

# Summary

## Home Assistant - MQTT Integration Assignment

**Name:** Joshua S

**Register Number:** 42612024

**MQTT Topic Used:** home/joshuas-2025/sensor

### Extra Sensor Implementation:

I used a **Gas Level sensor** as my extra sensor. It simulates the gas concentration in the environment and is commonly used in IoT safety monitoring systems for detecting air quality or hazardous leaks.

### Steps Involved:

1. Installed Docker Desktop and used it to run Home Assistant using a docker-compose configuration.
2. Installed the Mosquitto MQTT broker as another Docker container and verified it was running on port 1883.
3. Wrote a Python script that publishes three JSON sensor values: Temperature, Humidity, and Gas Level. The script also includes my name, register number, and uses my unique topic.
4. Verified the published data using an MQTT subscriber in the terminal.
5. Configured three MQTT sensors in Home Assistant using the same topic and JSON fields.
6. Added these sensors to the dashboard and confirmed they updated live.

**Status:** Completed Successfully