IES Project - Smartive

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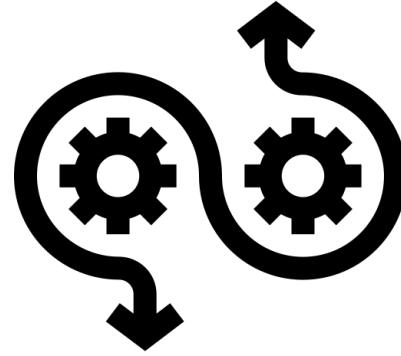José Trigo 98597
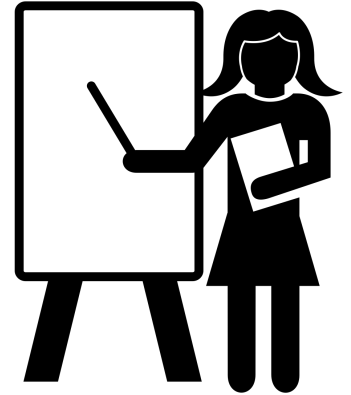Gonçalo Machado 98359

Development Team

Gonçalo Machado
Team Manager

Hugo Gonçalves
Architect

José Trigo
Dev Ops

Daniela Dias
Product Owner

The Product

Our product, Smartive, is a system with the objective of connecting and controlling all electronic/IOT smart devices in a house.

With Smartive, the user will be able to:

- Connect devices (and sensors);
- Control devices by setting up triggers;
- View triggers currently active;
- Group devices by rooms;
- See statistics of devices or rooms (e.g energy used);
- Check history for performed actions;

User Stories - Frank Washington

A middle aged man who lives with his family and wants to have control of the devices in his house

Frank lives in the suburbs with his wife and child. His wife works from home and his kid spends all his free time playing video games, so they spend a lot of electricity and other resources.

Since Frank likes to have a good control over his finances, he utilizes the Smartive app to check how many resources were spent and where.

Frank wants his wife and kid to also be able to control the devices at home.

So, his wife and kid create an account in the Smartive app, and Frank shares his account with them, giving them access to the devices in each room.

User Stories - Isabelle Mendez

A business woman living alone in the city and with few time to spend at home

Isabelle lives alone in her apartment in a big city in the northern area of her country, where it's cold most of the year.

As such, she bought a heater for her house. In order to not spend a lot of electricity, yet to not get cold, Isabelle used the Smartive app to get notifications whenever the temperature was not between 15ºC and 22ºC.

Isabelle has a very busy work schedule, so she does not spend much time at home.

In order to have all her devices the way she wants by the time she gets home, she uses the Smartive app to connect all the devices and control them from wherever she wants, by scheduling all kinds of events.

Architecture
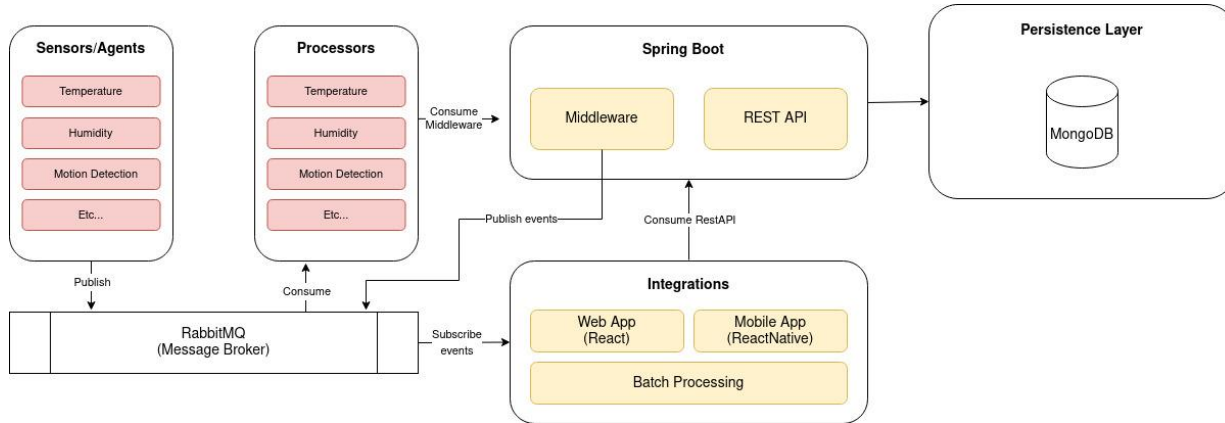
Database

mongoDB®

Our database is built using MongoDB, a NoSQL document oriented database.

This database was chosen since it allows for documents in the same collection to have different parameters, for example, a humidity sensor and a television.

The database is used to save users, rooms data, events and devices data.

RabbitMQ

RabbitMQ is a lightweight open source message broker that is used to deliver messages safely between applications.

