IES - Home Monitor

Project title:

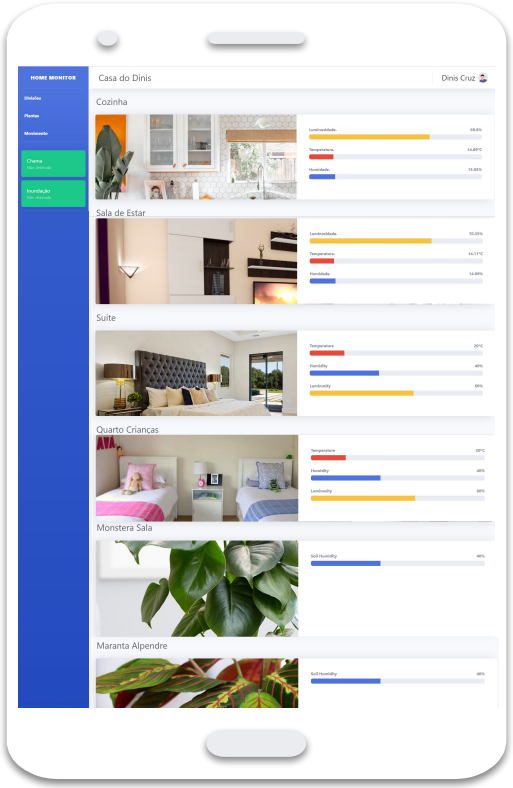
Home Monitor application to a user monitoring his house

Group:

Dinis Cruz, Duarte Mortágua, Lucas Sousa and Tiago Oliveira

Lab:

P3



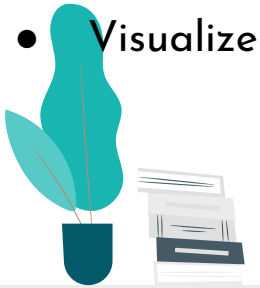
PROJECT TEAM

- Team manager - Duarte Mortágua - duarte.ntm@ua.pt
- Product owner - Tiago Oliveira - tiago.srv.oliveira@ua.pt
- Architect - Dinis Cruz - cruzdinis@ua.pt
- DevOps - Lucas Sousa - joselmbdsousa@ua.pt
- Developers - The whole team

PROJECT OBJECTIVES

Goals

- An integrated platform to monitor and control light presence, temperature, humidity, movement, water level and flame presence in your house
- Visualize Sensor Data



Benefits

- Portable because it can be accessed through your tablet or smartphone
- Practical as you will be able to track what is happening in your home without being there

