S.E.B.

Smart Environment Bot

Mobile and cyber-physical systems

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PROBLEM

PROBLEM TO SOLVE

The current HACCP regulations impose on every retailer the obligation to keep an updated daily register of temperatures for cold rooms that store foodstuffs.

The non-compliance of that rule leads to a considerable fine.

Moreover, what if a cold room stops working?

SOLUTION

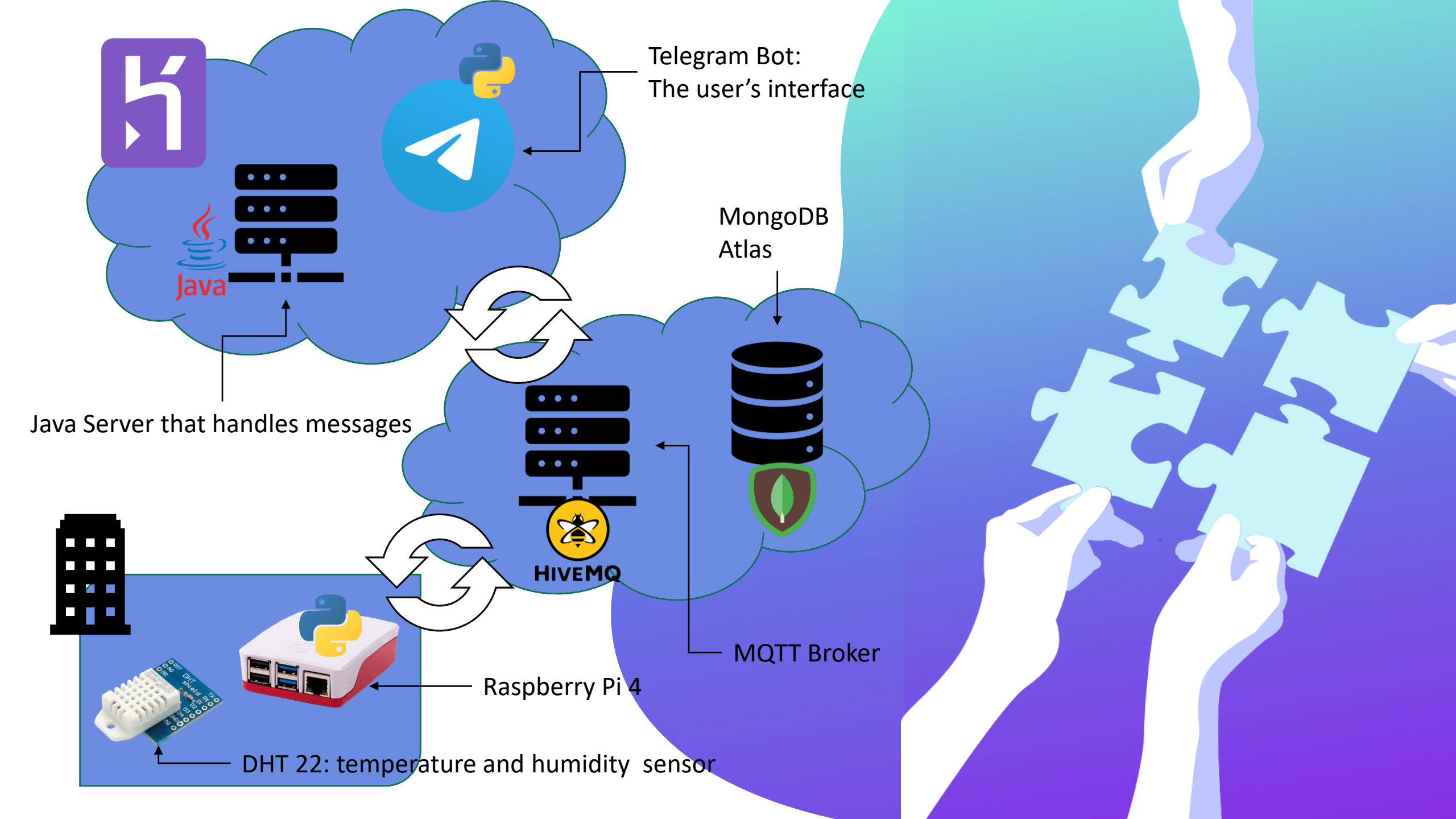
THE SOLUTION FEATURES

EFFICIENT

EASY TO USE

PORTABLE

ARCHITECTURE

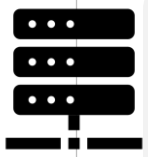

Telegram Bot:
The user's interface
MongoDB
Atlas
Java
Java Server that handles messages
HIVEMQ
MQTT Broker
Raspberry Pi 4
DHT 22: temperature and humidity sensor

FUNCTIONING

HOW DOES IT WORK?

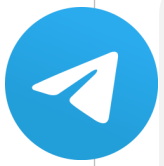
A customer owns many Raspberry and sensors:

- Each sensor publishes and subscribes a topic.