We use RabbitMQ to send data from the data generators to the data processors, and to send notifications from our middleware to the front-end.
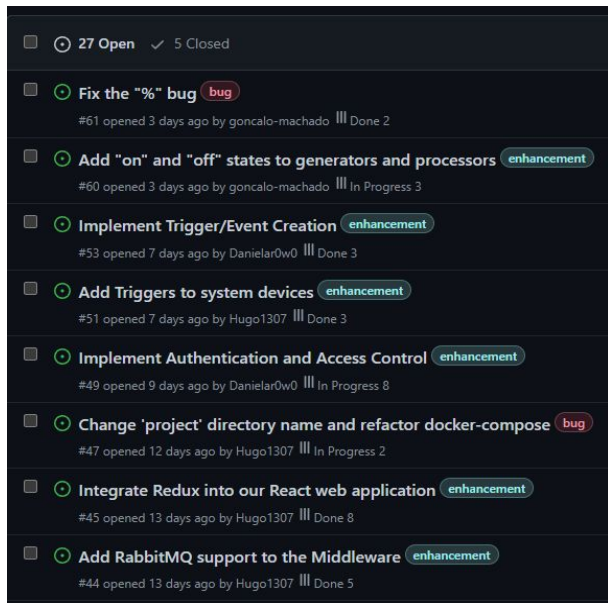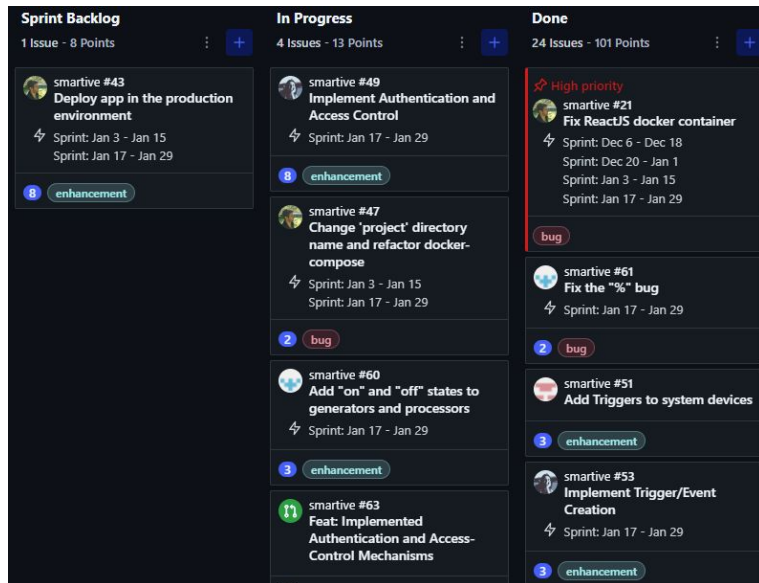
Deployment

In order to be able to have our app working in every device no matter what configuration or operating system is used, we use Docker to containerize every single aspect of our application, from the database, to the data generation, the middleware, the API and the front end.
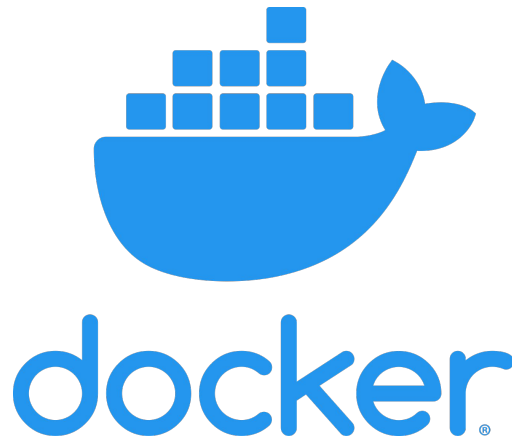
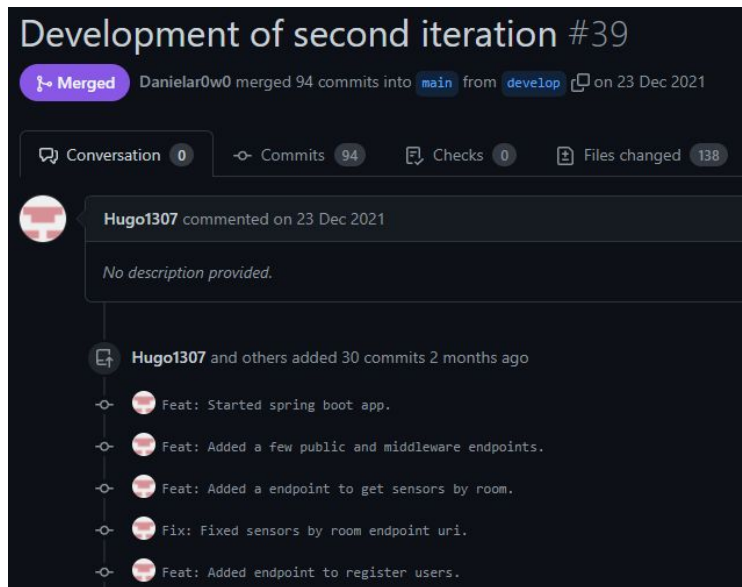# Work Organization

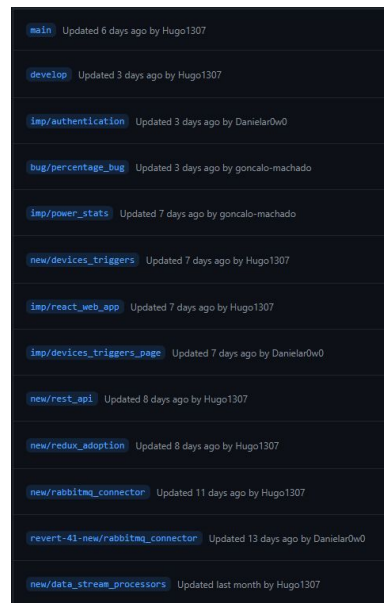

Issues to track work

Scrum board to manage tasks in each sprint

Work Organization

Pull Requests for version control

Feature branches for each different task

Demo

Future Implementations

- Add a mechanism to group devices together
- Add scheduled events (Example: Turn AC on every day at 20:00)
- Improve statistics page
- Finish home share feature
- Increase app security