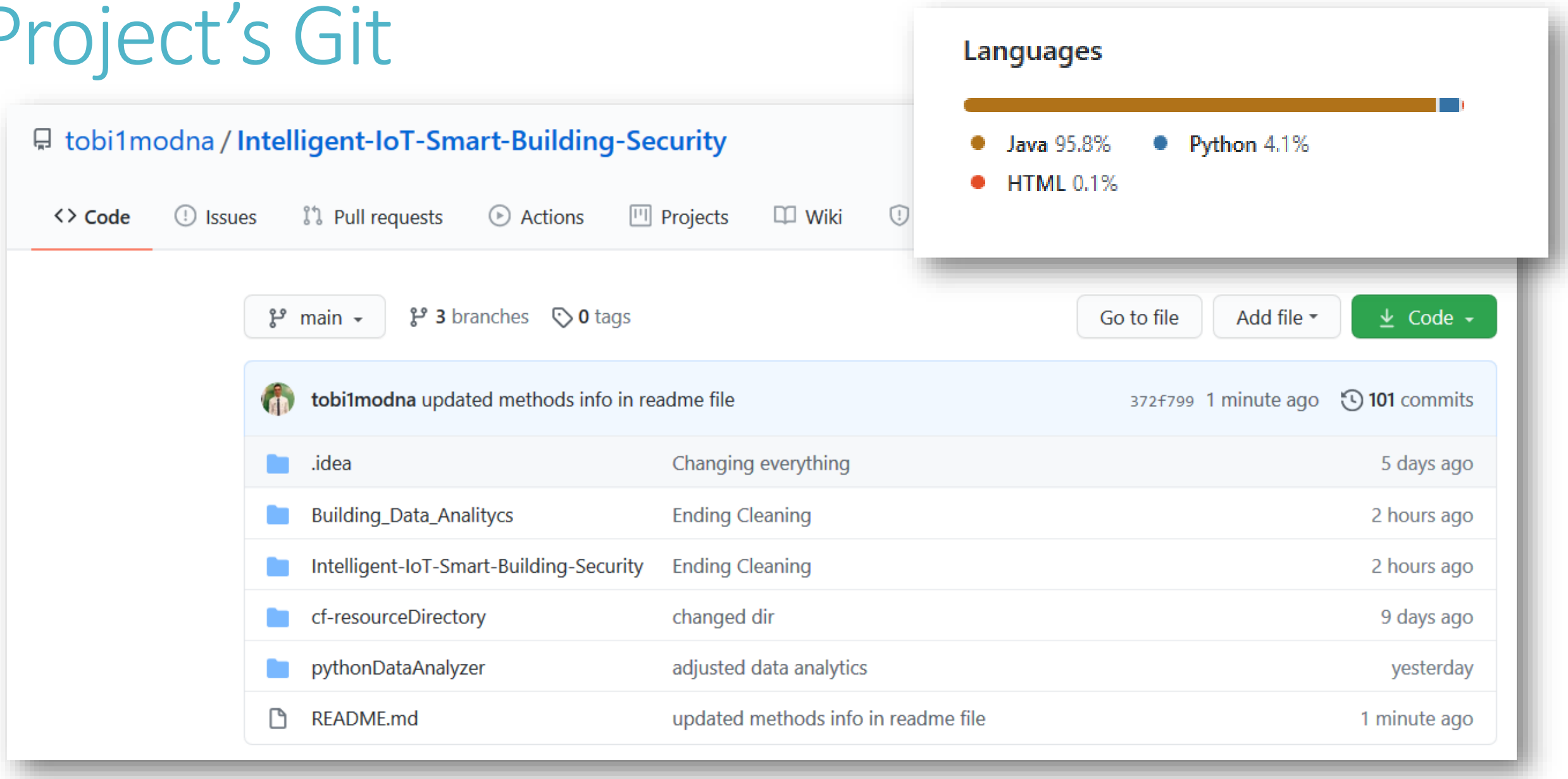
The Building Security

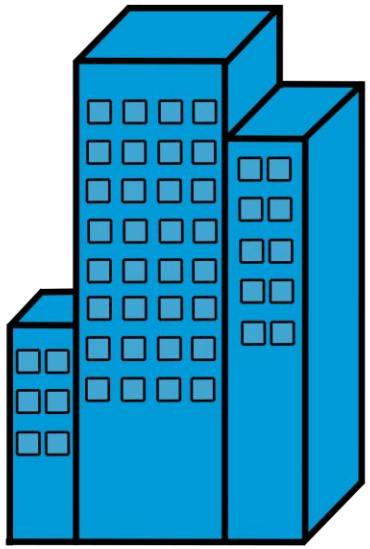
An IoT solution for Smart Building’s Security

