CONCEPT DRAFT DOCUMENTATION

Smart Gas Leakage System

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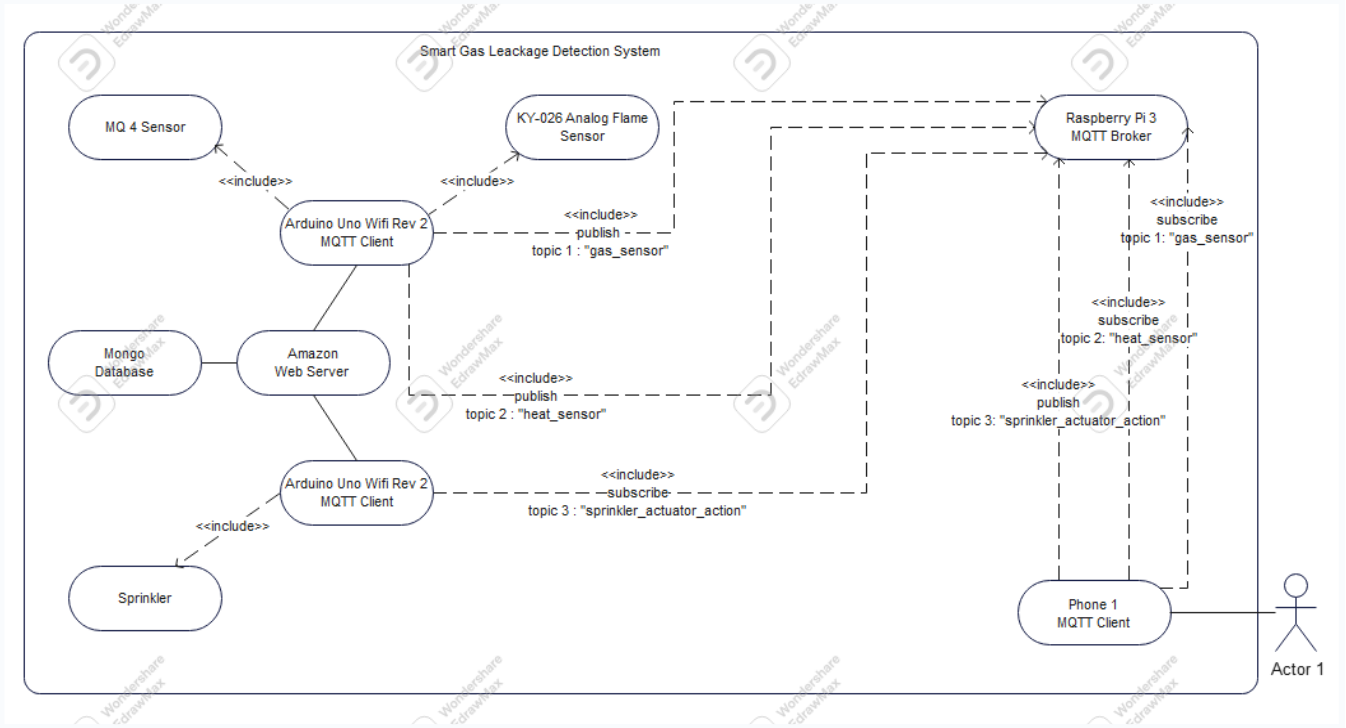
1. Block Diagram



2. Project Description

Our Smart Gas Leakage System employs a distributed system in which microprocessors and sensors/actuators are communicating through Wireless Sensor Network(WSN) techniques. To be more specific, our smart agriculture specifies the environmental constraints to a room where we can monitor the level of gas leakage and detect hints of fire by handling data from gas sensors and flame sensors. The central communication units, Raspberry Pi 3 model in our case, will function as a server where sensors and Arduino Uno work as clients, employing server-client model. This will facilitate a bi-directional link between the end-users and the physical space. Then the users can control the system either autonomously or dependently to the users by commanding appropriate execution of the actuators.

3. Use of Hardware and Software Components

<u>Hardware</u>
Arduino Uno Wifi Rev 2
Raspberry Pi 3
Sensors and Actuators
- MQ4 Methane Gas Detecting Sensor
- KY026 Analog Flame sensor
- KY019 5V Relay
- KY053 ADC
- DC motor (Simulation of Sprinkler)

<u>Software</u>
Arduino Uno IDE
MQTT Mosquitto
Python Libraries for programming Raspberry Pi for MQTT