Java Microservices

Program Overview:

- Understanding of Micro service with spring boot. Hand on experience with exercise .
- Current software development trend with micro service.

Who should attend: Fresher and intermediate level java Developer

On Completion of this program :

- Understand Architecture of micro service
- Able to create micro service from scratch
- Debug to spring boot and understand different library
- Inter communication between micro service
- SQL and No SQL integration with spring boot
- Security in micro service.
- Application and uses in real world use case.
- Understanding of current tools uses to create Micro service.

Course Contents:

Day 1

- Introduction To microservice
- Java essential for micro service
- Build tools maven
- Docker basic introduction
- Tools for code - STS

Day 2
- Environment set up
- Java Installation
- Maven Installation
- Intellij Setup
- Docker Installation

- Postman Setup
- Git setup
- Cygwin setup
- Hand-on lab on tools.

Day 3
- Micro Services Architecture
- 12 Factor Apps
- Microservice design pattern and its implementation
- Spring Boot introduction
- Service Distribution
- Security
- Create Simple spring boot Application

Day 4
- Create Rest Api Spring boot and its usage
- Microservice Containerization
- Benefit and usage of Containerization
- Micro service in cloud world
- Lab on Docker containerization.

Day 5 :

- Spring Boot : Annotation
- Dependency Injection
- Lab With Spring boot annotation and DI

Day 6:

- Spring Boot : properties
- Spring boot environment variable
- Deep dive to spring.io
- DI with Spring Boot
- Lab With Spring boot annotation and environment

Day 7 :

REST API:

- Spring Boot REST Controller
- GET API
- POST/PUT API
- Lab on GET POST and PUT

Day 8:

REST API:

- DELETE API
- Path Parameters
- Header Parameters
- Query Parameters
- Lab to create Full controller Rest Api Microservice

Day 9 :

SQL Data Base With SpringBoot :

- SQL database (Mysql)
- Spring Data Library Crud repository
- MongoDB
- Database Configuration
- Lab With Spring boot and Database SQL

Day 10 :

NOSql Data Base With Spring Boot :

- Nosql database
- Spring Data Library Mongo repository
- MongoDB
- Database Configuration
- Lab With Spring boot Nosql

Day 11

- Design patterns :
- Service discovery
- Load balancer
- Circuit breaker
- API Gateway
- Eureka service Discovery load balancing
- Lab with Service discovery

Day 12: Micro service Inter Communication

- Inter communication between micro service - with security and handshaking mechanism examples
- Micro service Messaging
- ActiveMQ Producers
- ActiveMQ Consumers
- Lab with message communication ActiveMQ

Day 13: Micro service Testing:

- Automated unit testing
- Component test
- Integration test
- Spring Security(using jwt)

Day 14 : Docker

- Introduction to Docker
- Architecture
- Docker hub and registry
- Docker file
- Docker compose
- Images and containers

Day 15: Deployment

Deployments of microservices over cloud environments (AWS or Azure, any one)

Day 16: Mini project

Language: java

Tools: Maven , IntelliJ or eclipse

Data Base: Mongo DB, MySQL

Messaging: Artemis or ActiveMQ

Containerization: Docker Basic to run the Application