

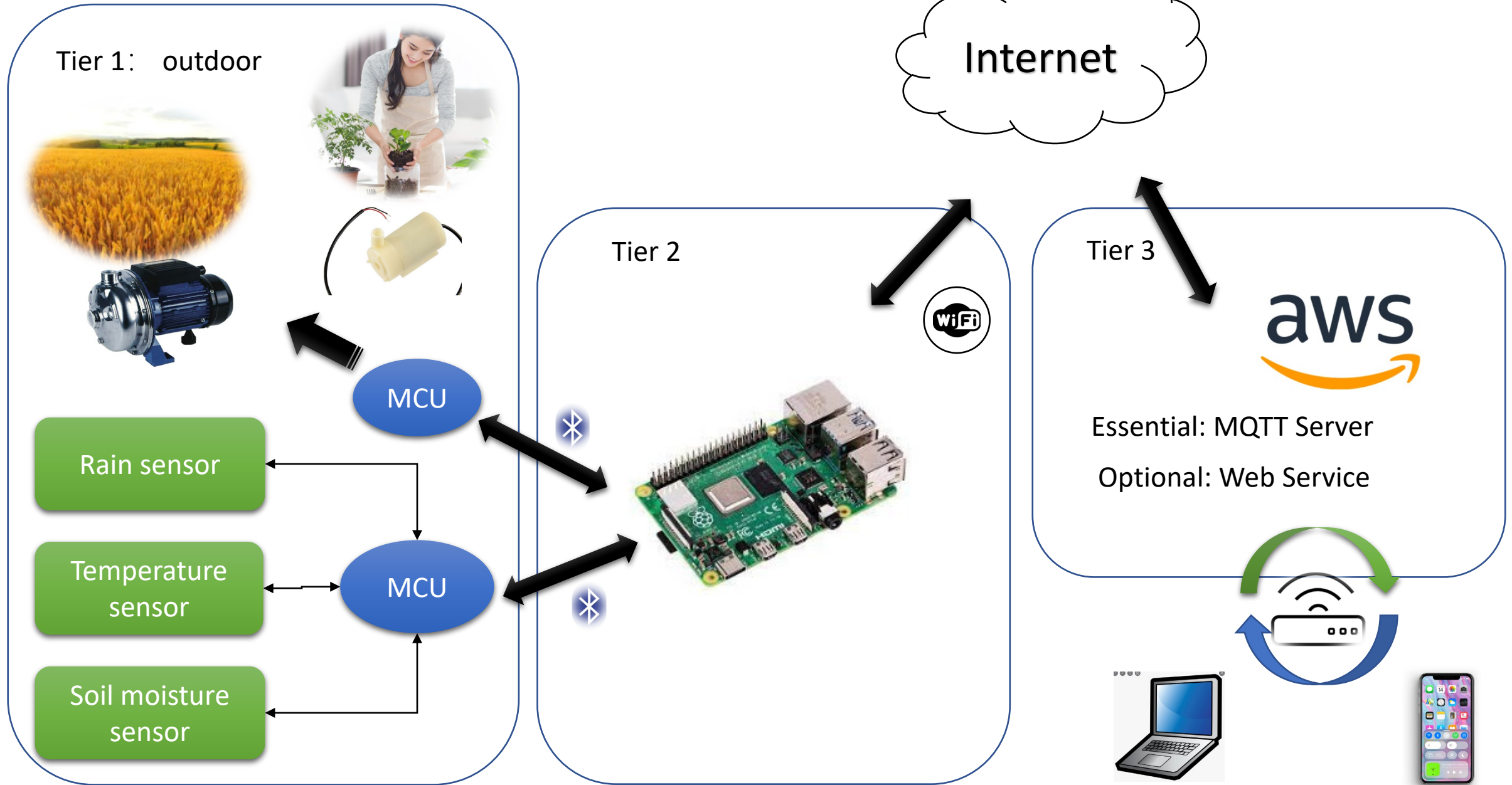
# IFN 649 Advanced Networks Assessment2 Smart watering system

---

Lecturers:	Prof Raja Jurdak Dr. Gowri Ramachandran
Tutor name:	Jun Wook Heo
Student ID:	N10629297
Student Name:	Chen Yun (Michael)