PERSONA and USER STORIES

Persona Home monitor user

Fictional Name João

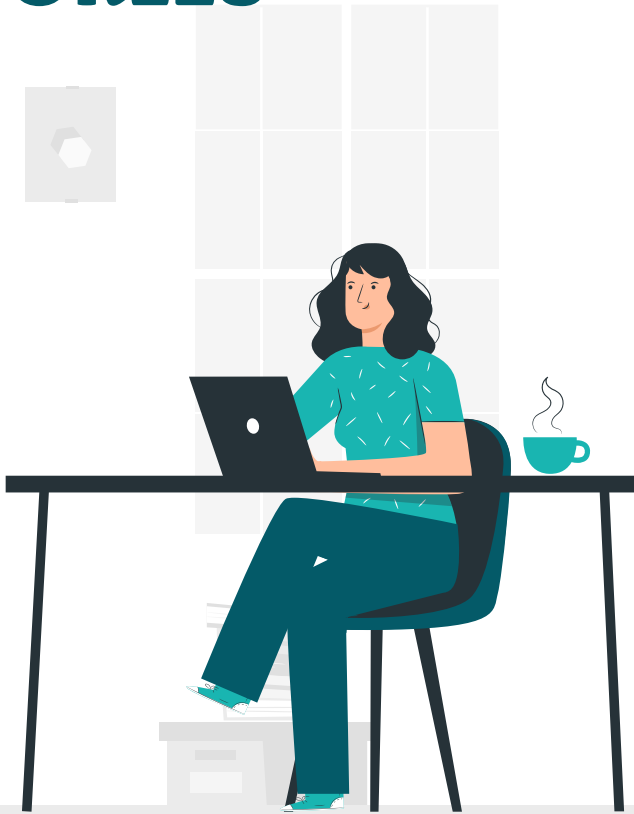
Job Title Security Engineer

User stories

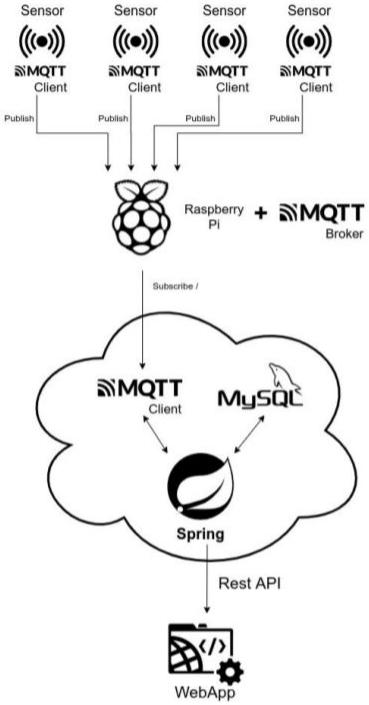
- Check movement presence in his house
- Check flame presence in his house
- Check temperature and humidity in a room
- Check if there is a flood going on
- Check if there is lights on in a room

Demographics

- 28 years old
- Married



PROJECTS' BASE ARCHITECTURE



PLATFORMS USED

Spring Boot
Integrated development environment spring boot

Docker
Application Execution

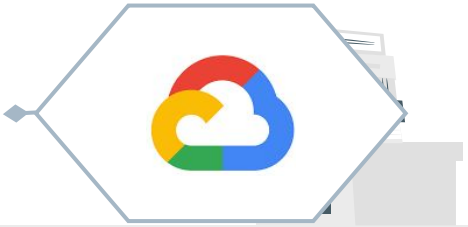
Mqtt broker
Mqtt broker for messaging transport

