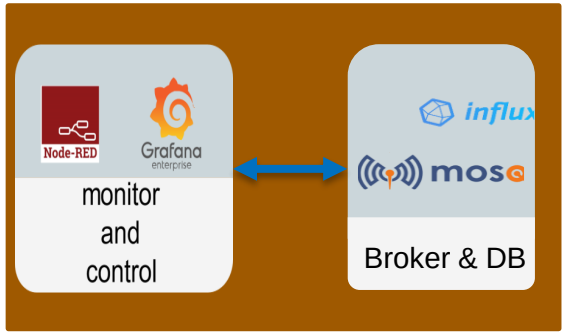
Monitoring and controllable

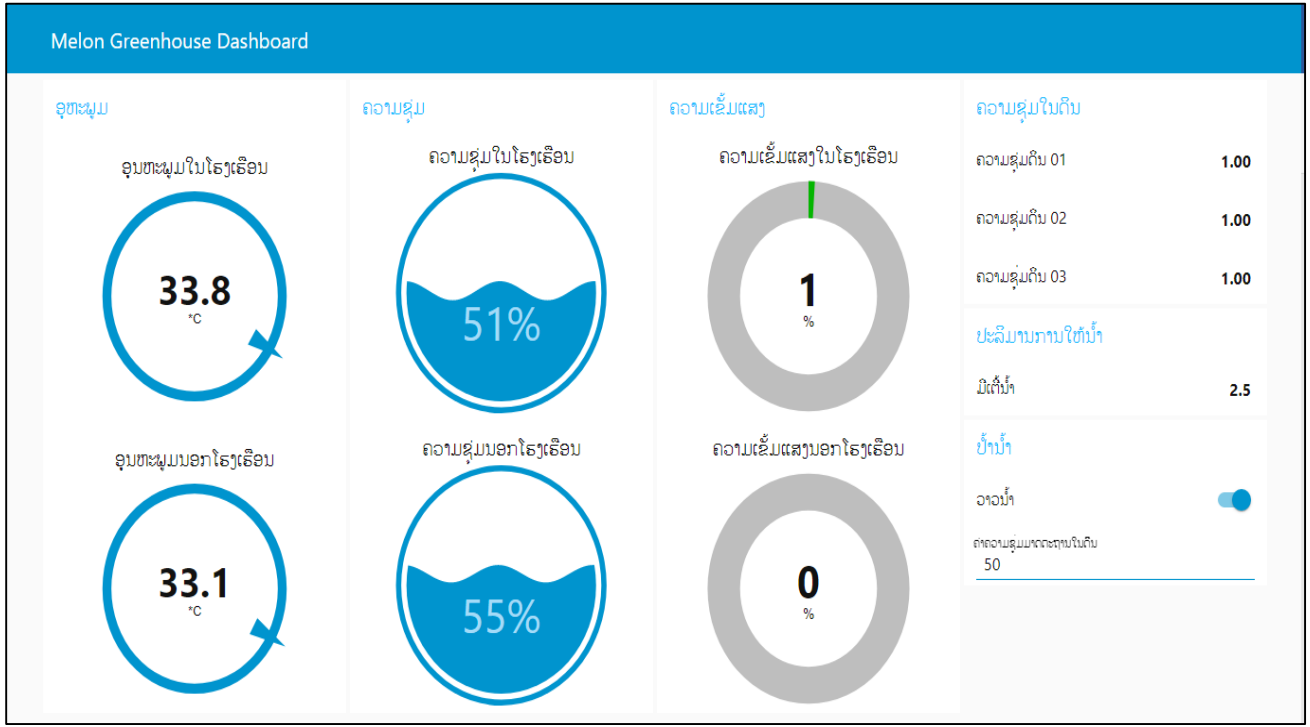
The Green House



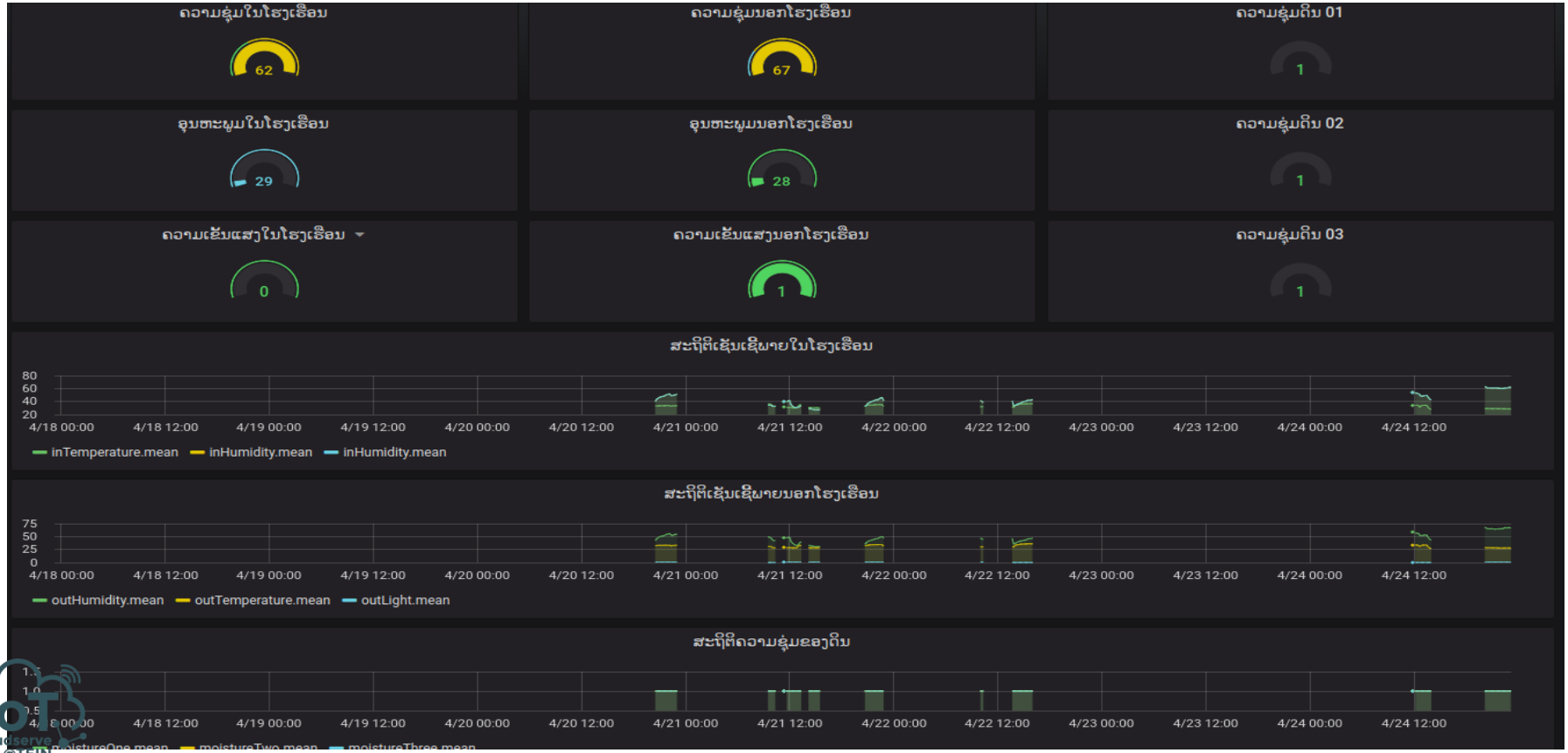
Node-Red Dashboard

Localhub

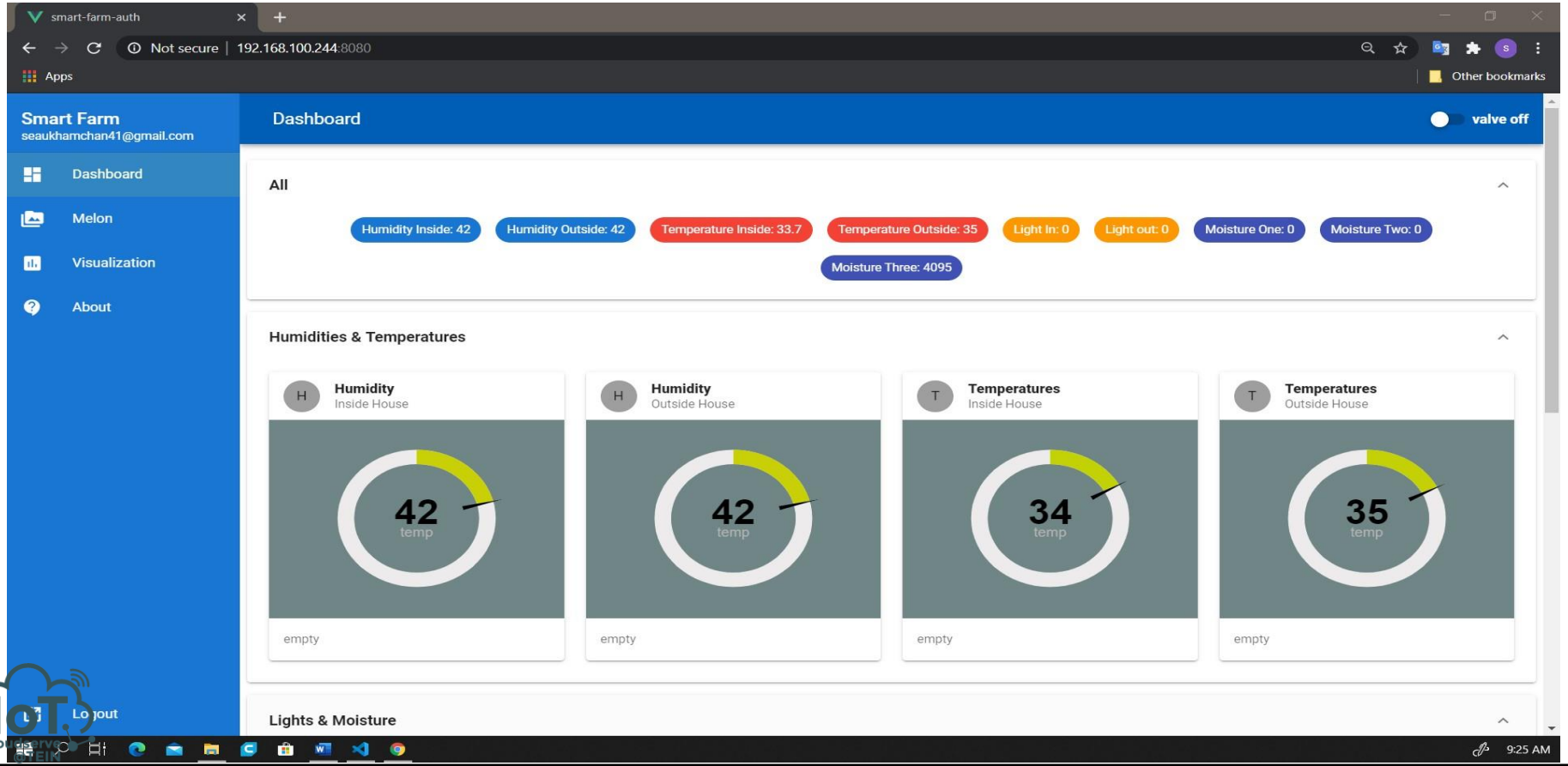




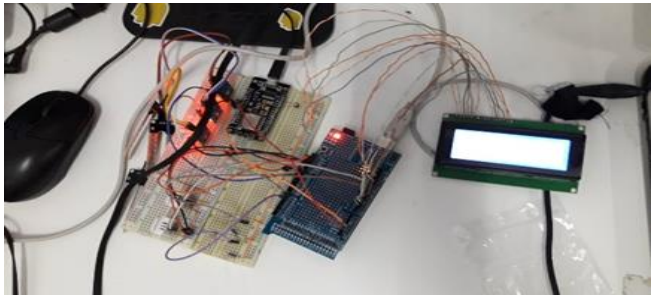
Grafana Dashboard

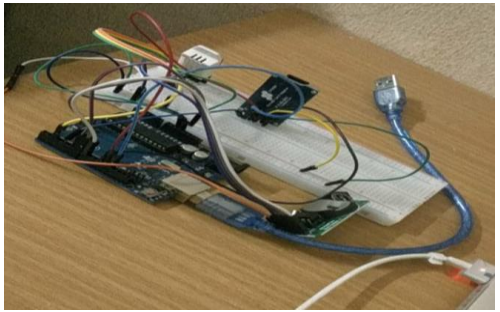


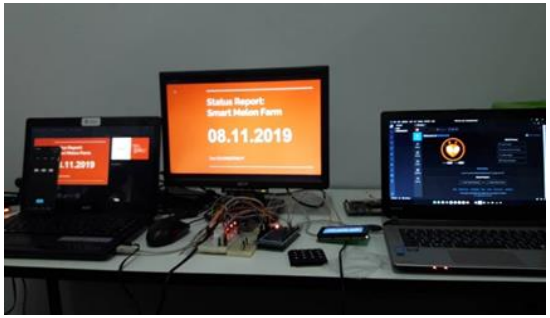
WebApp Dashboard

