IBM INDIA SOFTWARE LABS

Autonomous Car Monitor System

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Problem Statement

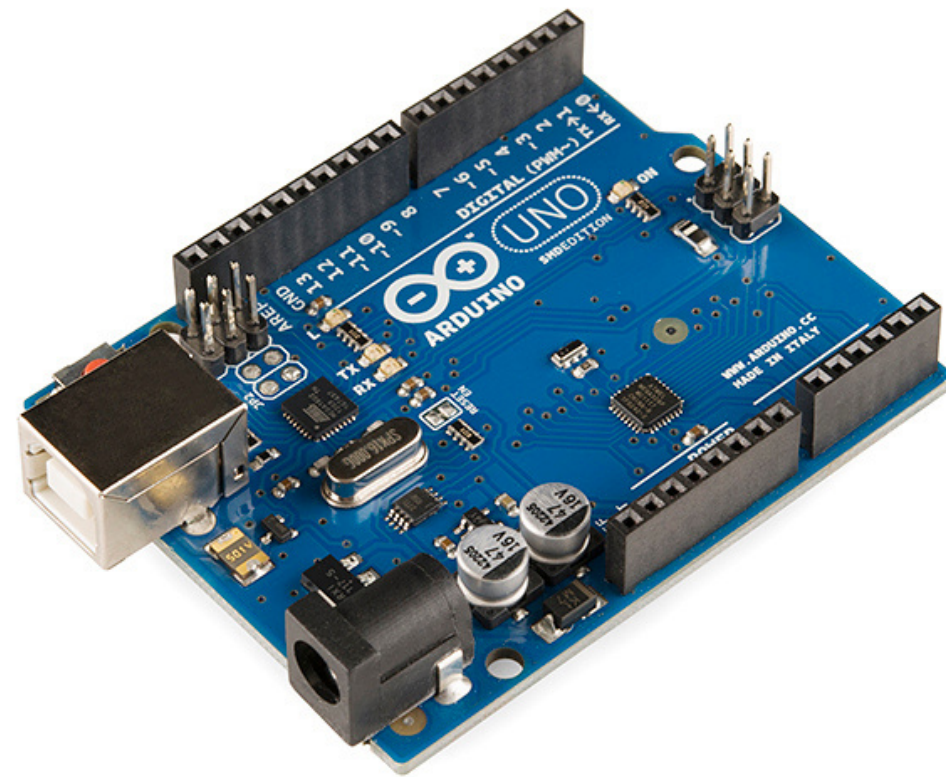**To check the environment of the Autonomous vehicles**

- Managing the machines - keeping them ready, keeping track of their health, scheduling maintenance, etc.

- Managing their use: Scheduling them for use, monitoring/tracking them, accommodating environmental conditions, etc.
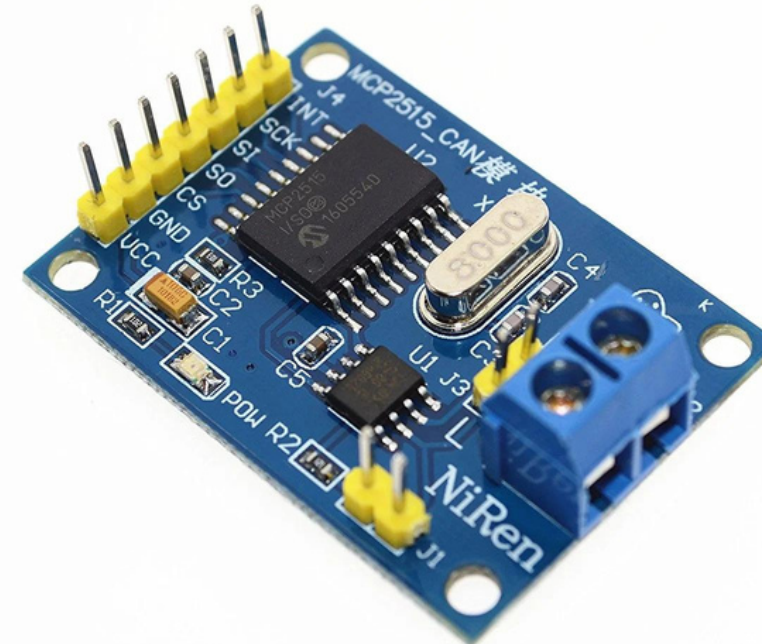
Hardware Requirements
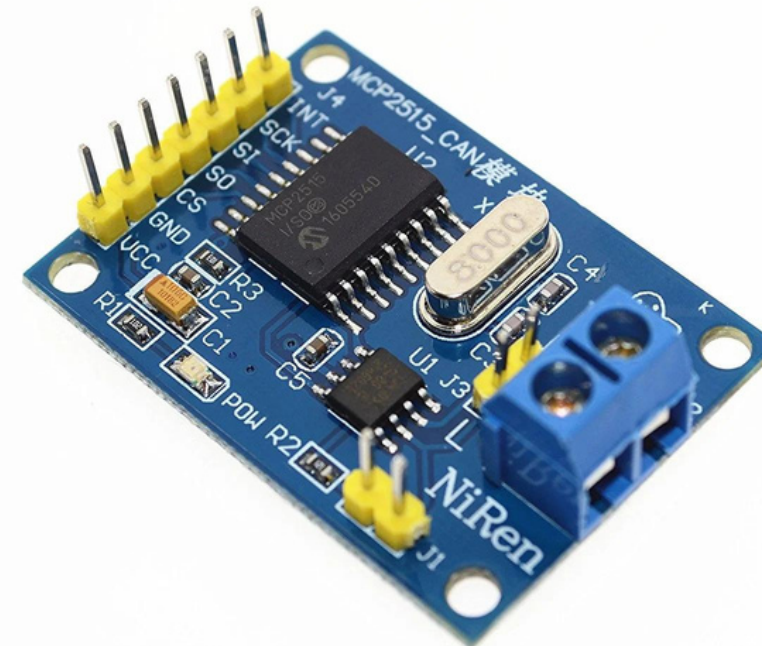

