SPRING BOOT AND MICROSERVICES
(COURSE CONTENT)
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ASHOK IT
Learn Here.. Lead Anywhere..!!

1. CORE

DI and IOC
Container Types
Annotation Configuration
@ComponentScan
@Component
@Value
Java Configuration
@Configuration
@Bean
@PropertySource
Environment
Lifecycle methods
Runners
@ConfigurationProperties
Properties file
YAML File
Profiles
Lombok API

2. SQL

JDBC v/s ORM
Hibernate with JPA
Hibernate Example
Data JPA View
Repository Interface
CrudRepository
Pagining and Sorting
Jpa Repository and Annotations
@Entity, @Id

@Table, @Column
Collections Mapping
Associations Mapping
Cascading
FetchType
findBy
@Query
@Modifing
@Transactional
HQL Joins
Generators

3. WEB

Spring MVC Intro
First Application
Workflow and Common errors
Controller Rules
Model memory
HTML Form
Thymeleaf tags
Thymeleaf Form
DevTools
@RequestParam
Static folder (images/css/js)
Crud Application
Pagination
Error Pages

4. REST

HTTP Protocol
JSON
JACKSON API
@RestController
@RequestBody
@ResponseBody
ResponseEntity<T>
HttpStatus
@GetMapping

@PostMapping
@PutMapping
@DeleteMapping
@PatchMapping
Header Params
Database Integration
Validator API
POSTMAN
Swagger
Error and Exception handling
JUnit with RestController
Logging with RestController

5. MICROSERVICES

Monolithic Application
SOA Design
Microservices Architecture
Eureka Server
DiscoveryClient
LoadBalancerClient
Open Feign
ConfigServer
SOLID Principles
External Config
Native Config
@RefreshScope
Actuator + Admin Server and Client
Api Gateway
Circuit Breaker (Resilience4j)
SAGA Pattern

6. SECURITY

JAAS
InMemory Authentication
JDBC Authentication
ORM Authentication
Session Management
Custom Login Form

Token based Security
JWT and JJWT
OAuth 2.x

7. INTEGRATION

Rest + Angular + Bootstrap
Rest + ReactJS + Bootstrap
Rest + Apache Kafka
Rest + Redis Cache
Rest + HikariCP

8. EMBEDDED

Apache Tomcat
Jetty
Undertow
H2

9. TOOLS and OTHER

Maven
Log4J/SLF4J
Gradle
JUnit with Mock
Docker
Kubernetes
ELK Config
GitHub
Zipkin and Sleuth

10. BONUS CONCEPTS

Email
Scheduling
Redis Cache
Eclipse Debugging
AGILE + JIRA
Apache Camel