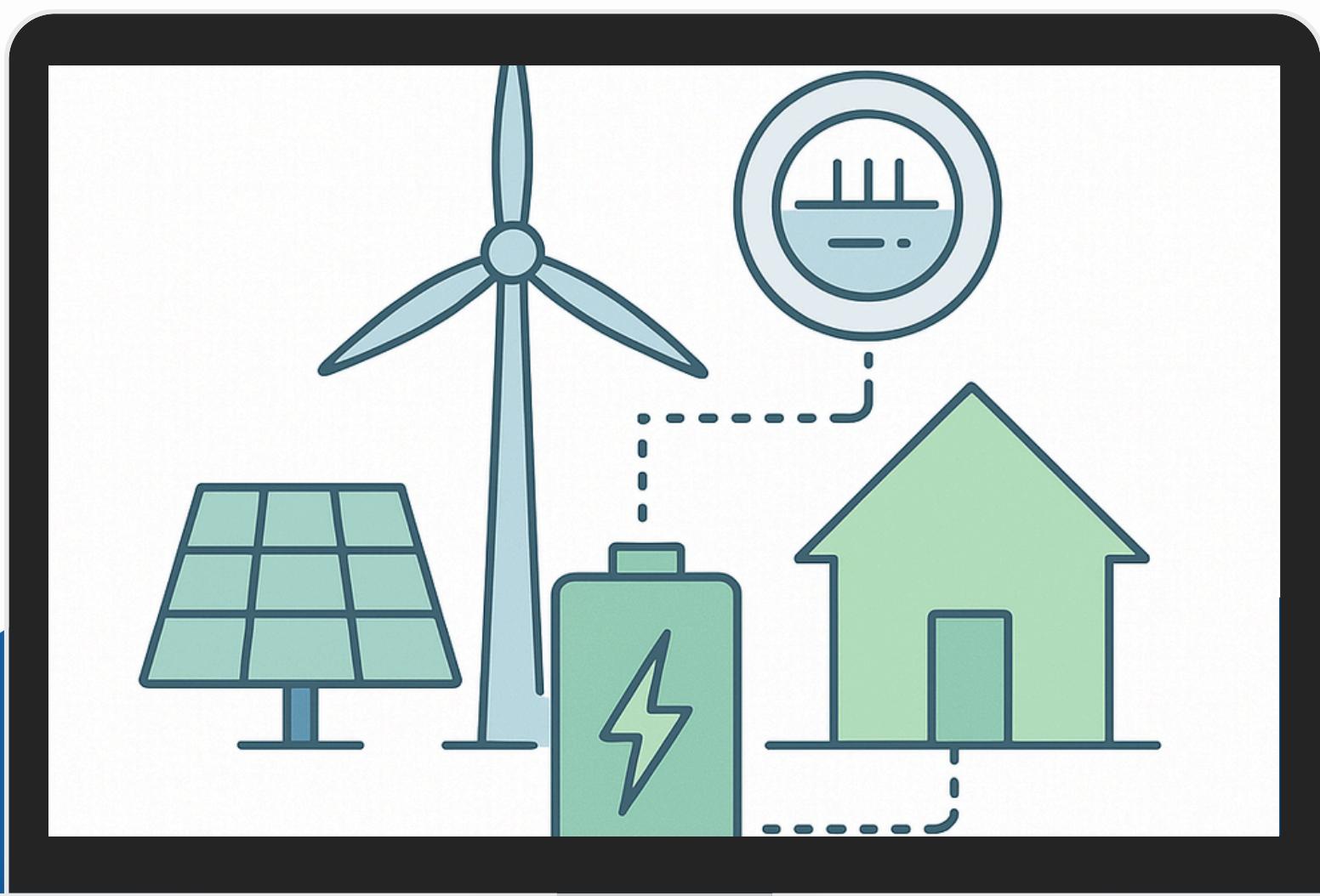


# Energy Management Project

## Group 1:

Konstantin Smirnov  
Yanal Al Halabi  
Onyedikachi Onah



# Overview

- ▶ Goal of the project
- ▶ Requirements
- ▶ Team
- ▶ DDD Context Map
- ▶ Project Architecture
- ▶ Project Structure
- ▶ Eureka Server
- ▶ Grafana & Prometheus
- ▶ Project Demo