Project's Git



https://github.com/tobi1modna/Intelligent-IoT-Smart-Building-Security

Smart Building Devices



Presence Monitoring Device

Camera Sensor

PIR Sensor

Light Device

Light Actuator

Alarm Device

Alarm Actuator

The camera sensor can measure the number of people in the room.

The PIR sensor can detect the presence of a person in the room.

Devices' Hardware

Raspberry Pi

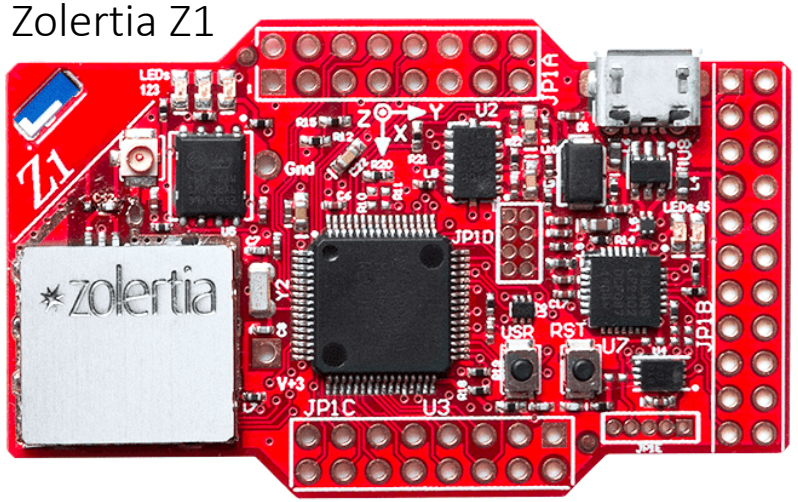
Presence Monitoring Device

Camera Sensor

PIR Sensor

← ethernet →

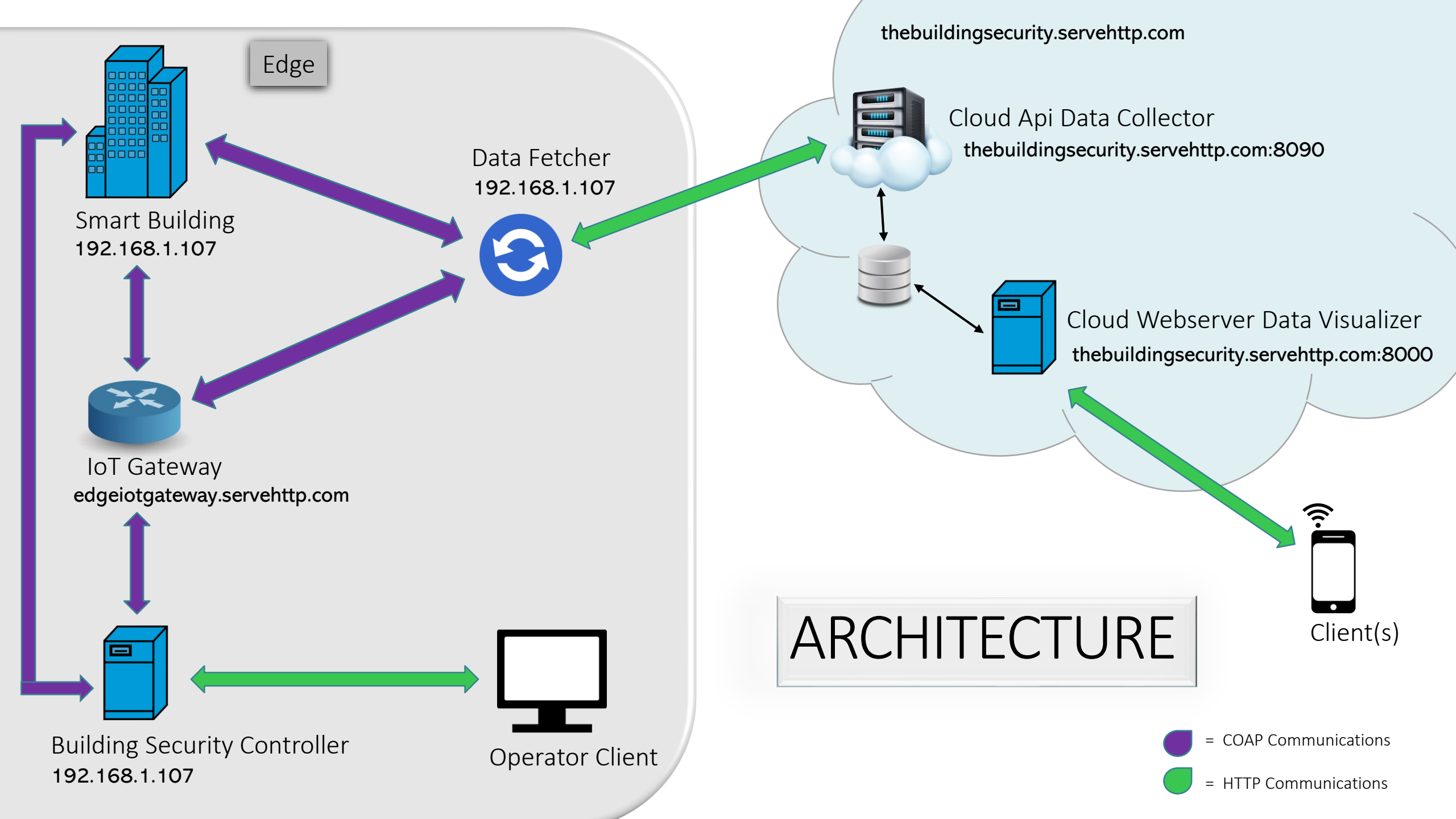
Zolertia Z1



Alarm Device

Light Device

← 802.15.4 ZigBee →


Edge
Smart Building
192.168.1.107
Data Fetcher
192.168.1.107
IoT Gateway
edgeiotgateway.servehttp.com
Building Security Controller
192.168.1.107
Operator Client
thebuildingsecurity.servehttp.com
Cloud Api Data Collector
thebuildingsecurity.servehttp.com:8090
Cloud Webserver Data Visualizer
