MICROSERVICES ARCHITECTURE ADVANCED PART 2
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Day 1

Implementing MicroServices With SpringBoot

•Setting up a development environment
•Best Practices and Common Principles
•NovelHealthCare Project Overview
•Implementing super admin, admin, doctor and patient microservices

Controller Components Service Components Entity/Domain Components
Repository Components

The Kafka Architecture
The main components of Kafka Use cases for Kafka
The contents of Kafka's /bin directory How to start and stop Kafka
How to create new topics
How to use Kafka command line tools to produce and consume messages
Kafka Streams
Relying on Kafka Topics for Storage Relying on Kafka for System State
Kafka Event-Driven Microservice Architecture

Day 2

Rate Limiting
Rate Limiting – Business Cases Configuring Rate Limiting in NGINX Circuit
Breaker

Design Principles
Design Principles (continued) Cascading Failures

Bulkhead Pattern Circuit Breaker Pattern Thread Pooling Request Caching

Request Collapsing Fail-Fast

Fallback
Circuit Breaker Solutions
Load Balancing in Microservices Server-side load balance Client-side Load
Balance Architecture
Service Mesh
Service Mesh (Contd.) Service Mesh Solutions
Content Delivery Network (CDN) How does a CDN Work? Benefits of using a
CDN
CDN Solutions

Day 3

JWT
Intrduction to JSON Web Token Authorization
Information Exchange JWT Structure
Header Payload Signature
Microservices communication using secured JWT

Distributed transaction
Isolate user actions for concurrent requests Transaction atomic
Two-phase commit (2pc) pattern Saga Pattern
Eventual Consistency and Compensation

Leading Practices for Microservice Logging Logging Challenges
Leading Practices
Correlate Requests with a Unique ID Include a Unique ID in the Response Send
Logs to a Central Location Structure Your Log Data
Add Context to Every Record Examples of Content
Write Logs to Local Storage Collecting Logs with Fluentd