Smart Garden

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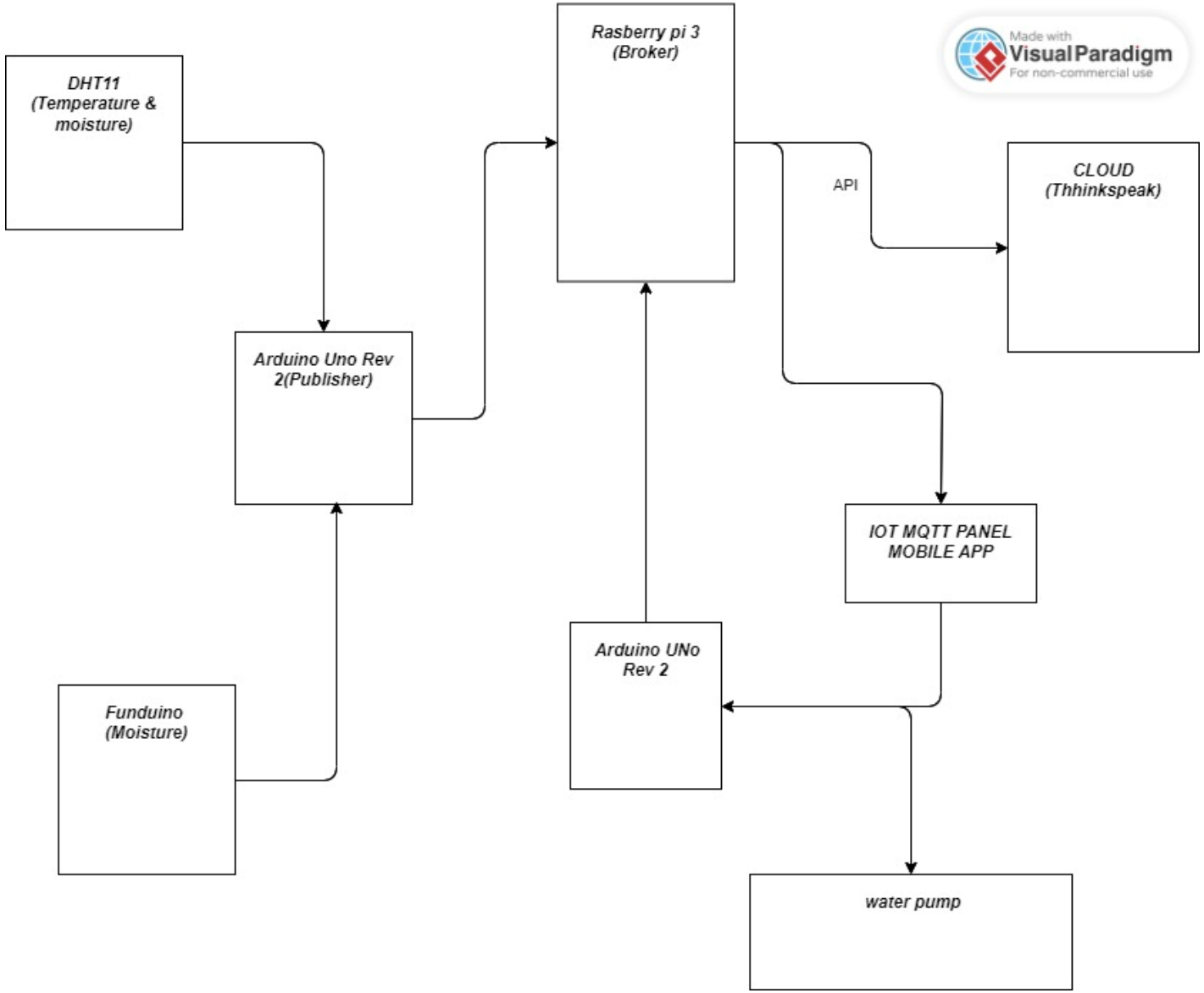
