universidade
de aveiro

5th June, 2025

TQS Project Presentation

WashNow

Presentation by
Ricardo - Team Leader
Rodrigo - QA Engineer
André - Product Owner
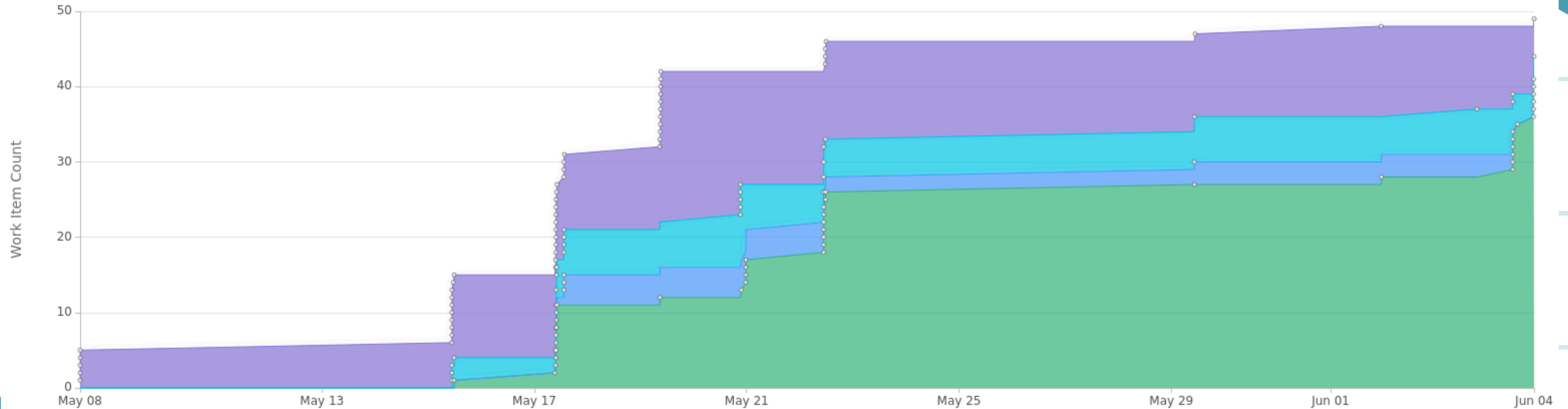**Pedro - DevOps**