Arduino Uno

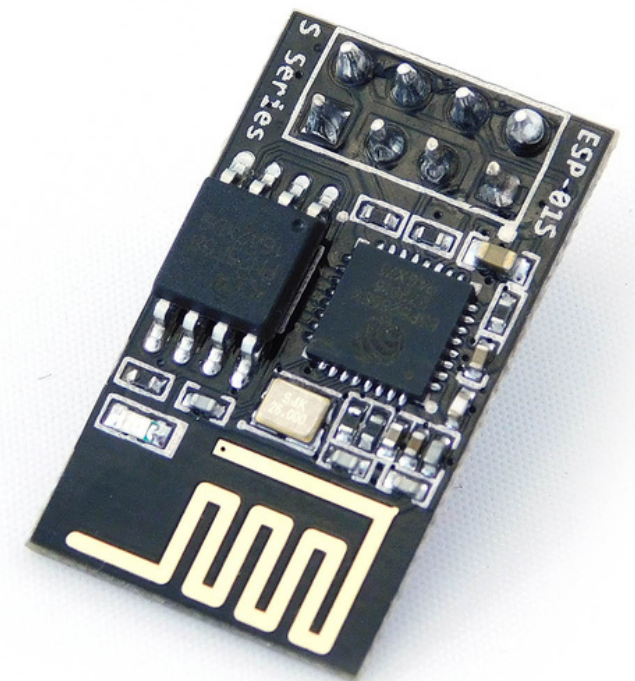# Hardware Requirements

Arduino Uno

MCP2515

Hardware Requirements
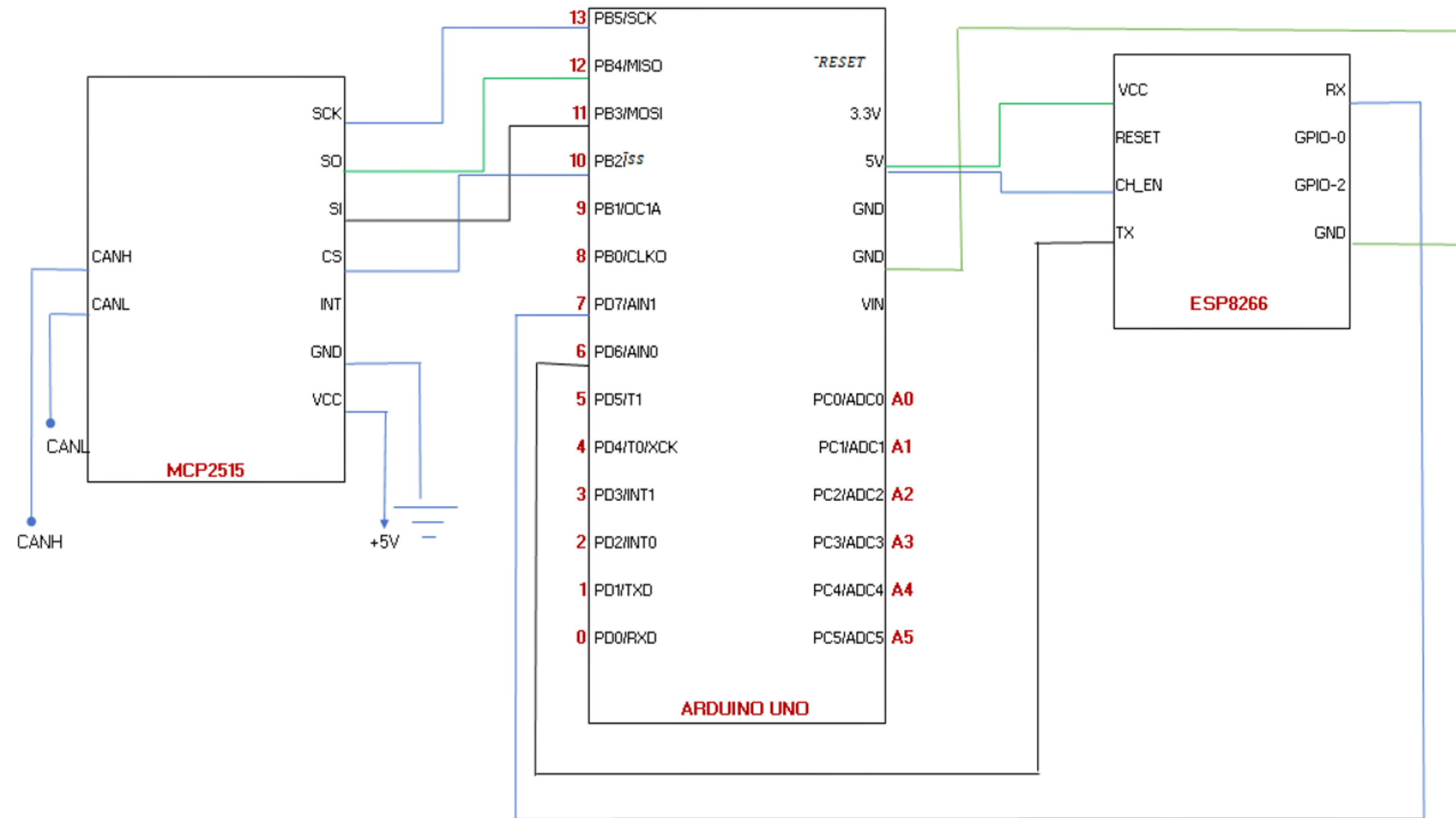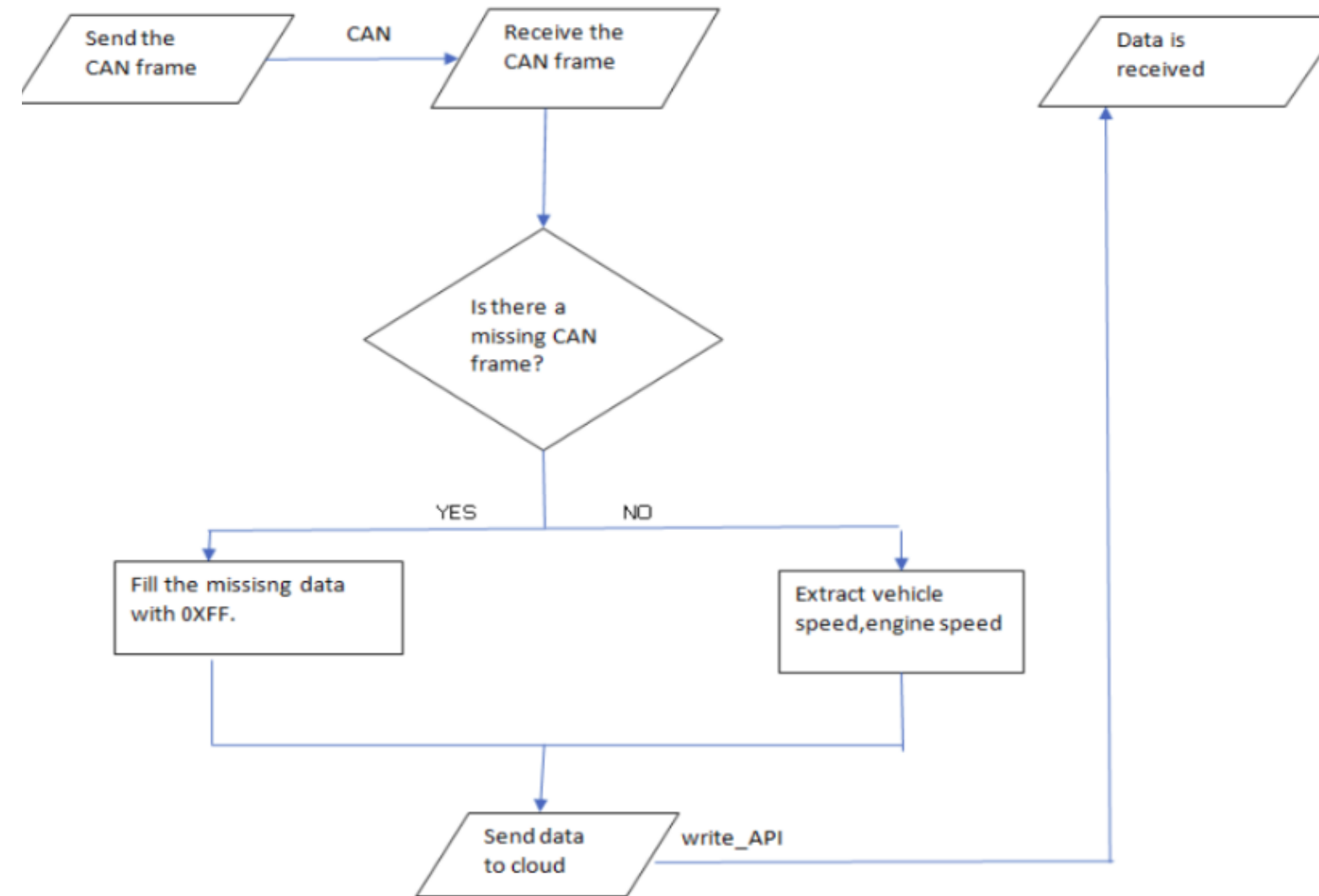