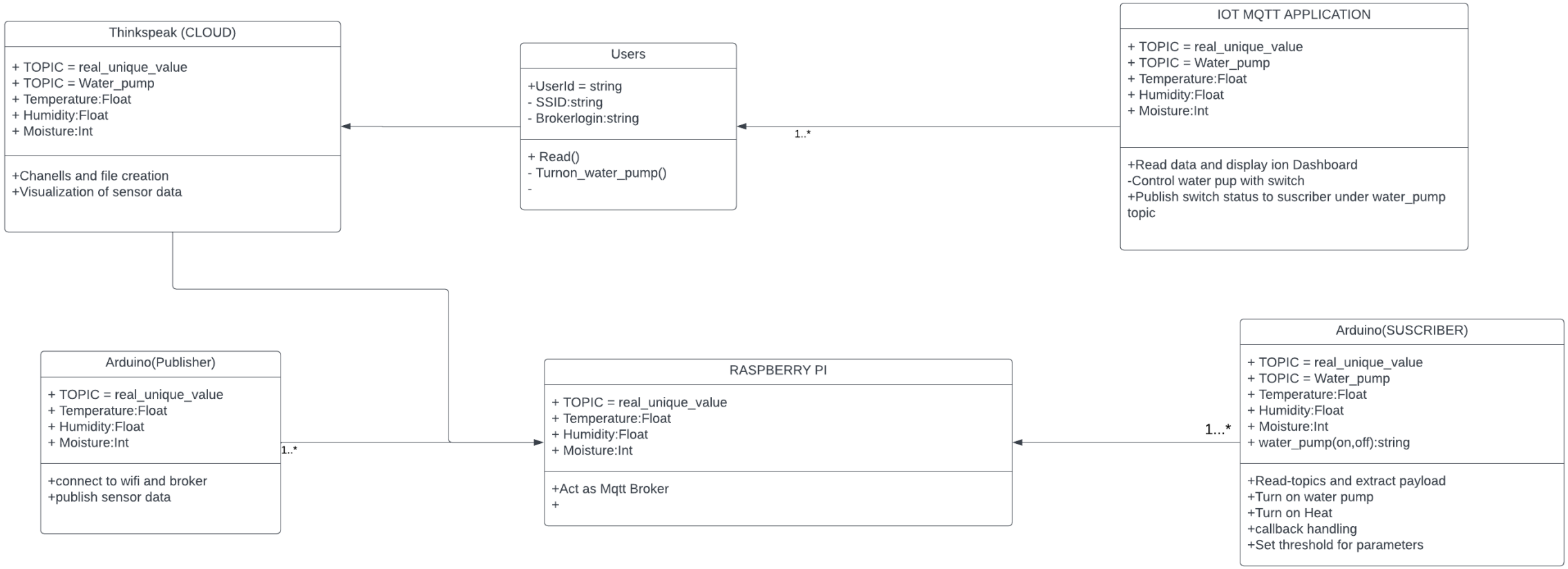
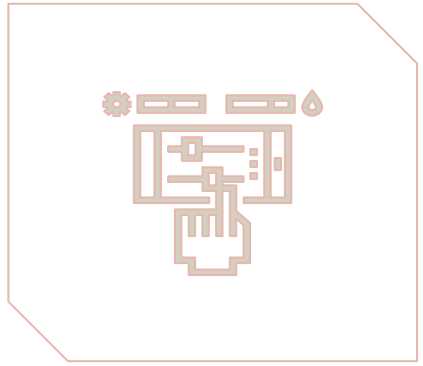
Smart Garden Block Diagram