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Product Concept

- Solve waiting lines and trips to unavailable stations

- Map of car washes with real-time availability

- Book slots, unlock jet-wash, pay online

- Operator page for managing bays

- Monitoring of water and energy usage

- Admin page for Colletion and display of system metrics

Development Roadmap

- Weekly sprints aligned with class iterations

- Tasks and epics managed in JIRA

- Iterative delivery of backend, frontend, and tests
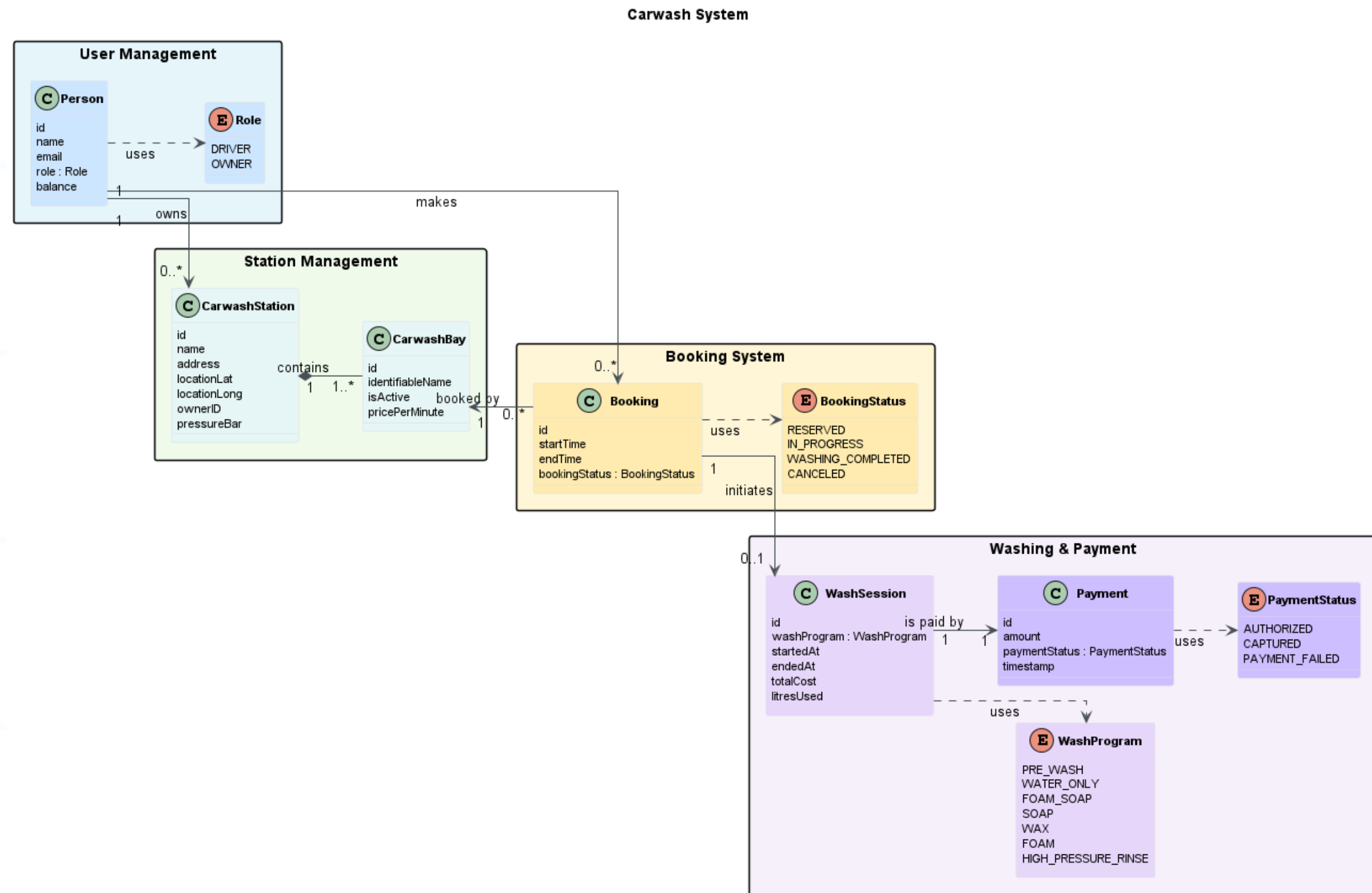
- Final MVP deployed with full monitoring
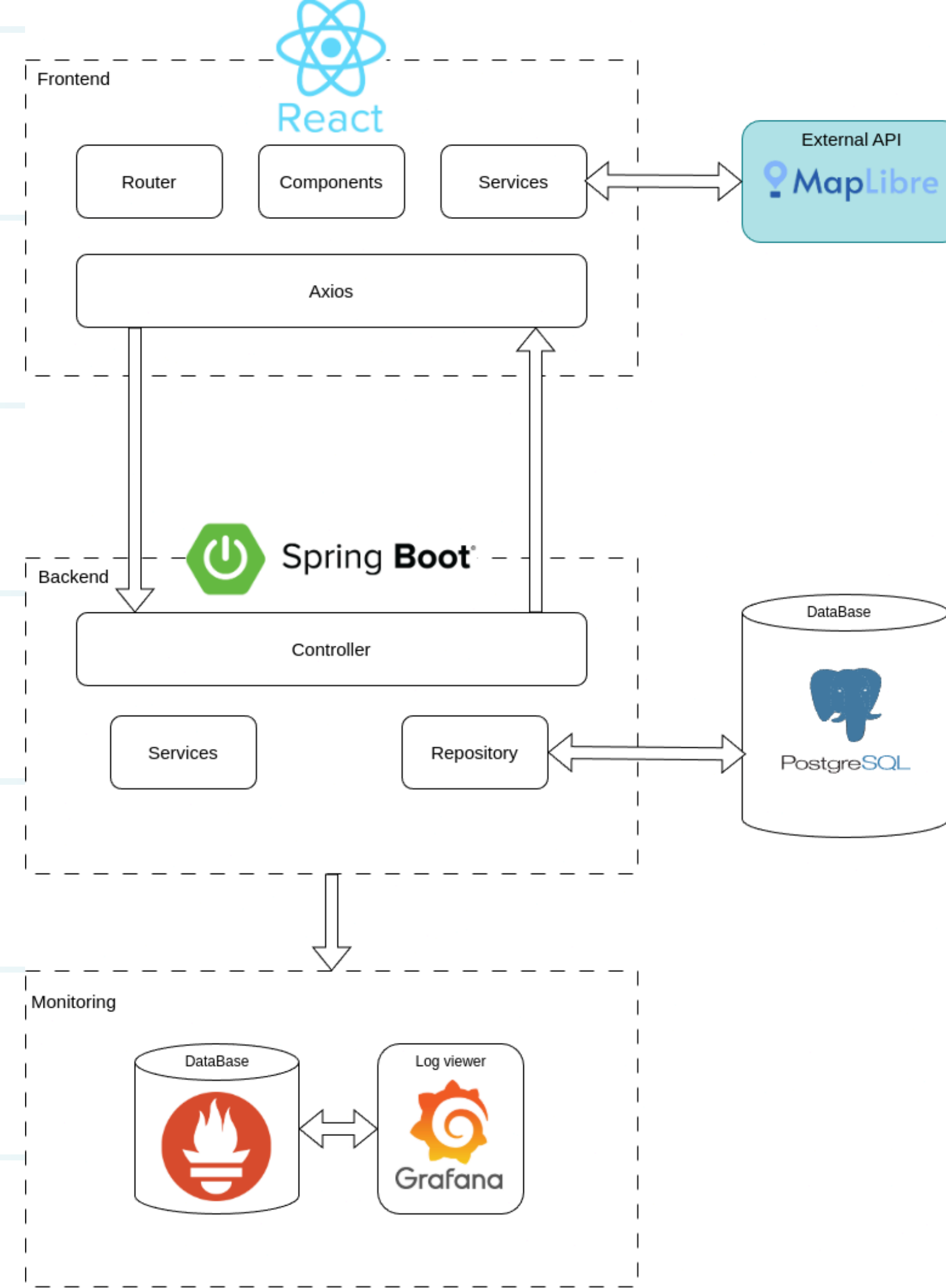
Development Roadmap