# Goal of the project

Design and implement a Smart City Energy Management platform  
that runs in the cloud and is based on a microservice architecture

# Requirements

- Microservice architecture
- Documented, testable interfaces & artifacts
- Functional GUI and database
- The platform must include API documentation
- The architecture should support monitoring and logging
- System uses service discovery and config service



# Team & Tasks

## Konstantin

- Project architecture
- User Dashboard
- Project structure
- H2 Database
- Heating microservice
- Optimization of flat microservice
- Eureka for 2 miscroservices
- README file

## Yanal

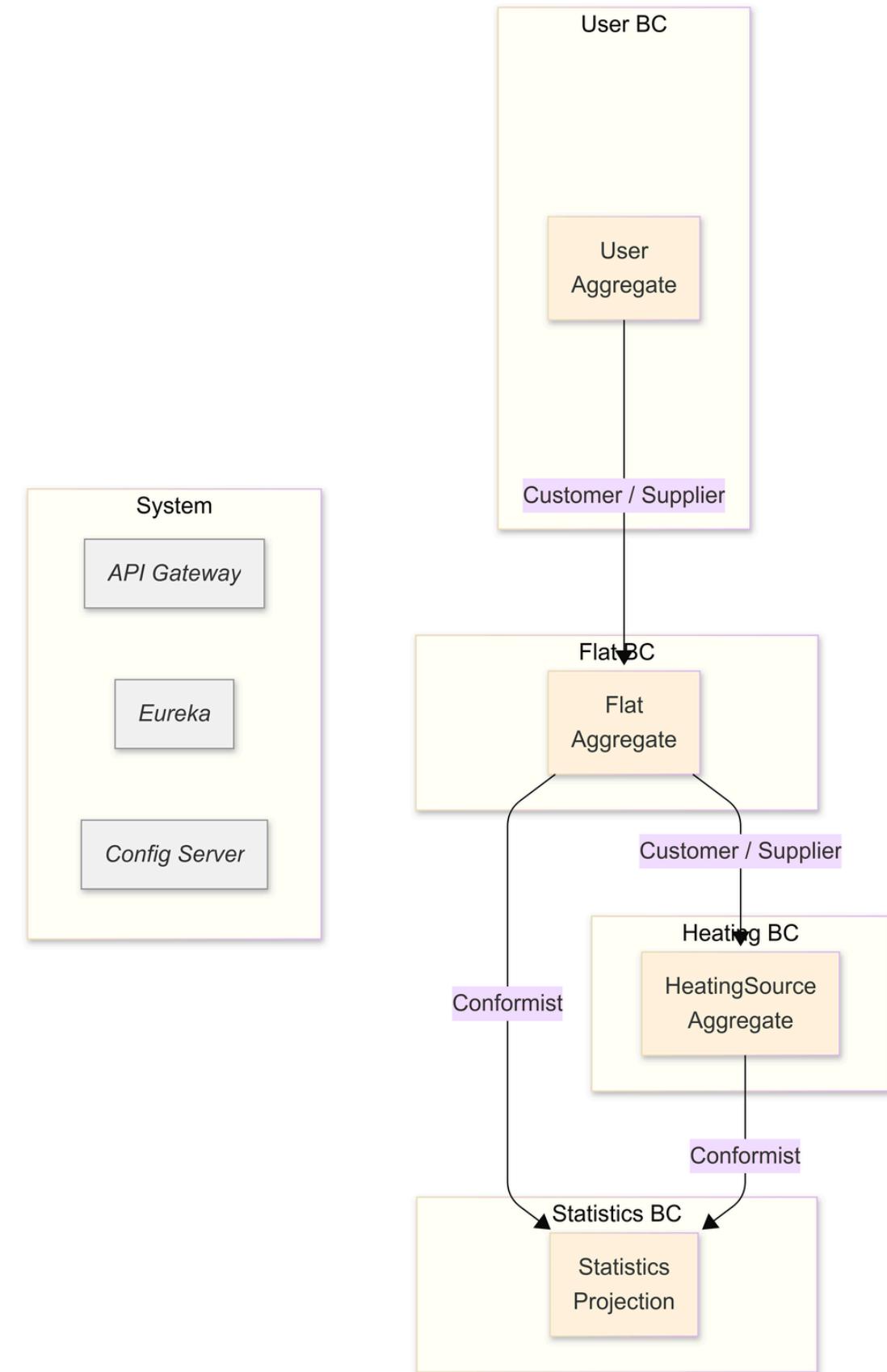
- DDD diagram
- Login + authentication
- Project structure
- User (partially), Flat and Statistics
- microservices
- Eureka for 2 miscroservices
- Config server
- API documentation

