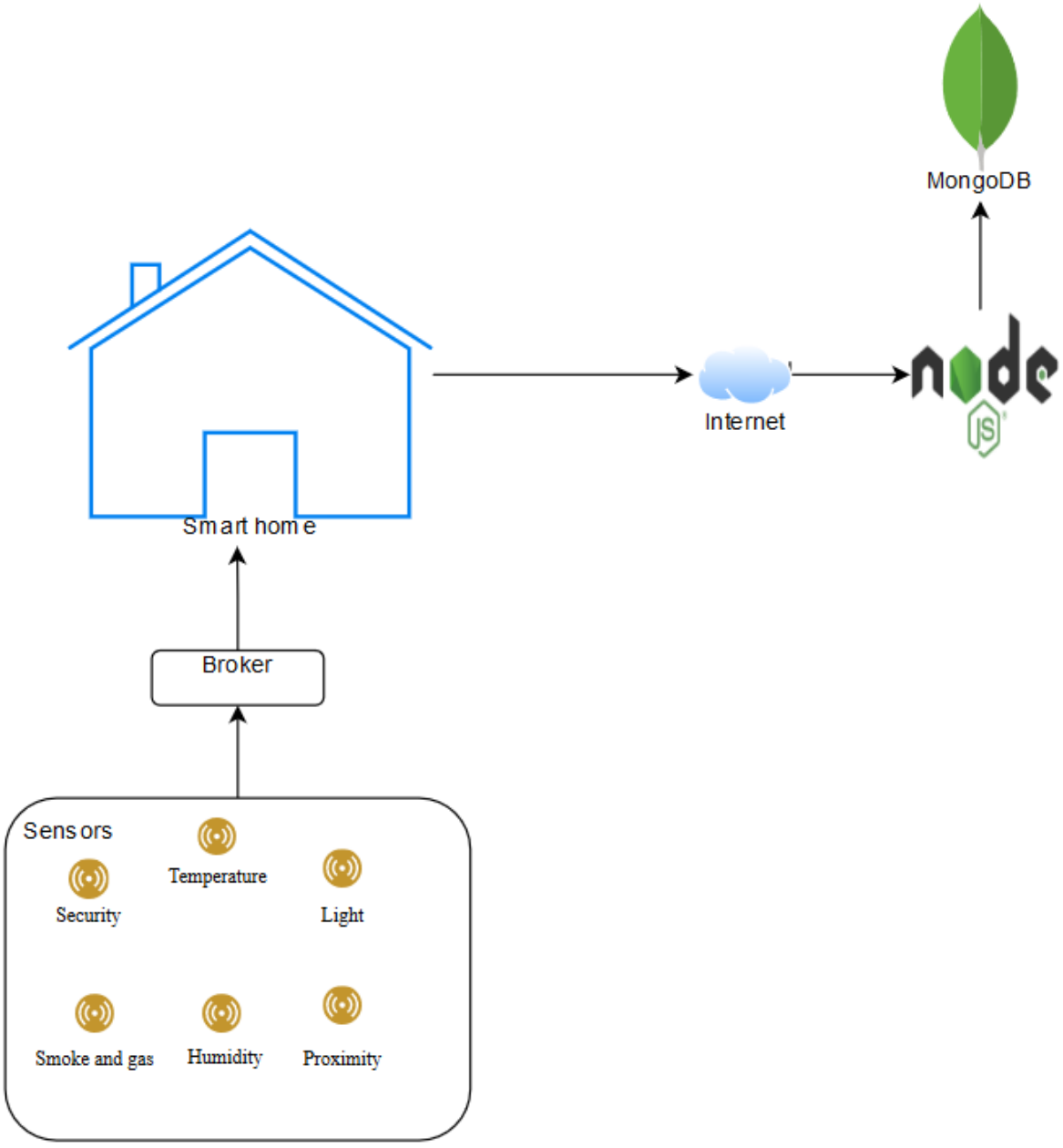
IOT scenario

IOT or Internet Of Things, is the connection and sharing between different sensors over the internet. In this assignment we have been given the task to create our own IOT scenario, with a basic design, a set of present requirements, and plan the system development of the different components, communication between the sensors.. The scenario we chose was smart home.

The smarthome will use a broker to receive data from the selected sensors described below, in addition to forwarding this data to all subscribers. All sensors have a purpose in making it easier and safer to live at home.



Sensors

Temperature
A sensor detects the temperature of the home. This can be used to adjust the temperature accordingly to what you would like it to be.