Smart Garden Class diagram



MQTT Broker Setup

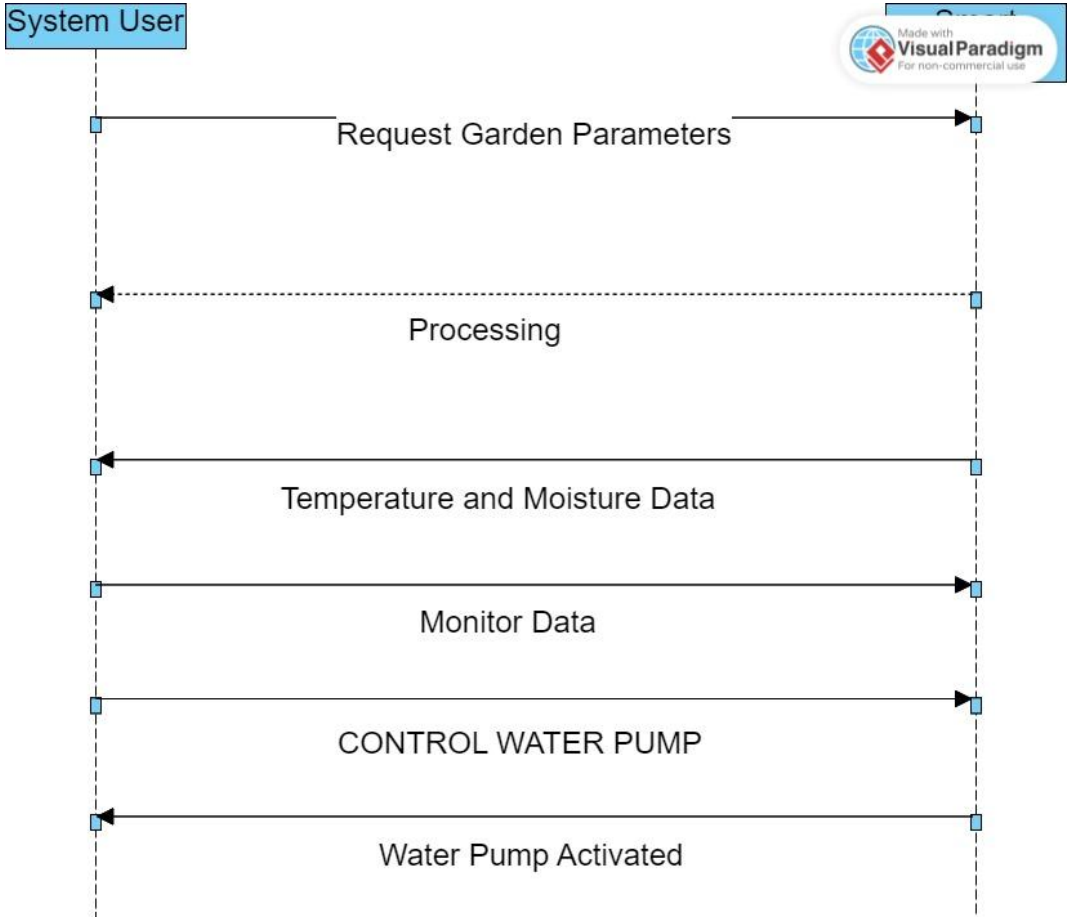


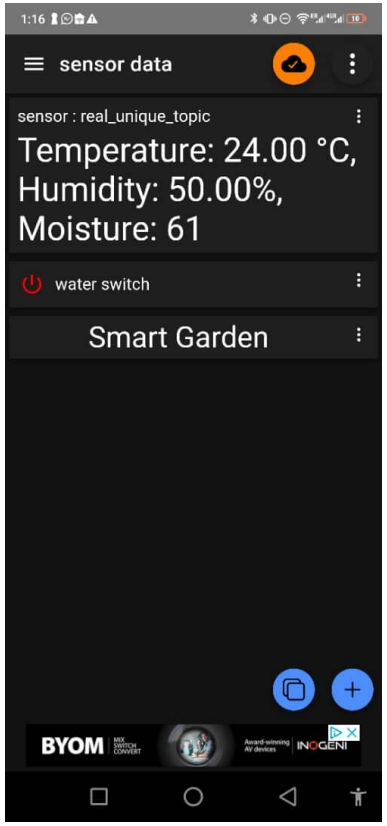
- **MQTT broker acts as a central messaging hub for communication in the Smart Garden system**
- **Installation and Configuration**
- **Setting up clients and testing**

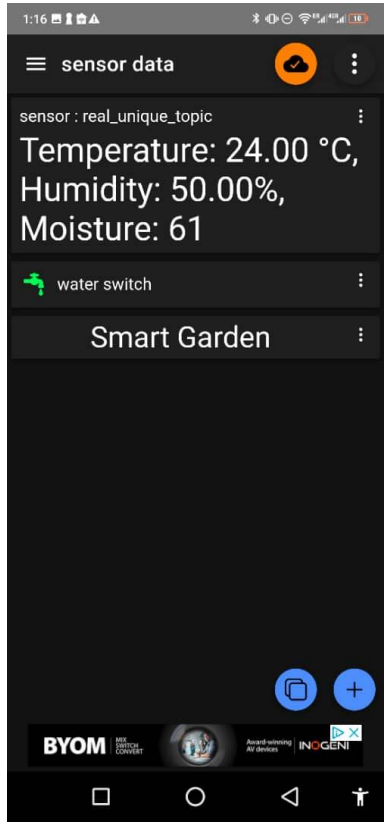
Sensor Node Setup

- **Setup the sensors and establish MQTT client functionality on the sensor node.**
- **Use MQTT libraries and protocols to publish sensor data to specific topics on the broker.**
- **Publish sensor data to the topic**