Arduino Uno

MCP2515

ESP8266

Software Requirement

Arduino IDE

Architecture

Pin Diagram

Methodology

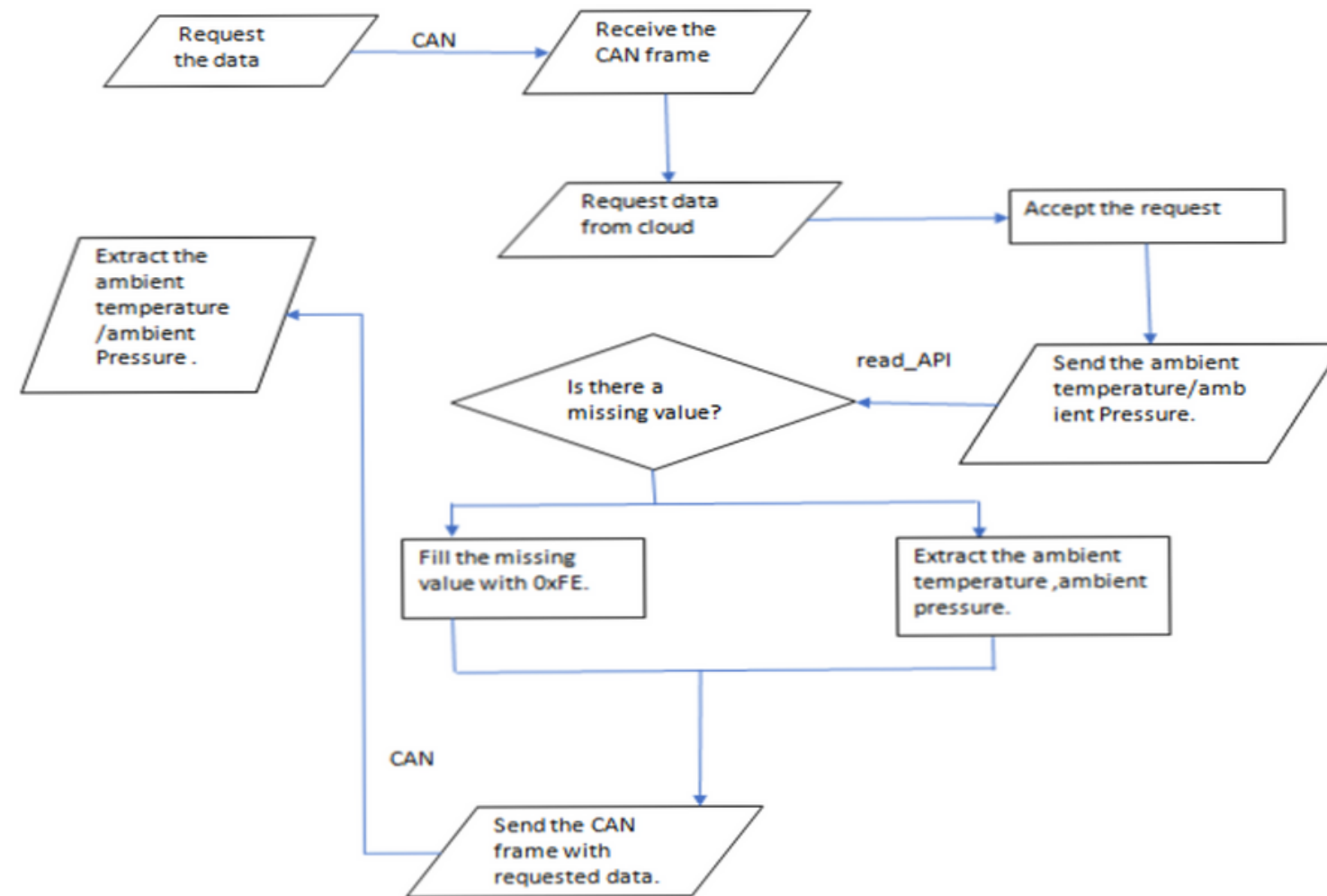**CAN Frame:**

CAN ID	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
0x4E	Circular counter	Vehicle speed	Engine speed	Gear	0xFF	0xFF	0xFF	0xFF