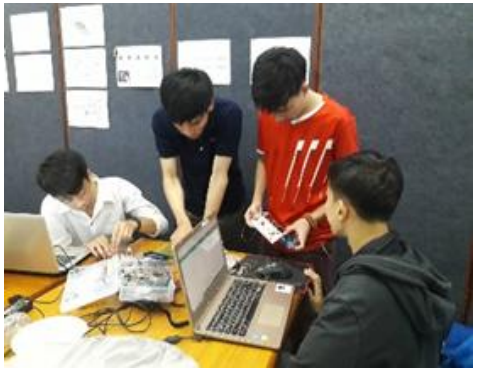


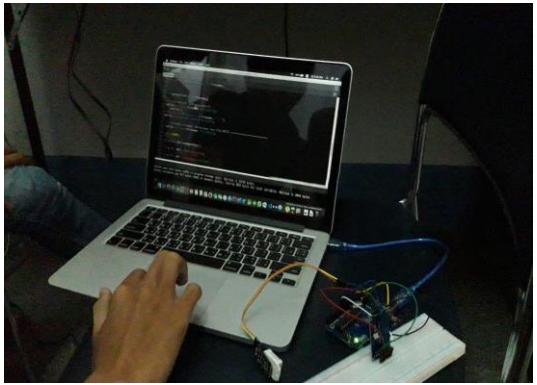
Implementation system











Green House installation

Green house installation from **8/12/2019-15/12/2019**

Preparation before plant melon

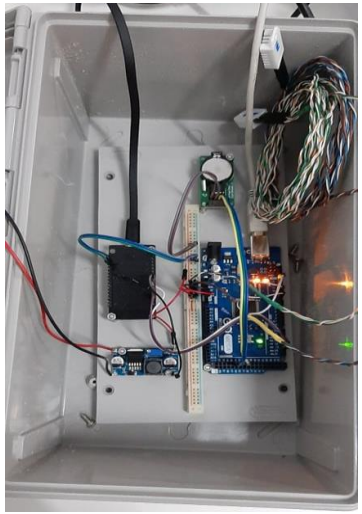
Preparation for plant melon from **18/12/2019-12/1/2020**

Plant melon

Start plant melone on **21/1/2020 (two types of melon: Taiwan and nerterland)**

System installation

System installation on **13-19/2/2020**



Take care of melon

The result

Get the result on **10/4/2020**





The result

Type of melon: Taiwan

No	Circumference (Cm)	Weight (Kg)
1	42	1
2	40	1
3	40	0.8
4	36	0.65
5	39	0.7
6	36	0.6
7	39	0.8
8	39	0.8
9		
Average	**38.88**	**0.79**

Type of melon: Nerterland

No	Circumference (Cm)	Weight (Kg)
1	46	1.5
2	42	1.2
3	42	1.2
4	42	1.1
5	39	0.9
6	40	1.1
7	42	1
8	42	1.1
9	30	0.9
Average	**40.56**	**1.11**

Future work

- Find partner for apply the system in real farm to get more data
- To apply machine learning with data for more efficient of plant melon

Acknowledgement

This work is supported by Asia@Connect's Data-Centric IoT Cloud Service Platform for Smart Communities (IoTcloudServe@TEIN) Project.

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