thebuildingsecurity.servehttp.com:8000
Client(s)
ARCHITECTURE
= COAP Communications
= HTTP Communications

Resources Models

COAP RESOURCES

pir_sensor	
attribute	**type**
id	string
value	boolean
unit	string
timestamp	string

camera_sensor	
attribute	**type**
id	string
value	int
unit	string
timestamp	string

alarm_actuator	
attribute	**type**
id	string
value	boolean
unit	string
timestamp	string

light_actuator	
attribute	**type**
id	string
value	boolean
unit	string
timestamp	string

HTTP RESOURCES

policy	
attribute	**type**
policy_id	string
area_id	string
is_enabled	boolean
presence_mode	boolean
start_working_time	string
end_working_time	string
max_persons	int

user	
attribute	**type**
username	string
password	string
role	string
email	string

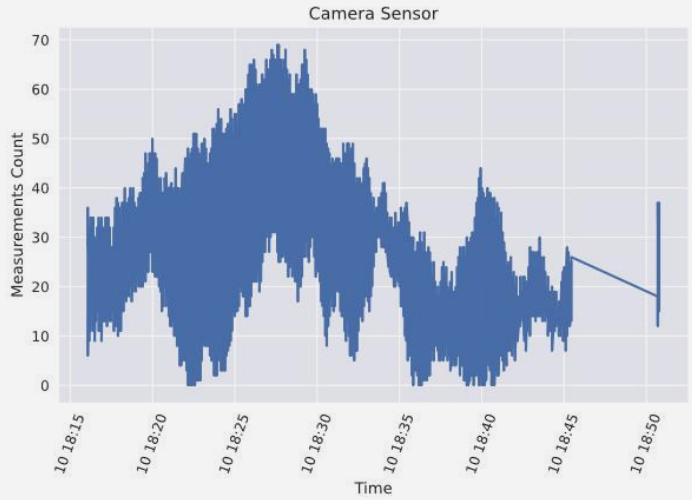
area	
attribute	**type**
area_id	string
area_name	string
floor_id	string
device_id_list	list<string>