## Kachi

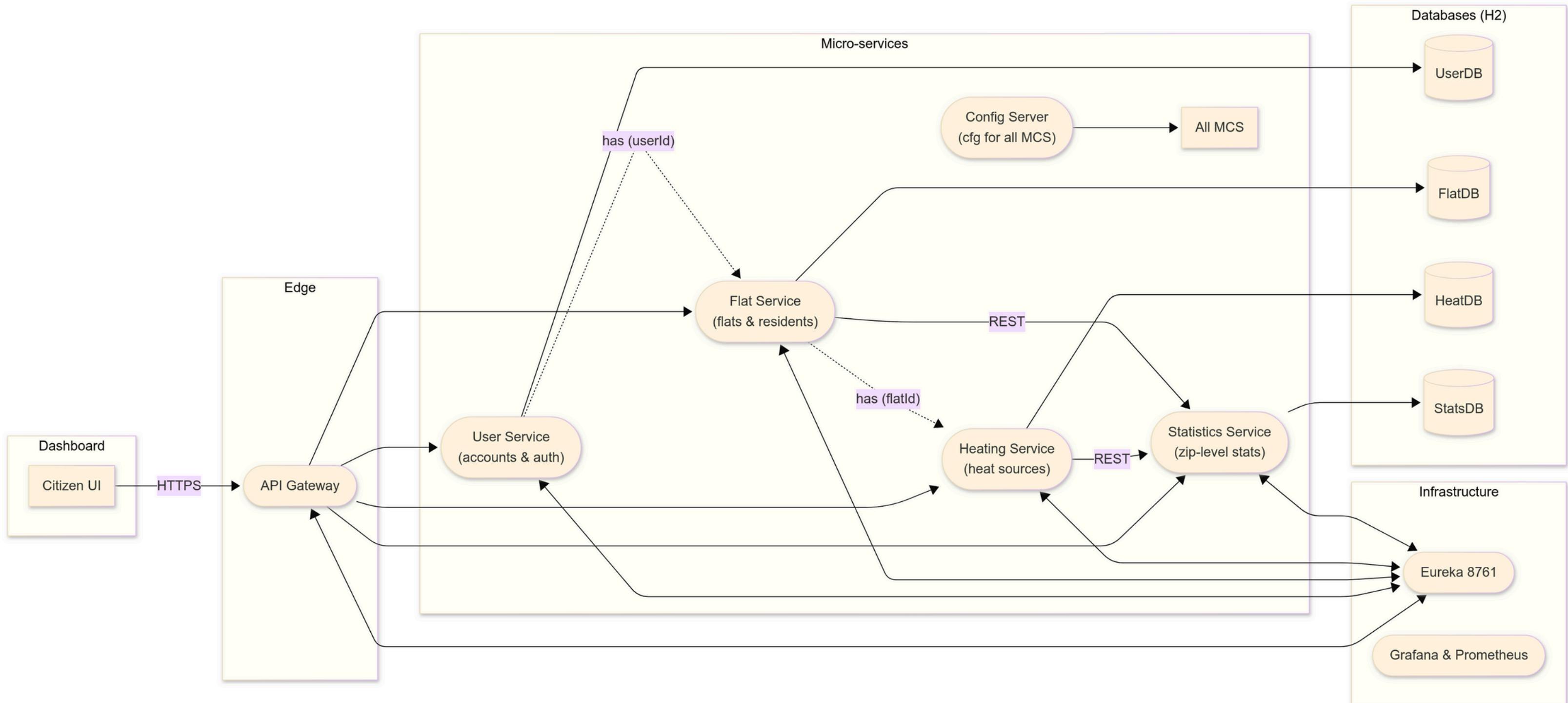
- Grafana & Prometheus



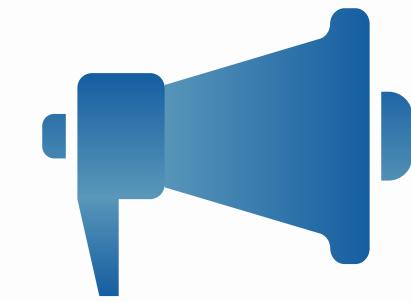
# DDD context map



# Project architecture

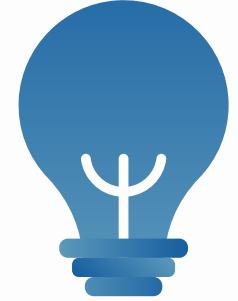


# Tech Stack



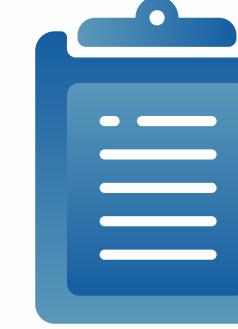
## Backend

Java  
Spring Boot  
Spring Cloud Netflix  
Eureka  
H2 DB  
REST (JSON)