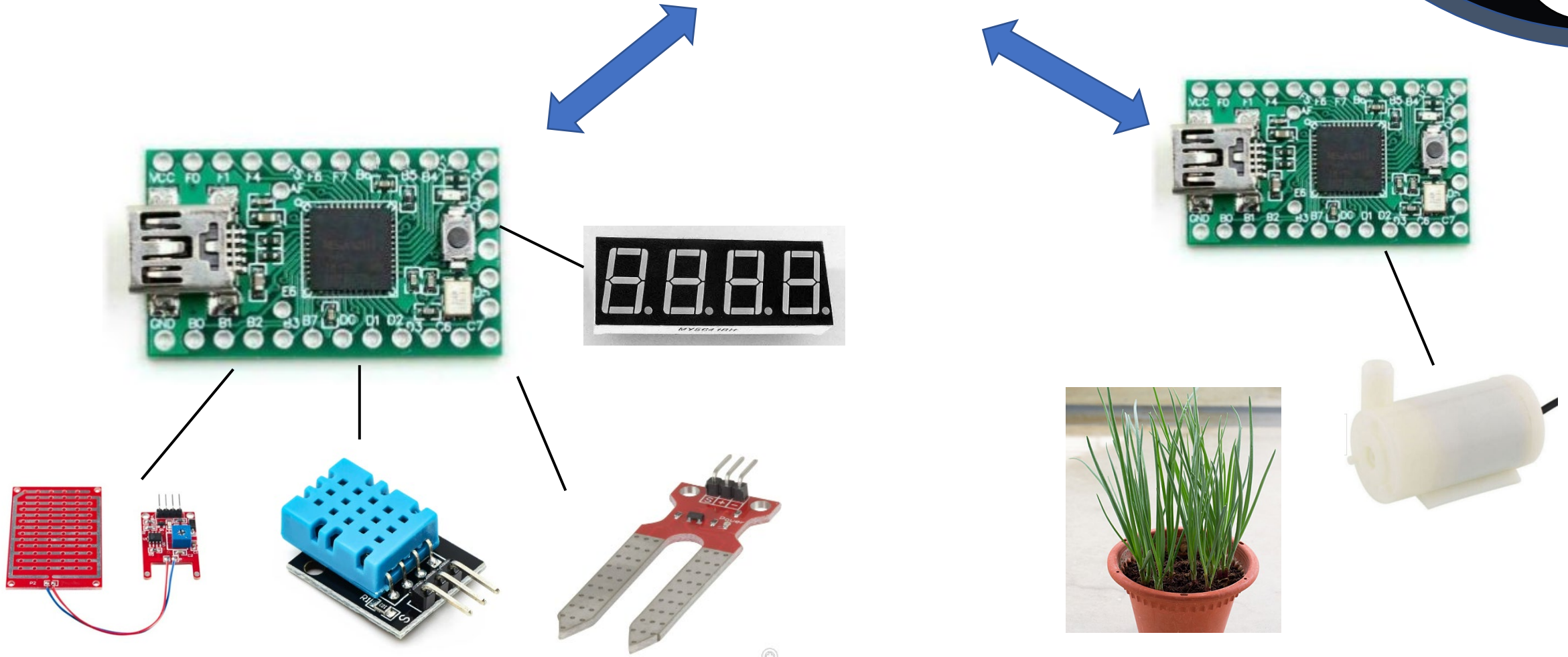
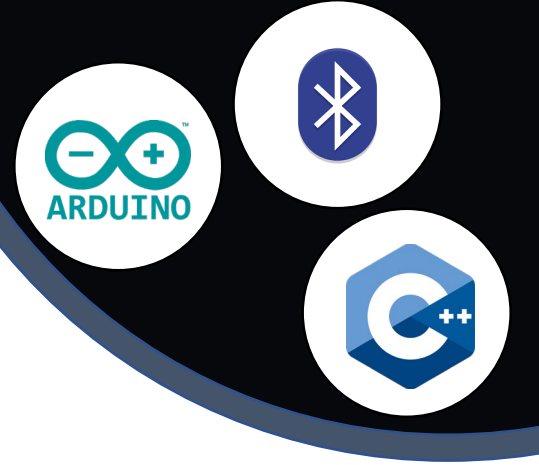