Send data to the cloud

Methodology

CAN Frame:

CAN ID	Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
0x4B	Requested data	Ambient temperature	Ambient humidity	0xFF	0xFF	0xFF	0xFF	0xFF

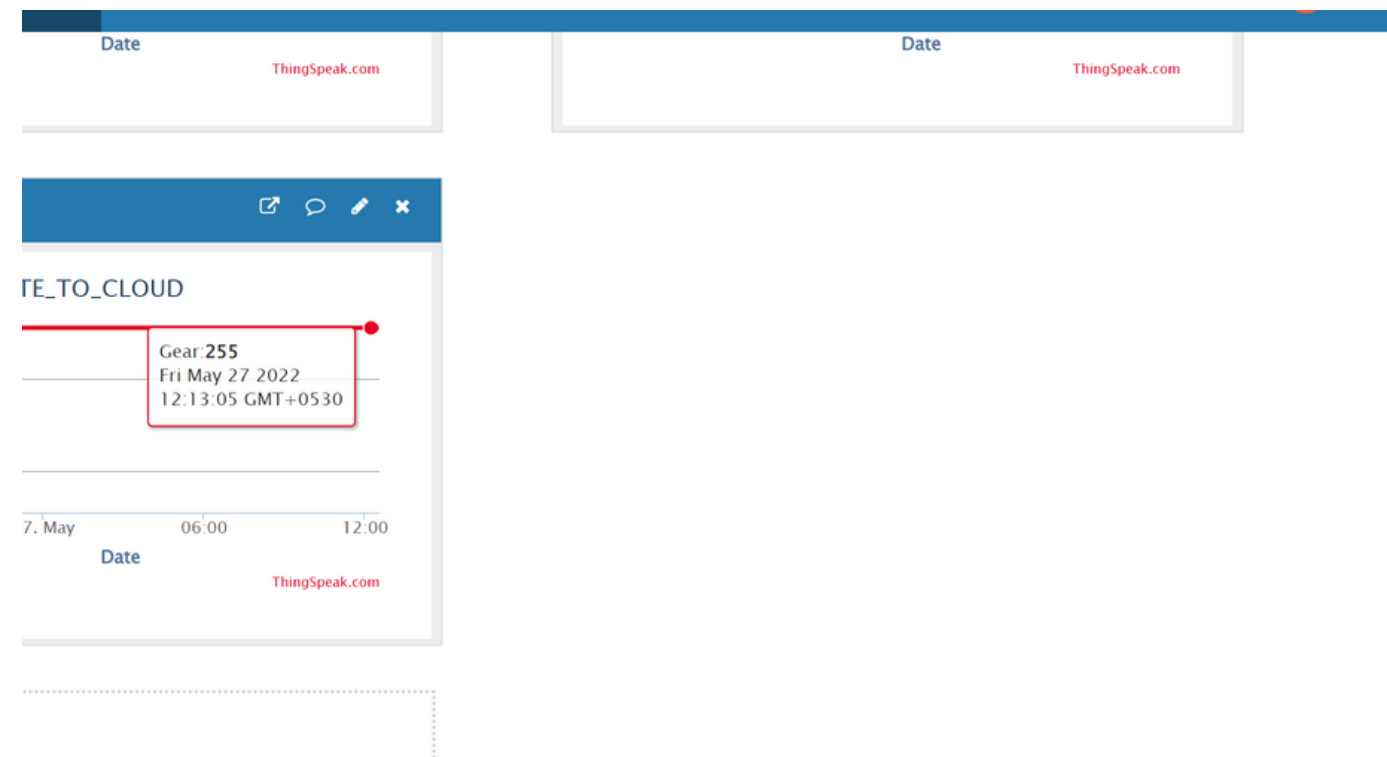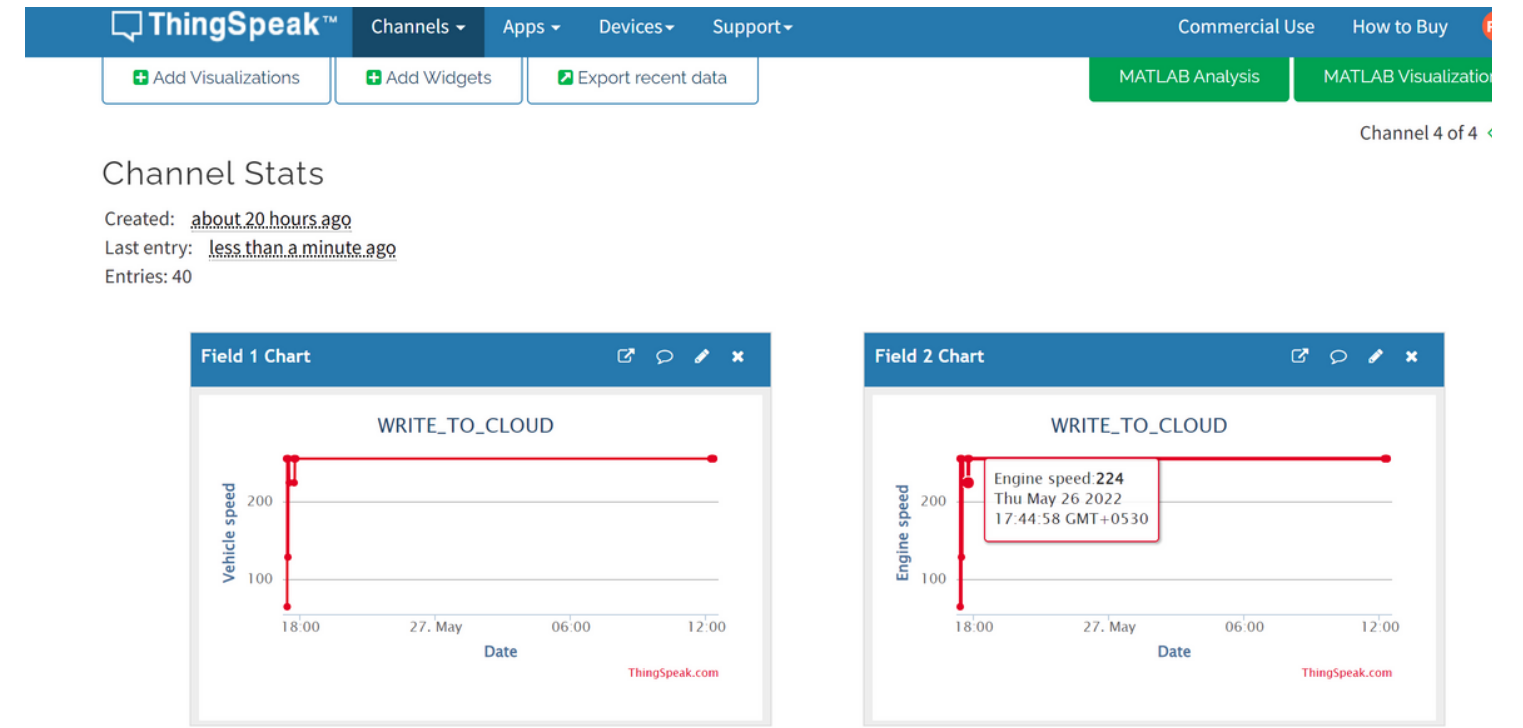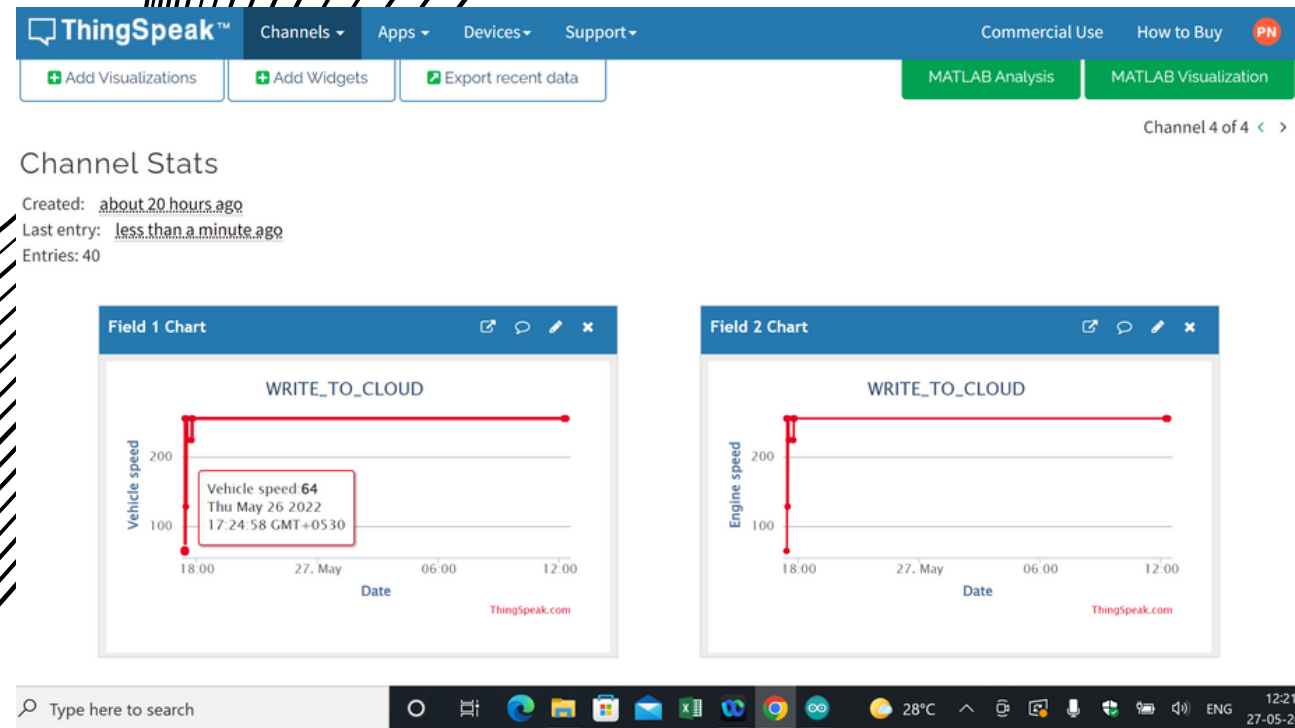Recieve data from the cloud

