Spring boot Programming Language

Session 1 & 2

Introduction

- Types of software architectures
- SOA and Monolith Architecture
- Why Micro services
- Detailed Micro Service Architecture
  App Layer
  Business Layer
- Enterprise Layer
  Infra Layer
- Need of Spring Boot
- Difference between Spring & Spring Boot
- Advantages with Micro Services

Building Spring boot Application

- Normal Spring Manual Approach
- Maven Overview
- Spring Initializer
- STS
- Eclipse with STS Plug-in
- Understanding the Spring Boot auto configuration

Rest Annotation with In Memory Database & CRUD Operations

- H2
- Derby
- HSQL
- Redis Cache
- PostMan or Swagger Overview

Rest Annotation with Relation DB

- MySql
- PostGresSQL

JPA Repository Concepts

- Crud Repository
- JPA Query Concepts
- Named Queries
- Query Annotation
- AsyncResults
- Pagination and Sorting

Actuator Concepts

- Production Monitoring
- Health Check Concepts
- Security Measurements

Spring Boot Custom Logging

- Logging Level
- Patterns Changes
- Rolling Logs

Spring Boot Profile Components

- Introduction
- Multiple Properties
- YML File
- Command Line Runner Example
- Real time scenarios of components

Auto Configuration

- Introduction
- @Conditional Flow
- Customize conditional annotations
- Spring Boot built in conditional annotations

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Thymleaf Concepts

- Introduction
- Example on Web Application
- Validations on Web Applications
- Internalization i18n Concepts

Integration with Spring Web

- Using **Spring Web MVC**
- Using **Spring Restful**
- Need of embedded servers & customization

Spring Boot Security

- Basics
- Basic Authentication
- Authorization
- Role Based Access Control
- Attribute Based Access Control
- SSL Security
- TLS Security

Database Concepts

- Spring JDBC
- Database to CSV
- Spring Batch

Spring Cloud

- Introduction
- Cloud Architecture
- Cloud application benefits

Spring Cloud Config

- Introduction
- Setup version control repository
- Integration with repository

Core Concepts

- Spring Boot AOP
- Spring Boot Cache
- Guava Cache integration
- Spring MVC vs. JAX-RS
- SprinBoot with Jersey
- Junit Integration
- Rest Integration Test Cases

Micro Services

- Micro Services Introduction
- Principle and Characteristics
- Use cases and Benefits
- Challenges
- Design standards
- Micro Services Communication
  – Synchronous
  – Asynchronous
- Pitfalls

Micro Services Design Considerations

- Micro Services per JVM?
- Micro Services share the data stores?
- Micro Services Transaction boundaries
- User Interfaces integration with Micro Services

Netflix

- Introduction
- Eureka Server & Eureka Client
- Feign Client
- Ribbon

API Gateway

- Introduction to ZUUL
- Design standards Integration