## Frontend

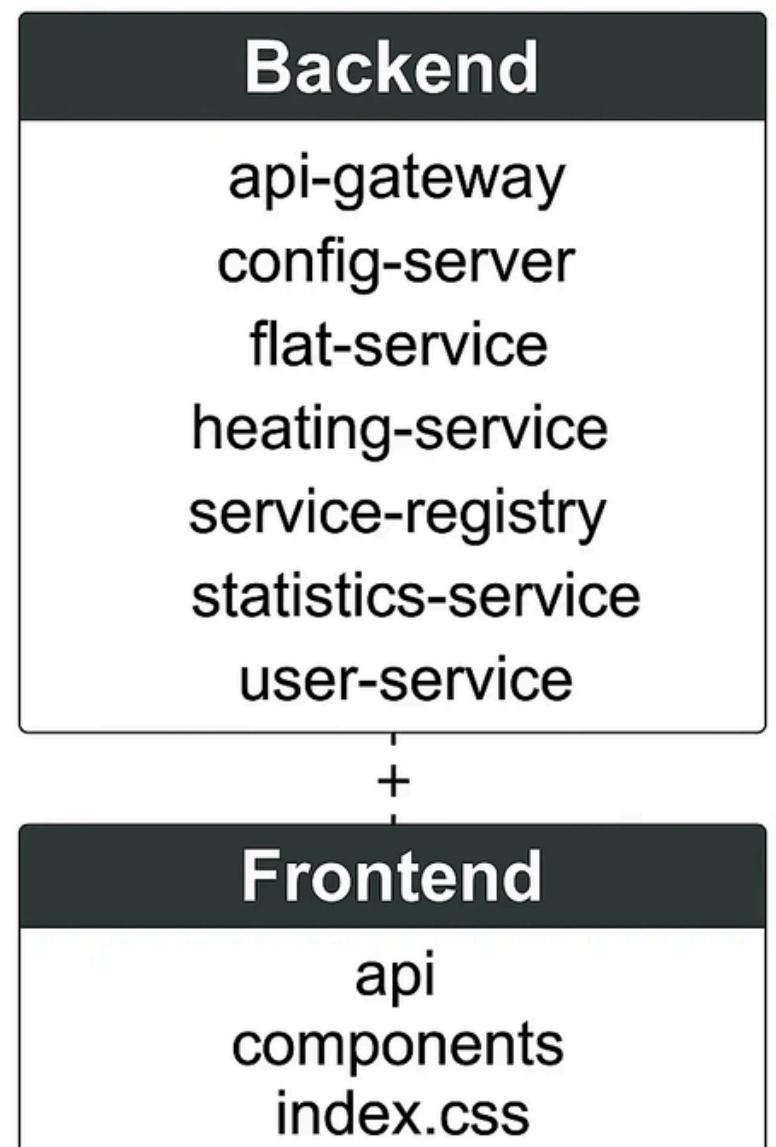
React  
CSS



## Observability

Prometheus  
Loki  
Grafana

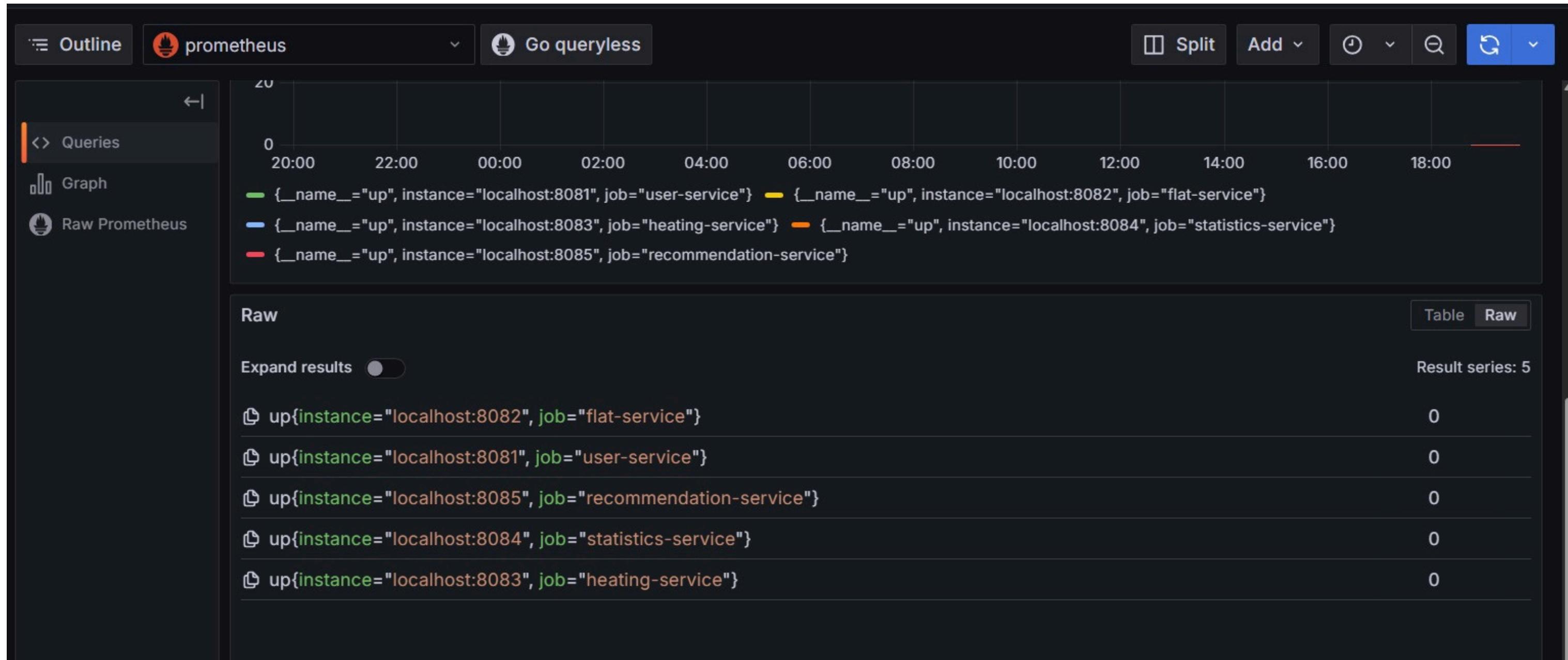
# Project structure



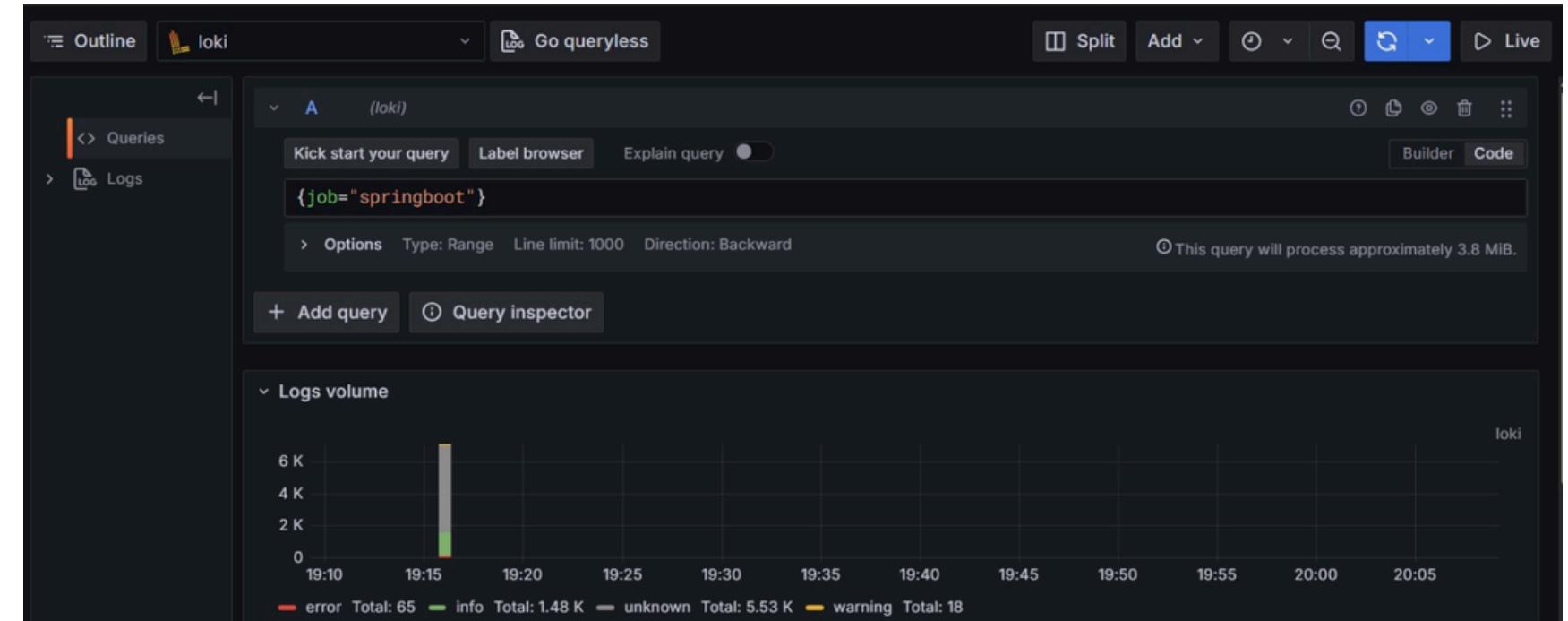
