

# IES - Introdução a Engenharia de Software

## Iteration 1 - Prototype & Project Initialization



Lucius Vinicius - 96123

Diogo Monteiro - 97606

Camila Fonseca - 97880

Tomé Carvalho - 97939

# Index

<b>Index</b>	<b>2</b>
<b>The Team and roles</b>	<b>3</b>
<b>Project Requirements</b>	<b>3</b>
General	3
Alerts for the Café (Via Message Queue)	4
<b>Implementation/Design</b>	<b>4</b>
Stories	4
<b>Architect Notebook</b>	<b>6</b>
Diagram	6
Structure Elements	6
Technologies	7

# The Team and roles

Role	Member
Team Manager (coordinator)	Tomé Carvalho
Product Owner	Diogo Monteiro
Architect	Lucius Vinicius
DevOps Master	Camila Fonseca
Developer	All

## Project Requirements

### General

- **Log** when users log-in and log-out, on which computer and when.
- **Show** user access history and details
  - Machines logged into
  - Software used
  - Purchase history
- **Monitor** each machine regularly: power consumption, uptime, internet traffic, cpu, ram, disk, network usage, running software
- **Show** all active users/machines
- **Show** overall hardware usage over time
- **Assess** software trends
- Maintenance **logs**
- **Monitor** room characteristics: temperature, humidity, light level (pretend lights are automatic)
- **Keep records** of what customers order, and when.
- **Assess** food sales trends
- Profit margin **history**
- **Log** application operations, such as batch processing
- Data consulting should be fast and readily available

## Alerts for the Café (Via Message Queue)

- Emergency indicators on **abnormal** behaviors - per machine and global:
  - High power consumption
  - High internet traffic (down/up)
  - Abnormal internet traffic (compromised network)
  - Attempts to access suspicious/blocked websites
  - Abnormal temps and humidity values
- Alert when a (specific) machine is available.

## Implementation/Design

- Show which machines are currently being used, by whom and what for and which ones are free
- Historical usage of a machine (via graphs)

## Stories

**As a** net cafe manager,

**I want** to know what computers are currently being used and what computers are available  
**so that** I can gauge how busy a location is.

**As a** net cafe manager,

**I want** to be notified when a machine or location needs attention  
**so that** I can take action when needed.

**As a** net cafe manager,

**I want** to see a location's and its machines' statistics over time  
**so that** I can assess how a location is doing and better manage it, such as cutting back on machines or expanding.

**As a** business analyst,

**I want** to see users' machine and software usage statistics  
**so that** I can see what's most profitable and come up with targeted promotions.

**As an** IT technician,

**I want** to see a machine's usage details on a specific timeframe

**so that** I can better know how to perform maintenance.

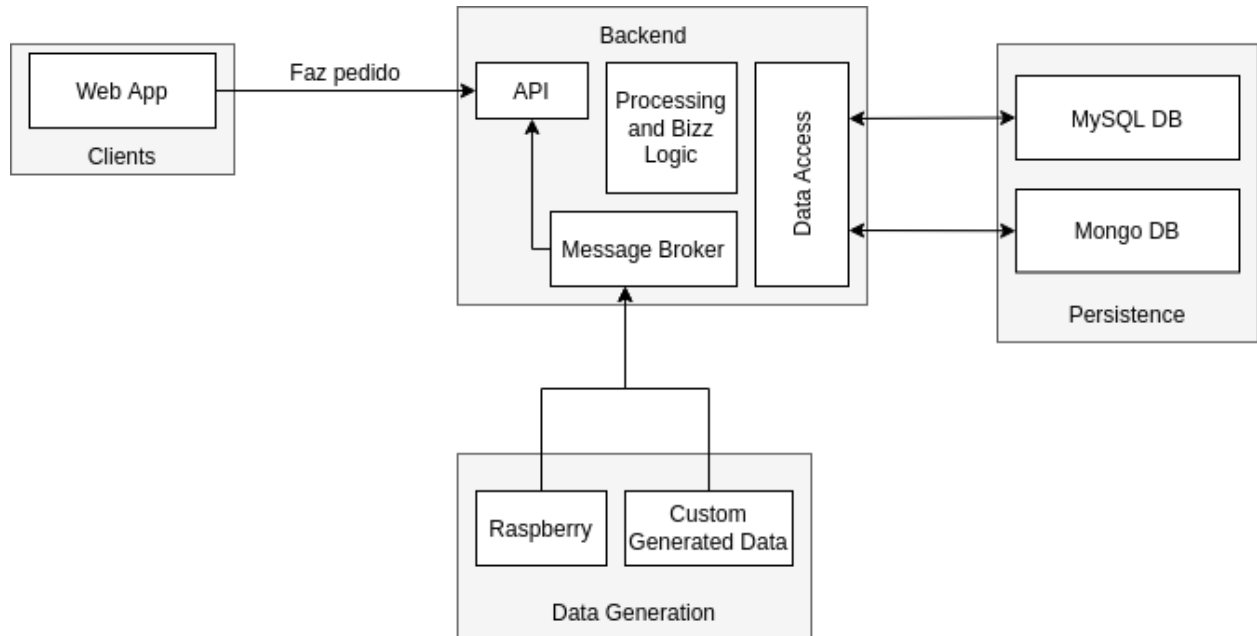
**As a** net cafe manager,

**I want** to see details about the users

**so that** I can acquire information about them (such as contact information) if need be

# Architect Notebook

## Diagram



## Structure Elements

- **Web App** → Application that connects with the end-user and allows him to make his necessary operations.
- **Spring Boot** → Java Application responsible for providing the API for the web application. Also, it'll be responsible for the logic operation of the data.
- **Message Broker** → Connects the Generated / Raspberry data to the backend through RabbitMQ.
- **Data Access** → Java Drivers to connect to databases.
- **Raspberry** → Sensor for generating data.
- **Custom Data Generation** → Python script to generate some "random" data.
- **MySQL Database** → Database for operational requests
- **Mongo Database** → Database more specialized in aggregation requests.

## Technologies

- Web app → Javascript - ReactJS
- Message Broker → RabbitMQ. PIKA client for Python and AMQP-Client for Java.
- Bizz Logic and API → Java - Spring Boot
- Data generation → Python
- Persistence → MySQL Database for operational requests and Mongo Database for most of the aggregation requests.