Main implemented epics

- Car Wash Station Map

- Booking System

- User profiles

- Mock Payments

Carwash System

User Management

C Person
id
name
email
role : Role
balance

E Role
DRIVER
OWNER

uses

Station Management

C CarwashStation
id
name
address
locationLat
locationLong
ownerID
pressureBar

C CarwashBay
id
identifiableName
isActive
pricePerMinute

contains

owns

makes

Booking System

C Booking
id
startTime
endTime
bookingStatus : BookingStatus

E BookingStatus
RESERVED
IN_PROGRESS
WASHING_COMPLETED
CANCELED

uses

booked by

initiates

Washing & Payment

C WashSession
id
washProgram : WashProgram
startedAt
endedAt
totalCost
litresUsed

is paid by

C Payment
id
amount
paymentStatus : PaymentStatus
timestamp

uses

E PaymentStatus
AUTHORIZED
CAPTURED
PAYMENT_FAILED

uses

E WashProgram
PRE_WASH
WATER_ONLY
FOAM_SOAP
SOAP
WAX
FOAM
HIGH_PRESSURE_RINSE

Architecture

- Services inside of Docker containers

- Spring Boot backend, React frontend

- PostgreSQL database

- Prometheus + Grafana for monitoring

- External APIs: Maps and Payment

  gateways

Development Pipeline

- Stories in JIRA → feature branches

- Pull requests with code reviews

- GitHub Actions: build + test + deploy

- Quality checks with SonarCloud

- Auto-deploy to staging → production
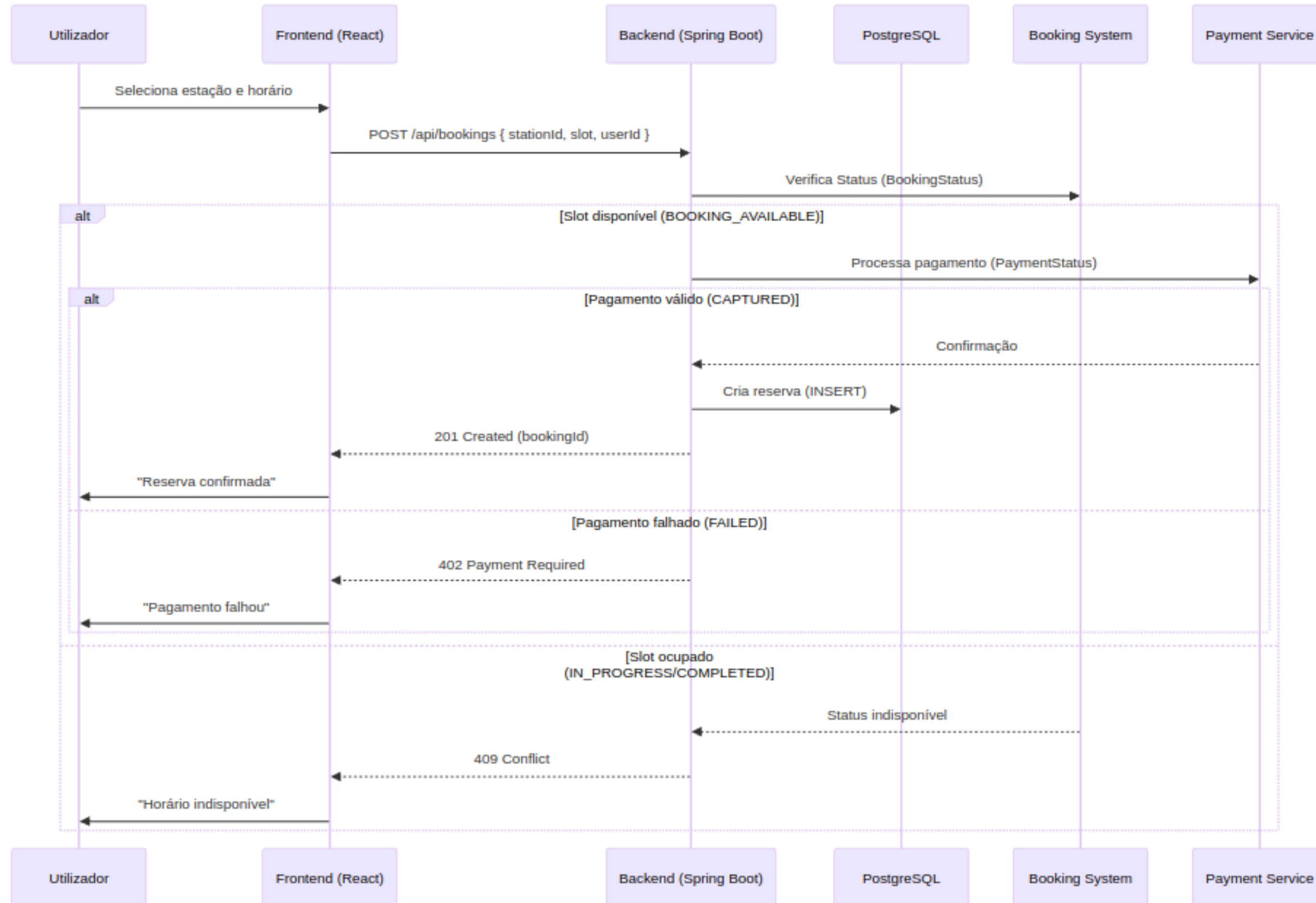
- Live monitoring via Prometheus + Grafana

Quality Assurance Stack

- Unit tests with JUnit + Mockito

- E2E flows with RestAssured + Selenium

- K6 for load, stress, spike, soak, breakpoint tests

- Tests linked to acceptance criteria (ATDD)

- Xray for requirement coverage tracking

Product Tour

- User flow: sign up/sign in → book → pay → see history

- Owner flow: create/manage stations + stats

- Real-time system metrics via Grafana

- All tested live using Selenium automation

Reservation Workflow

Project self-review

Plus	Minus	Interesting
Strong CI/CD	Lack of time	Used K6 for the PI project
High test coverage	Some Bugs / Inconsistences	Start using tests when writing code
Grafana Dashboards	Connecting all of the containers and have them work together	Learned reusable QA practices
..	..	..