Mysql
Database Management System

Node js
JS RE for frontend

Github
Project version management & Kanban Board

Google Cloud
Application Deployment



SENSORS

Fig1: Humidity

Fig2: Movement

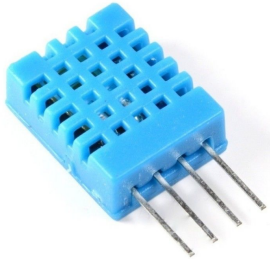


Fig3: Temperature

Fig4: Flame

Fig5: Water level

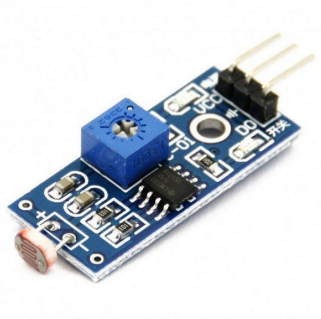
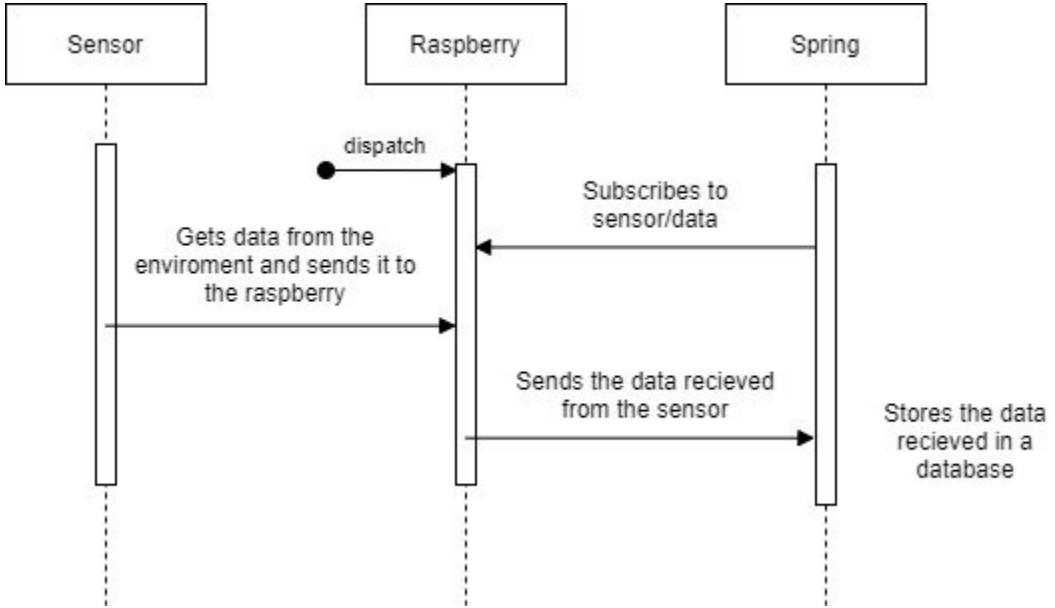


Fig6: Luminosity

Message Processing



API and its endpoints

/user/{userId}/sensors

/user/{userId}/sensors/type/{type}

/user/{userId}/sensors/room/{room}

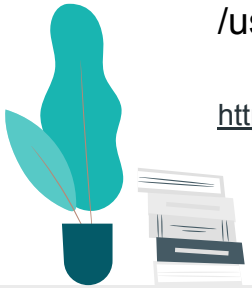
/user/{userId}/values

/user/{userId}/values/{sensorId}

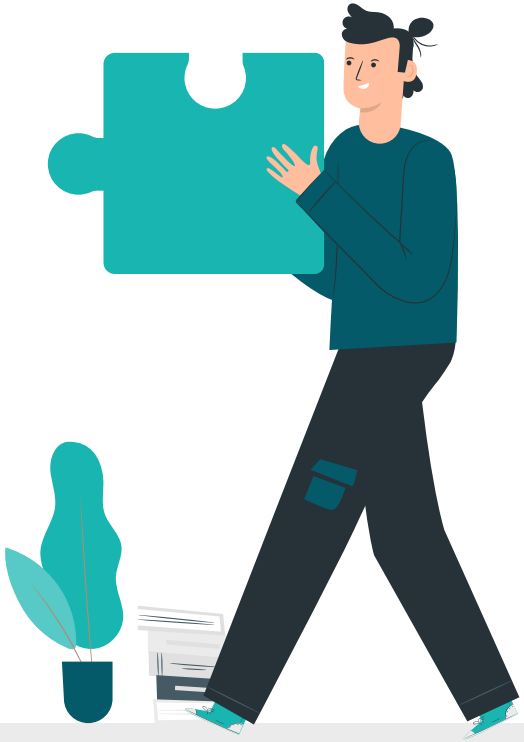
/user/{userId}/values/{sensorId}/last/{num}

/user/{userId}/values/{sensorId}/period/{numHours}

https://app.swaggerhub.com/apis-docs/d2987/homemonitor/1.0.0



FUTURE WORK



Scaling

Handle the backend endpoint bottleneck

Manager implementation

Having a super user (admin) that would control each client with a different view of the web page.

Sensor Store

Users could add/remove the sensors they want

Production CI/CD Pipeline

Implement an automated development pipeline

RESOURCES

Project Repository

GitHub Repository:
https://github.com/l-sousa/ies-home-automation

API Documentation

https://app.swaggerhub.com/apis-docs/d2987/homemonitor/1.0.0

Website

http://35.246.39.11/

Live Demo

QUESTIONS?