Light
A sensor detects the amount of sunlight flowing into a room, and then adjusts the dimmer of the lights to either turn up or down the light in your home.

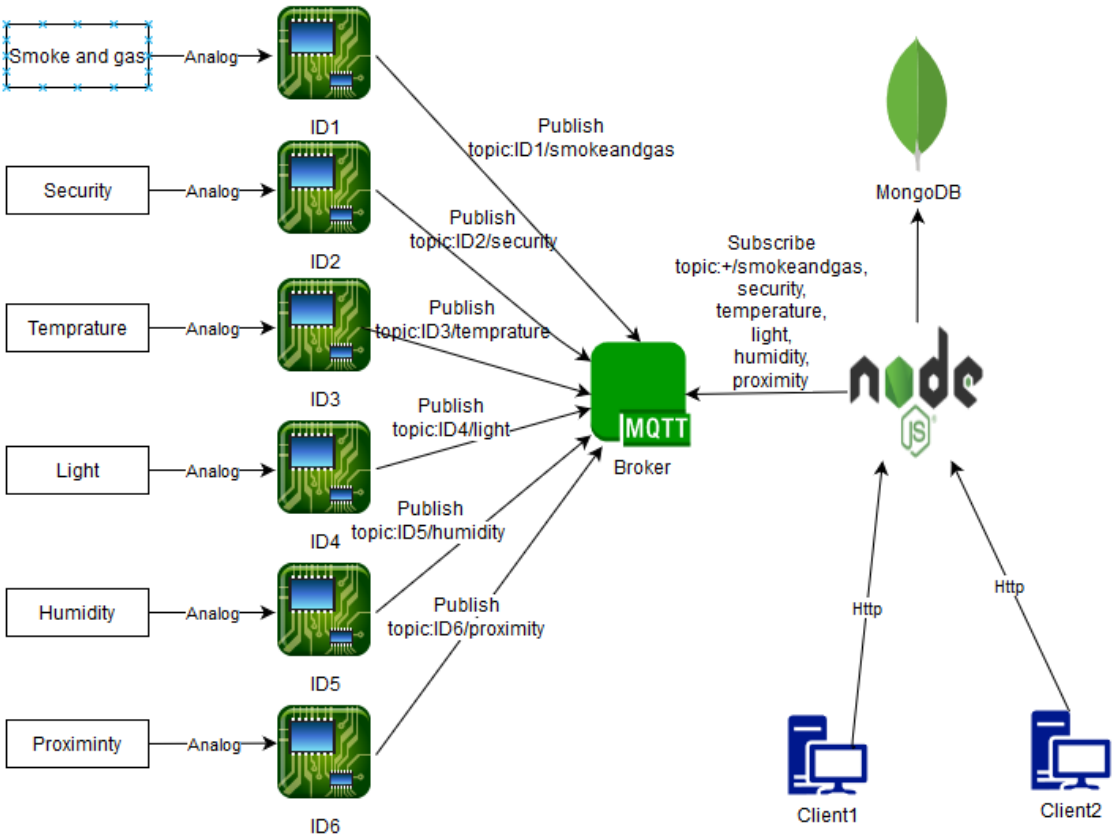
Smoke and gas
A sensor detects if there's a fire in your home, it will then turn on the fire alarm if this is detected. This could also alert the security company. The sensor also detects which room the smoke is coming from.

Humidity
A sensor detects the amount of humidity in the house. This will give the user an alert on its phone if it is outside of what is expected.

Security
The security sensor detects if there is any movement in your house. A security camera could also be put in your home where the user could be able to see if there is any movement in the house while they are on vacation or at work.

Proximity
the proximity sensor is used with the light sensor, and if any movement in the room is detected the light will then be turned on.

A picture of the connection between each sensor and the broker and subscriber has been added belowed.



The connection works by each sensor publishing their data to their broker,m and then the data would be added to the mongodb where it can be acquired by a client machine or a mobile device.

Why this sensors

These sensors have been added, because it represents some data that would be nice to have at home. It would make life easier if you could adjust the temperature automatically by a sensor detecting the heat in your home, and then either turn off/on or adjust the temperature for what you would like to have it on. The light sensor could detect if a person enters a room and then be turned on, and the security could represent cameras, which could help you keep track of movement when you're on vacation or work. All these sensors now have fictional random data, given that there is no real time data to be analyzed.

Requirements

Some requirements need to be met in order for this to work. The requirements that needs to be met is, connection to the internet, all the different sensors mentioned above, connection to a database (which in this scenario will be mongoDB). The connection to the internet is of course to be able to connect to your home from your phone or when you are not home.