# Description of project



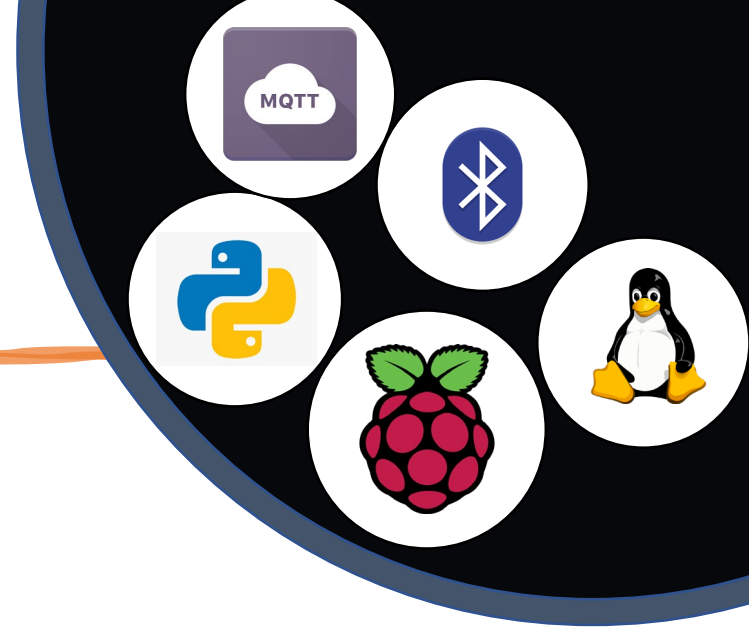
# Sensor layer

Tier 2



# Edge Tier

---



MQTT Client  
running in  
Raspberry Pi (Linux  
OS)

Using a Script of  
Python to Sub &  
Pub message

Retrieve and Send  
data from or to  
Teensy by BT







# Cloud tier

## MQTT Server

An MQTT server is run to provide data forwarding services for the clients in the second layer

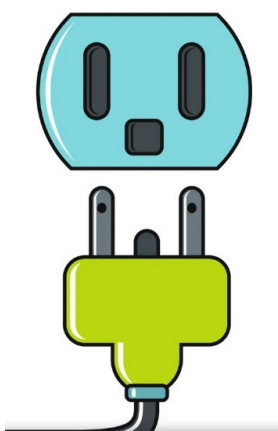
## Web Server

Create a Web service and subscribe to the messages published by the tier 2 client and display them on the page