User Interaction





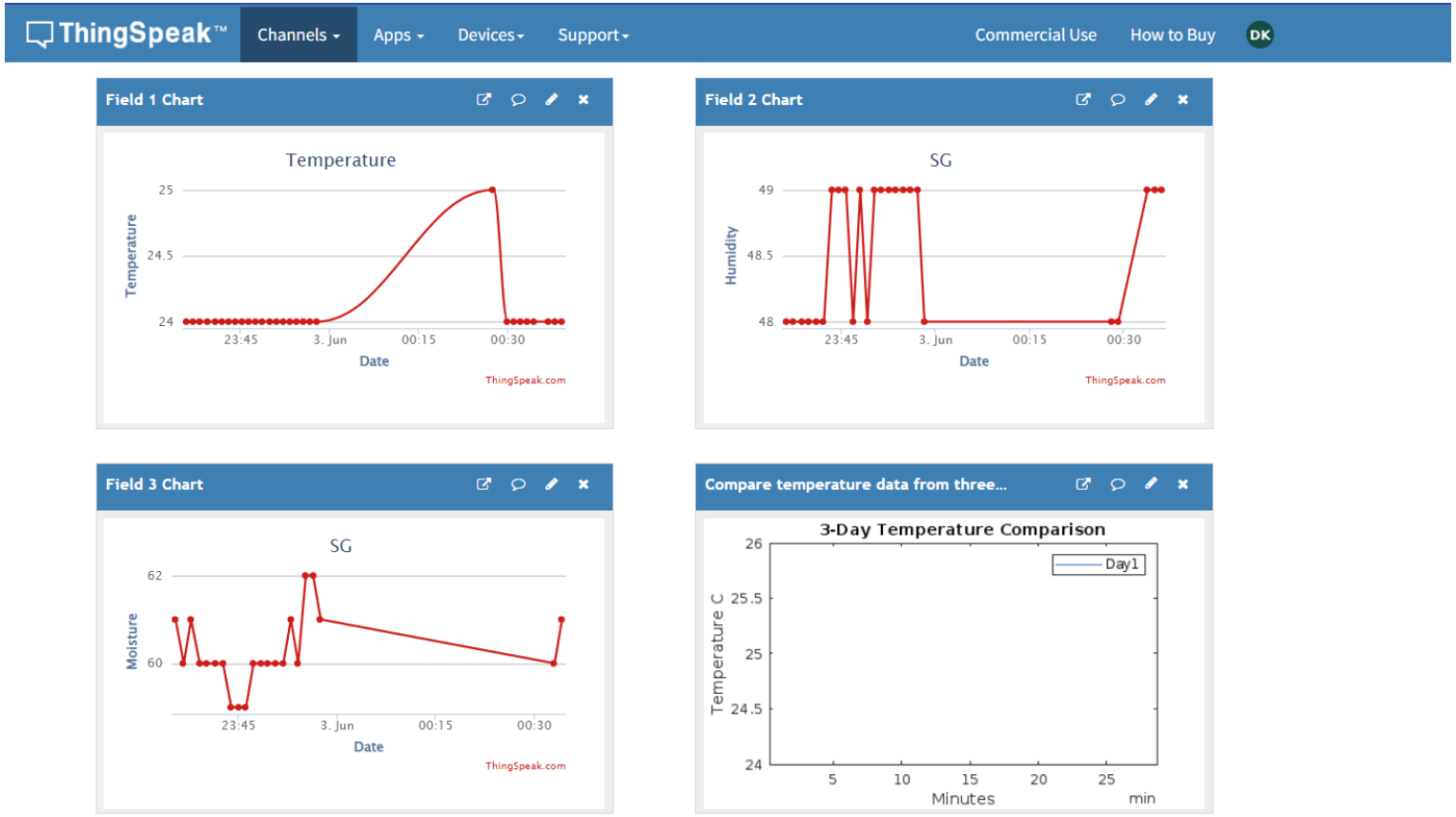


Iot MQTT panel

Python code for Thinkspeak

```python
import paho.mqtt.client as mqtt
import requests
import time

# MQTT broker settings
broker = "172.20.10.4"
port = 1883
username = "teamd"  # Replace with your MQTT broker username
password = "TeamD2023"  # Replace with your MQTT broker password

# ThingSpeak settings
channel_id = "2164717"  # Replace with your ThingSpeak channel ID
api_key = "L2T932BU6SPRNEBH"  # Replace with your ThingSpeak API key

# MQTT on_connect callback
def on_connect(client, userdata, flags, rc):
    print("Connected to MQTT broker")
    client.subscribe("real_unique_topic")  # Subscribe to the topic where data is being published

# MQTT on_message callback
def on_message(client, userdata, msg):
    payload = msg.payload.decode()
    print("Received message:", payload)

    # Extract temperature, humidity, and moisture readings
    temperature_start = payload.find("Temperature:") + len("Temperature:")
    temperature_end = payload.find("°C", temperature_start)
    temperature = payload[temperature_start:temperature_end].strip()

    humidity_start = payload.find("Humidity:")
```

Thinkspeak Cloud



Thanks !