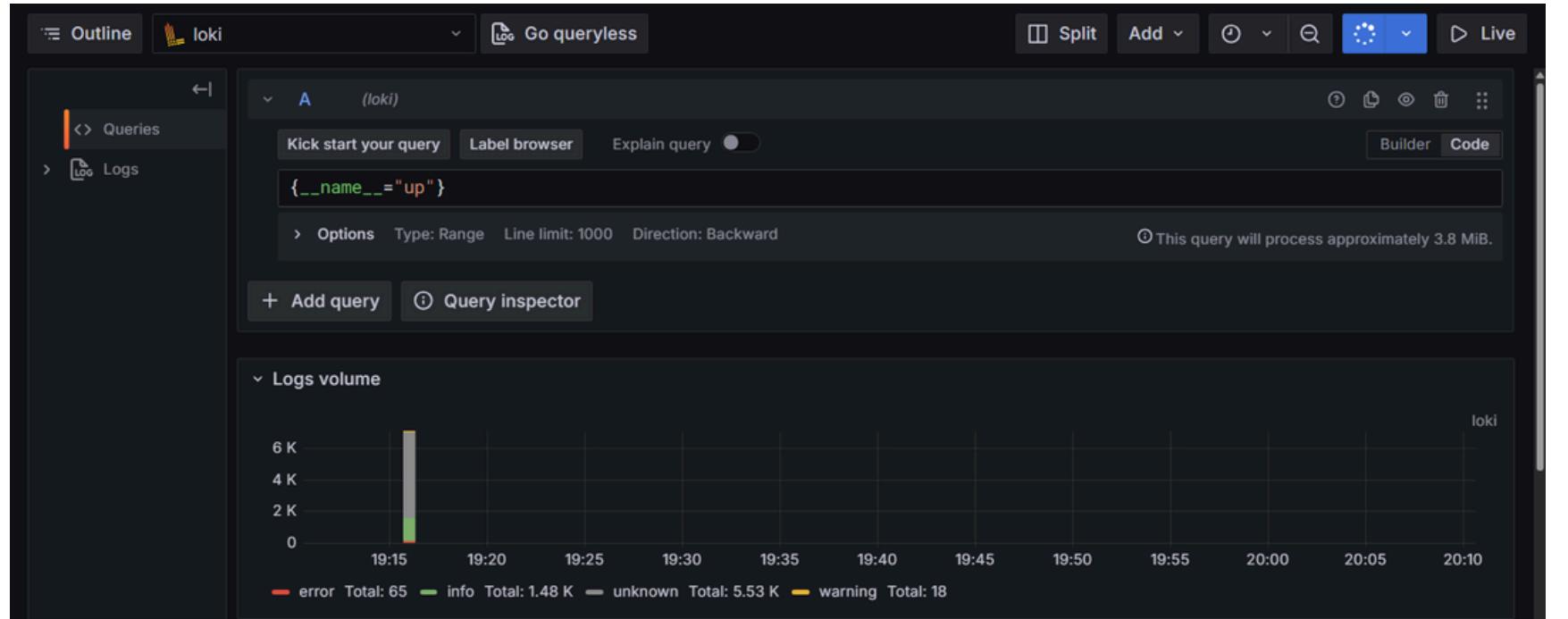
# Eureka server

Instances currently registered with Eureka			
Application	AMIs	Availability Zones	Status
API-GATEWAY	n/a (1)	(1)	UP (1) - <a href="#">10.118.133.233:api-gateway:8080</a>
CONFIG-SERVER	n/a (1)	(1)	UP (1) - <a href="#">10.118.133.233:config-server:8888</a>
FLAT-SERVICE	n/a (1)	(1)	UP (1) - <a href="#">10.118.133.233:flat-service:8082</a>
HEATING-SERVICE	n/a (1)	(1)	UP (1) - <a href="#">10.118.133.233:heating-service:8083</a>
STATISTICS-SERVICE	n/a (1)	(1)	UP (1) - <a href="#">10.118.133.233:statistics-service:8084</a>
USER-SERVICE	n/a (1)	(1)	UP (1) - <a href="#">10.118.133.233:user-service:8081</a>