The server receives data from the broker:

- Stores them in the DB;
- Eventually sends an alert.



The Telegram bot:

- provides, through commands, the data concerning the relevations provided by the sensors.

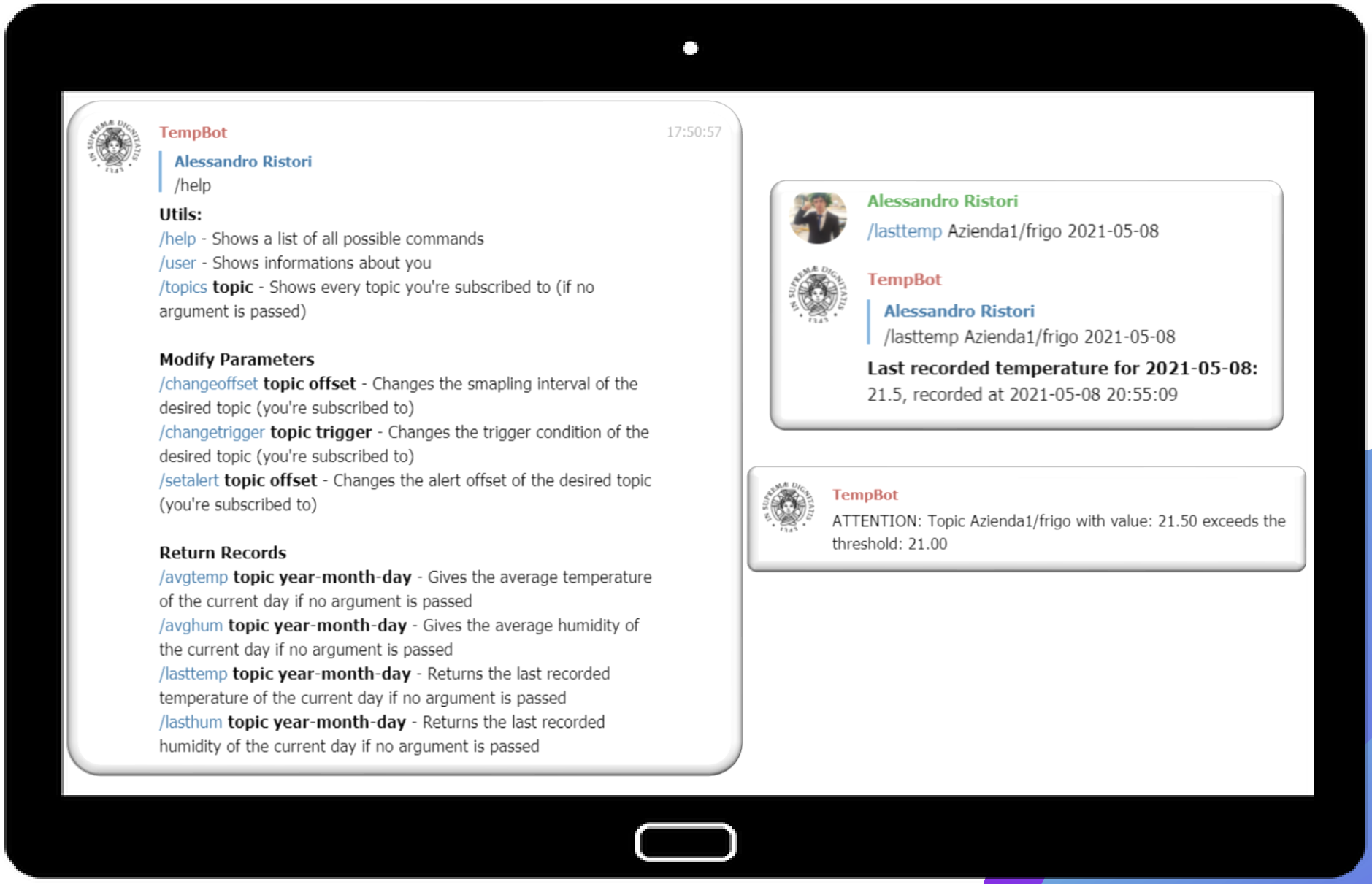
WHAT ABOUT ENERGY EFFICIENCY?

- Raspberry OS doesn’t support suspension or hibernation mode;

- The only way to save energy is to let the sensor sleep after it sends the relevation or…

- Use more appropriate type of devices that can minimize the duty cycle

USER'S SIDE: TELEGRAM BOT



DEMO

WHAT WE WILL SHOW

A common use case

An alert

Some customization

by the user

FUTURE WORK

WE CAN DO BETTER

- Expanding our customer range;
- App for a better management;
- Multiple field of use, from home to business;
- Virtual assistant integration.

QUESTIONS??

Are you curious about how we implemented this project?

nikodallanoce/MCPS (github.com)
nikodallanoce/MQTTServer (github.com)
RistoAle97/BotTelegramMCPS (github.com)

Grazie