Spring boot micro service bank application project case study

We will create bank application with micro service architecture using Spring boot

Here this project consist of mainly 4 micro services and those are:

Account service

- This is the service that handles bank account CRUD operation
- Fund transfers, deposit, withdraw operation between accounts

Loan service

- This is the service that handles loan issued to a particular account,
- we can find the loan attached to an account using account number

Card service

- This is the service that handles Credit Card issued to a particular account,
- we can find the Card attached to an account using account number

User service

- This service includes all the operations under the User such as registrations and retrieval.
- Additionally, this API consumes key cloak REST API to register and manage the user base

Components inside this architecture

Service Registry – Netflix Eureka Service Registry.
API Gateway – Gateway will be configured using Spring cloud gateway.
Configuration Service – Spring Cloud Config Server and Client.
Authentication – Here we can use Okta/Keycloak for authentication and authorization,
Okta is an open-source Identity management system and we could easily build user related stuff.
Database – H2 database
Message Queues – Kafka/RabbitMQ will be the main message queue supplier in this project
Logging – ELK stack will be used to manage logs and process custom datasets for quick queries inside the architecture.
Server API Documentation – API documentation for microservices will be done using Swagger with UI.
Monitoring – Here we are using Prometheus, Micrometer, and Grafana to monitor the whole application setup after deploying into the servers.
Distributed tracing – Zipkin will be the tool that we are going to use with this project in order to trace whole application requests and details about the performance.
Containization- We will use Docker to achive Containization for diffrent components
Kubernetes – First we use local kubernetes cluster using minikube docker desktop and deploy our project then we will use GCP GKE to deploy final project on Kubernetes cluster