# Prometheus



# Loki



The screenshot shows the Loki interface with a dark theme, displaying a detailed log view for the `job=springboot` query. The top part of the screen shows the same navigation bar and query builder as the previous screenshots. The main area is titled "Logs" and displays 1000 log entries. The logs are timestamped and categorized by source and message. Some key entries include:

```
> 2025-06-26 19:15:18.103 2025-06-20T15:25:39.793+02:00 INFO 19108 --- [heating-service] [Thread-7] com.netflix.discovery.Disco  
veryClient : Completed shut down of DiscoveryClient  
> 2025-06-26 19:15:18.103 2025-06-20T15:25:29.918+02:00 INFO 19108 --- [heating-service] [DiscoveryClient-InstanceInfoReplicato  
r-0] com.netflix.discovery.DiscoveryClient : DiscoveryClient_HEATING-SERVICE/Kachi.mshome.net:heati  
ng-service:8083 - registration status: 204  
> 2025-06-26 19:15:18.103 2025-06-20T15:25:30.506+02:00 INFO 19108 --- [heating-service] [Thread-7] j.LocalContainerEntityManag  
erFactoryBean : Closing JPA EntityManagerFactory for persistence unit 'default'  
> 2025-06-26 19:15:18.103 2025-06-20T15:25:36.392+02:00 INFO 19108 --- [heating-service] [Thread-7] com.zaxxer.hikari.HikariDat  
aSource : HikariPool-1 - Shutdown completed.  
> 2025-06-26 19:15:18.103 2025-06-20T15:25:28.951+02:00 INFO 19108 --- [heating-service] [Thread-7] com.netflix.discovery.Disco  
veryClient : Saw local status change event StatusChangeEvent [timestamp=1750425928951, current=DOW  
N, previous=UP]  
> 2025-06-26 19:15:18.103 2025-06-20T15:25:36.274+02:00 INFO 19108 --- [heating-service] [Thread-7] com.zaxxer.hikari.HikariDat  
aSource : HikariPool-1 - Shutdown initiated...  
> 2025-06-26 19:15:18.103 2025-06-20T15:25:36.419+02:00 INFO 19108 --- [heating-service] [Thread-7] com.netflix.discovery.Disco  
veryClient : Shutting down DiscoveryClient ...  
> 2025-06-26 19:15:18.103 2025-06-20T15:25:39.668+02:00 INFO 19108 --- [heating-service] [Thread-7] com.netflix.discovery.Disco  
veryClient : Unregistering ...  
> 2025-06-26 19:15:18.103 2025-06-20T15:25:28.960+02:00 INFO 19108 --- [heating-service] [DiscoveryClient-InstanceInfoReplicato  
r-0] com.netflix.discovery.DiscoveryClient : DiscoveryClient_HEATING-SERVICE/Kachi.mshome.net:heati  
ng-service:8083: registering service...  
> 2025-06-26 19:15:18.103 2025-06-20T15:25:39.729+02:00 INFO 19108 --- [heating-service] [Thread-7] com.netflix.discovery.Disco  
veryClient : DiscoveryClient_HEATING-SERVICE/Kachi.mshome.net:heating-service:8083 - deregister st  
atus: 200  
> 2025-06-26 19:15:18.103 2025-06-20T15:25:28.946+02:00 INFO 19108 --- [heating-service] [Thread-7] o.s.c.n.e.s.EurekaServiceRe  
gistry : Unregistering application HEATING-SERVICE with eureka with status DOWN
```

# **THANK YOU!**