

## Search Engine System (SYS – Lab 2)

### Features:

#### The Service

- Should run in docker container
- Should implement “long-running saga transactions”

Think about multiple microservices with their database. We need to roll back all completed transactions in case of any microservice failed in between to maintain data consistency to make our business reliable, sustainable, and reach to desire outcome.

So, I decided to implement Choreography – Event-based transactions. In choreography, each microservices interact with each other through the event. In this case, we do not have any centralized service or coordinator.

For the event, I will use event sync like RabbitMQ.

- Should have Database replication + failover
- Should implement Grafana logging

A Grafana dashboard supports multiple panels in a single grid. You can visualize results from multiple data sources simultaneously.

#### The Gateway

- Should implement “Service high availability”
- Should have trip circuit breaker if multiple re-routes happen
- Should implement Grafana logging

#### The Cache

- Should have cache replication based on Redis caching