# Consideration

## Power



15 Watts  
5 Volt  
3 Ampere

## Power analysis

### Supply:

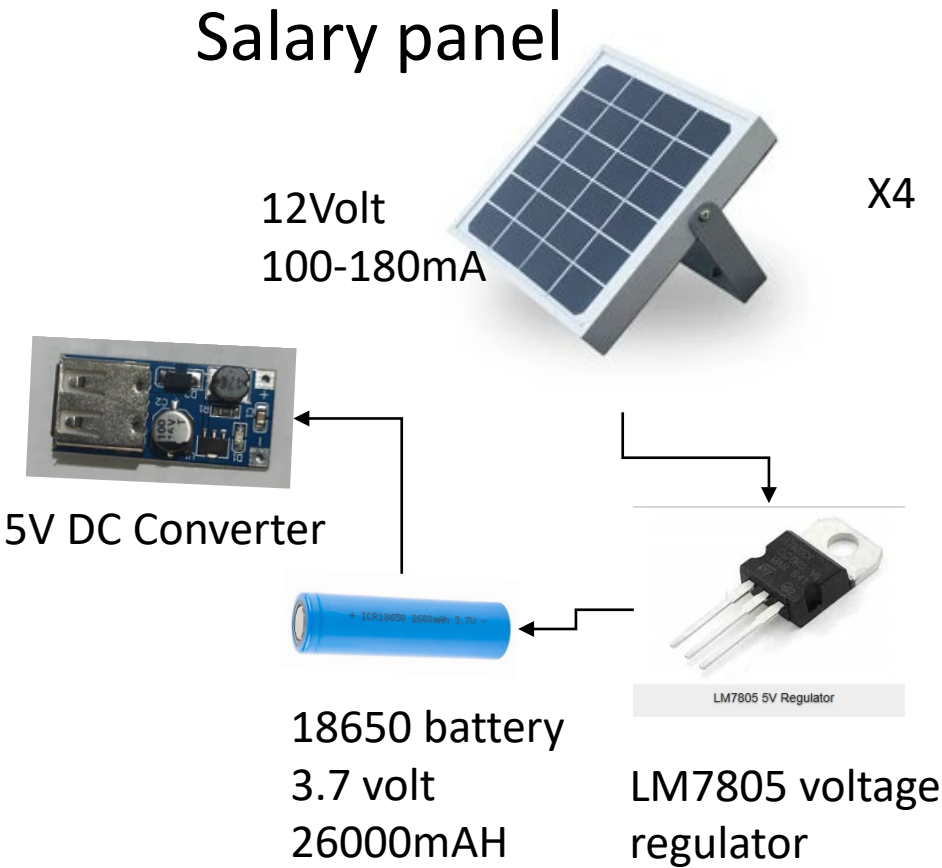
12V & 400-800mA  
Charge in 5-8 hours

### Requirement:

#### Total:

Approximately 100mA  
Use continuously for 26 hours

## Salary panel



	Teensy	BlueTooth	Sensors
Power(W)			
Voltage(V)	5V	3.3V	3.3V
electric current(mA)	10-30mA	40mA-50mA	4mA-10mA(per)

# Consideration

- Security

- Devices Security

- Set a specific KEY in MCU

- Network Security

- config `/etc/mosquitto/mosquitto.conf`

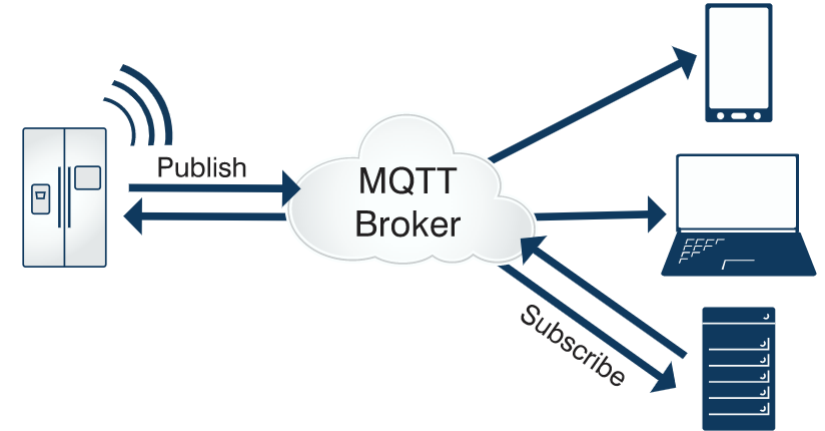
- disable the `allow_anonymous`

- Data Security

- Using AWS-MySQL to storage the data

- Cost

Total : 90 AUD in AU, but only 20 AUD in China (not include Raspberry Pi)



Orange Pi Zero LTS 512MB RAM  
Ethernet Run Android Ubuntu De

Extra 2% Off

★★★★★ 5.0 2 Reviews

AU \$40.12 AU \$66.87

AU \$4.55 Off Store Coupon Get

Bundle: Orange Pi Zero LTS



Quantity:

1 Additional 2% off (11  
885 Pieces available)

Ships to Australia

Free Shipping

# Methodology

## Research Method

### Artefact-oriented research method

The final purpose of this project is that an intelligent watering completion system can be implemented, which can accept the user's command switch, and the system is portable. The unattended mode can make the system run continuously without any intervention to ensure the growth of the plant.

## Research Structure



### Propose

- Specify a project goal to accomplish, which is already set in this case. Implement an intelligent watering system

### Plan & Design

- Develop execution plan and backup plan. Fully consider the problems that may occur in the project and look for solutions.

### Collect and evaluate the equipment

- Collect the equipment in the project and test it
- Evaluate whether its functionality meets the requirements of the project

### Experiment

- Connect the device according to the designed circuit diagram
- Write the code
- Deploy the service

### Test

Test the operation of the whole system under different conditions.

### Delivery

Deliver and demonstrate the entire system





Thank you