Actual Connection
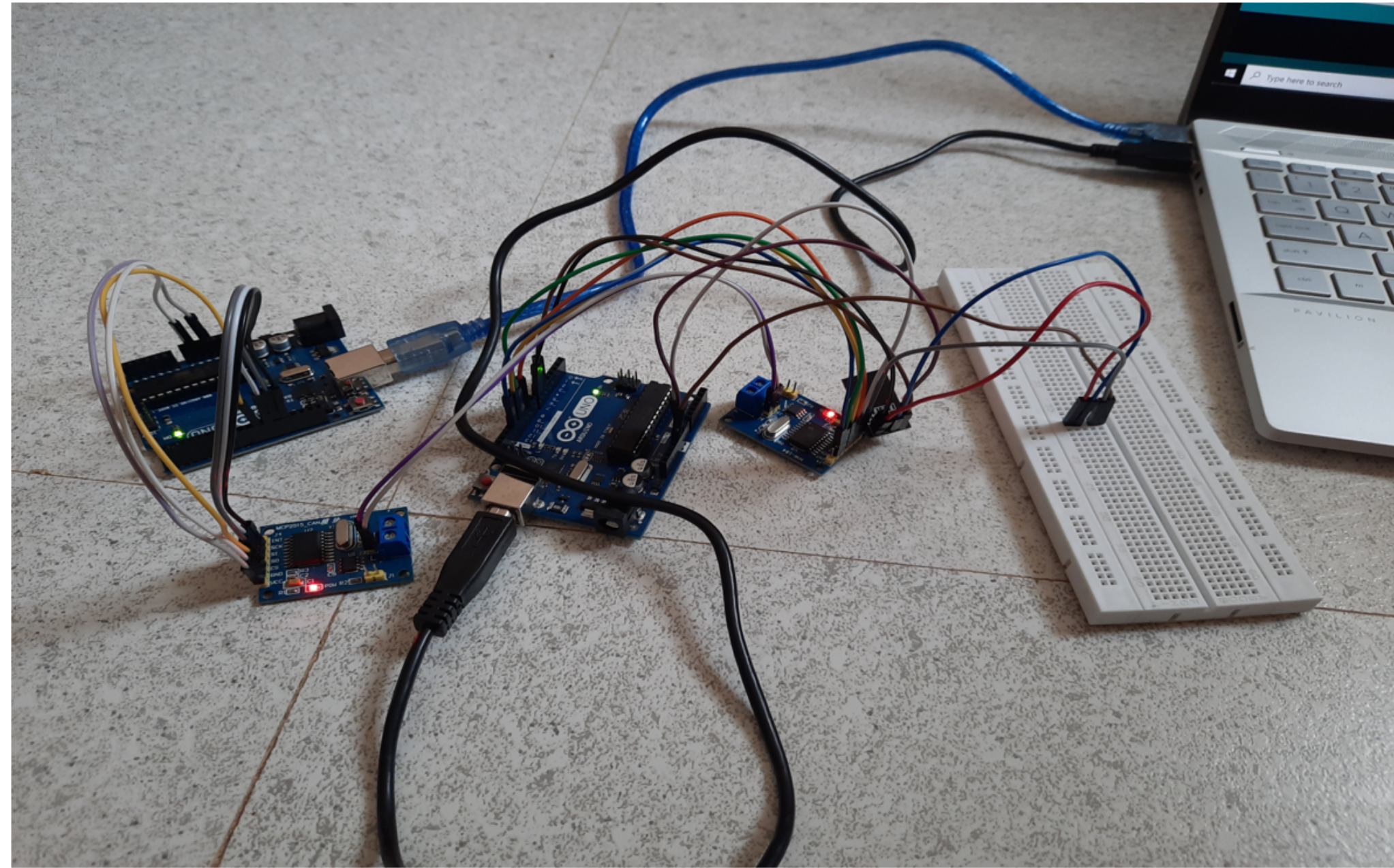
Implementations

Sending the data to the cloud

```
12:15:14.668 -> Writing to cloud
12:15:14.668 -> [WiFiEsp] Connecting to api.thingspeak.com
12:15:23.066 -> [WiFiEsp] Disconnecting  3