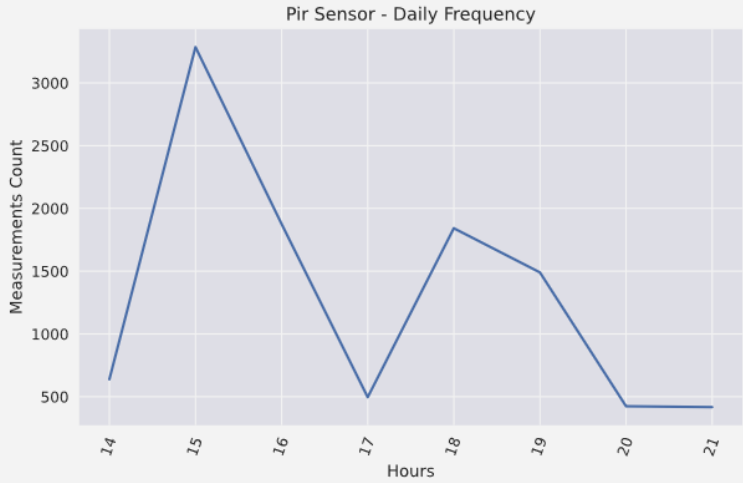
floor	
attribute	**type**
floor_id	string

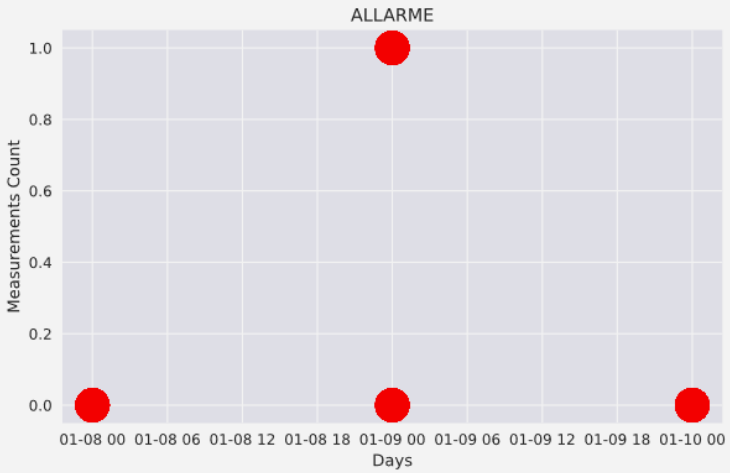
generic_device	
attribute	**type**
area_id	string
device_id	string
resource_type_list	list<string>

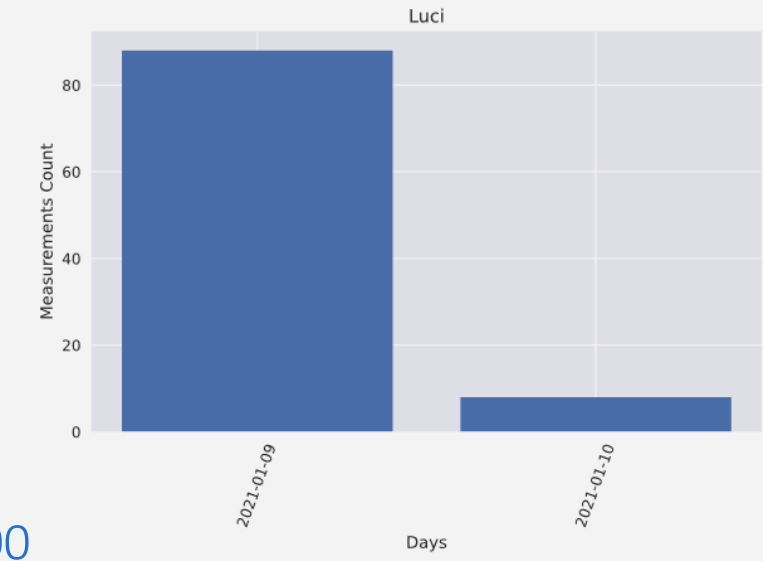
resource	
attribute	**type**
resource_id	string
device_id	string
manufacturer	string
type	string
coreInterface	string

Data Visualization









https://thebuildingsecurity.servehttp.com:8000

Thanks

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Andrea Zaniboni

UNIMORE

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MODENA E REGGIO EMILIA