12:15:23.113 -> Channel updated with successful Values.
12:15:24.132 -> [WiFiEsp] Connecting to api.thingspeak.com
```
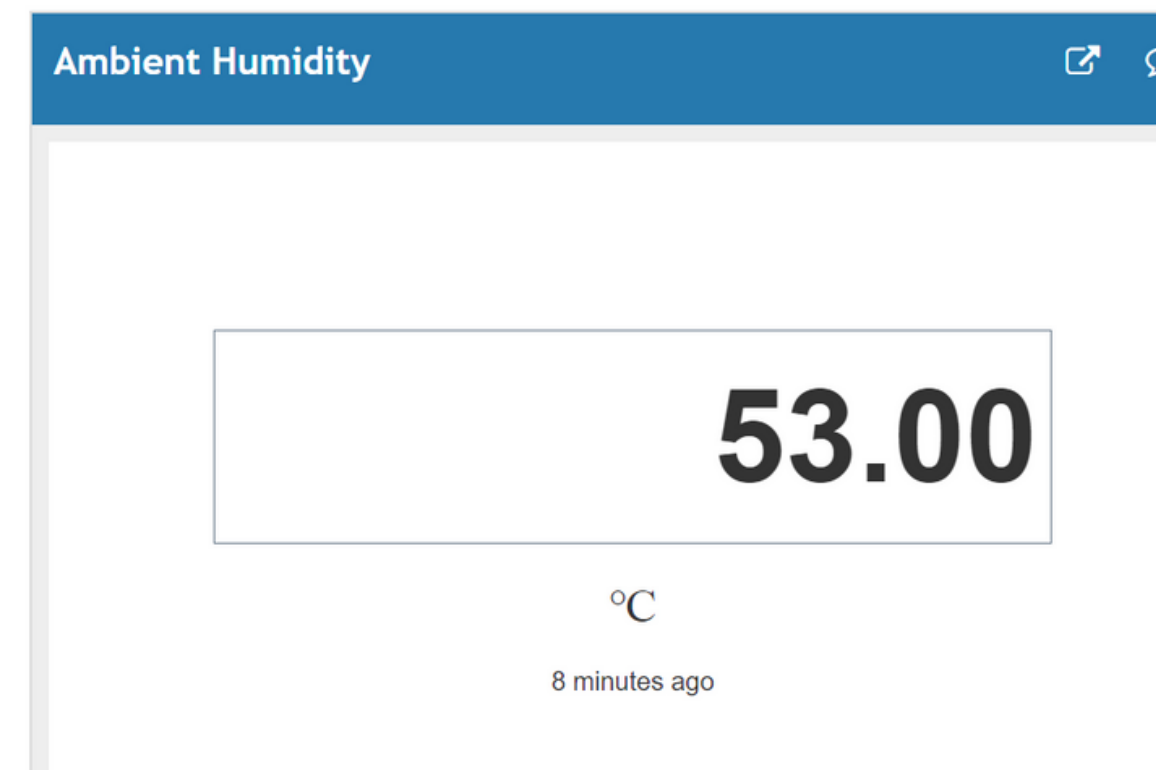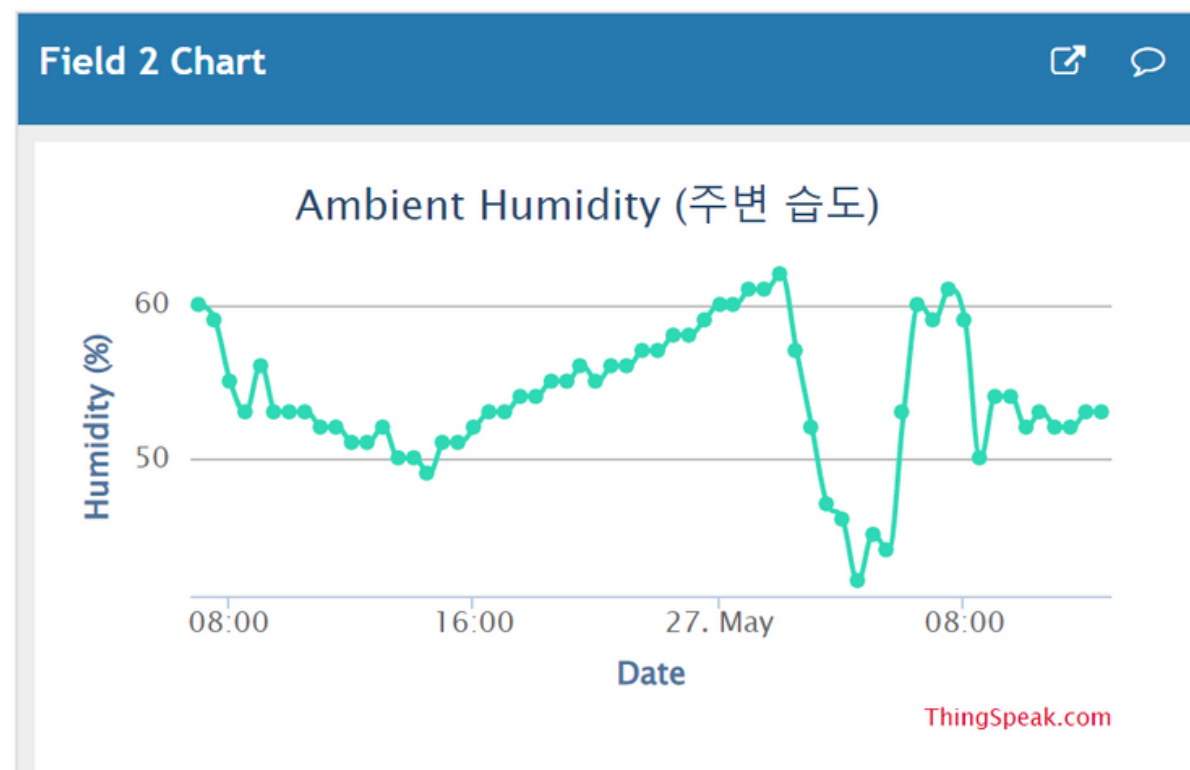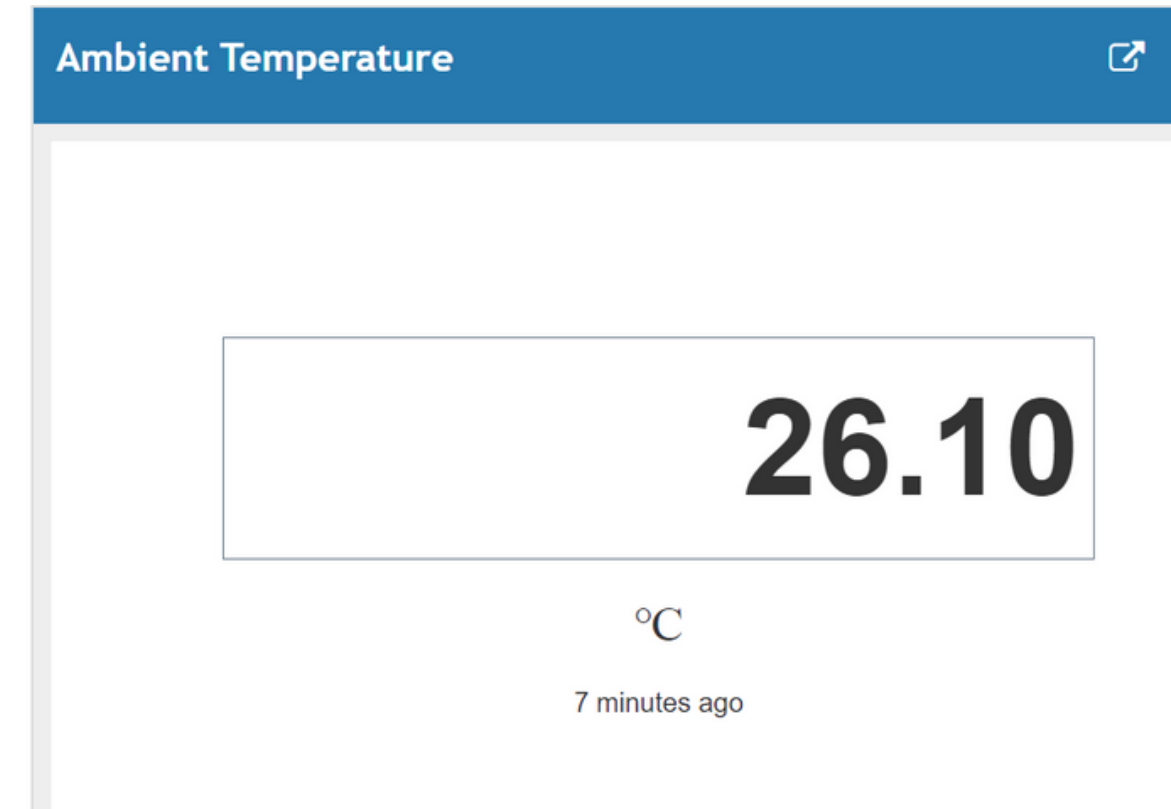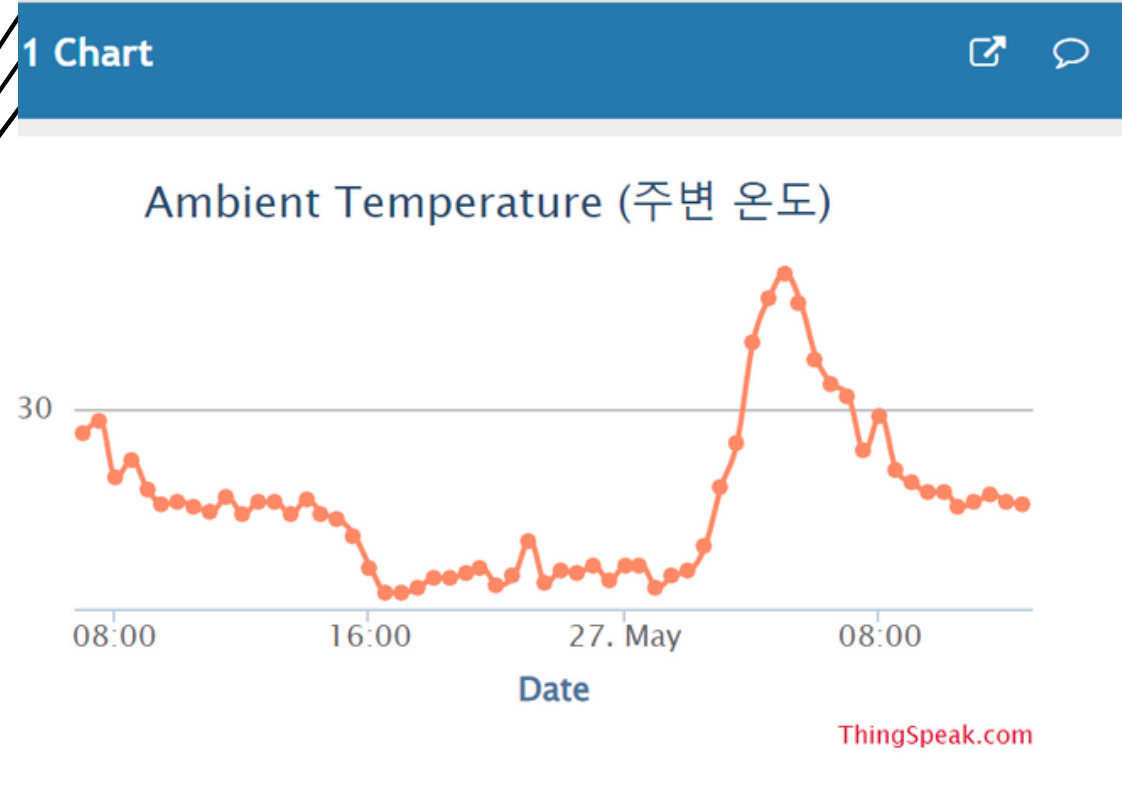
Implementations

Implementations

Receiving the data from the cloud

```
12:21:06.693 -> Reading from cloud
12:21:06.693 -> [WiFiEsp] Connecting to api.thingspeak.com
12:21:10.209 -> [WiFiEsp] Disconnecting  3
12:21:10.255 -> Read data:26.20
12:21:10.255 -> [WiFiEsp] Connecting to api.thingspeak.com
12:21:13.140 -> [WiFiEsp] Disconnecting  3
12:21:13.140 -> Read data:53.00
```
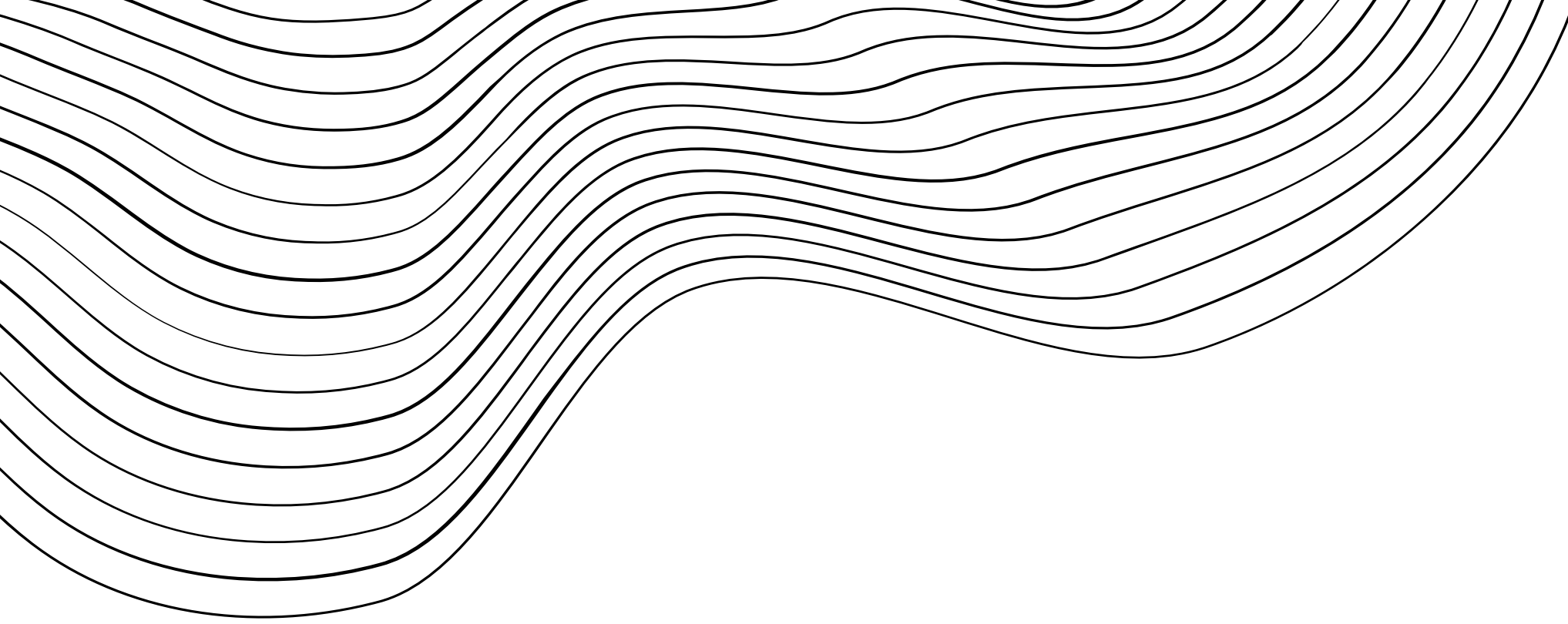
Implementations

Results

The results are derived as expected

Thank You