# Spring, Spring Boot and MicroServices

# **Prerequisite : Java Programming Skills .**

# **Training duration : 11 days 4hrs / day**

Day 1

* Spring Introduction
* DI and IOC
* Auto wiring
* Spring configuration using xml files
* Java Configuration
* Bean Lifecycle
* Autowire byType,byName

Day 2

* MVC (does not cover Spring UI)
* Creating a Controller
* Annotations in Spring like @Autowired, @Bean ,@Configuration
* Concept of AOP with a Demo Program

Day 3

* Spring Boot
  + Benefits of Spring Boot
* Working on STS
* Autoconfiguration
* Command Line Runner
* Introduction to REST services.
* @RestController
* POSTMAN as a REST Client.
* Application. properties and YML support.
* @Configuration , @Service, @Bean
* Creating REST API in Spring Boot
* Postman as REST client.

Day 4

* JPA Introduction
* JPA repository.
* CRUD operations using in Memory H2 DB.
* Connecting to MYSQL/MongoDB
* Writing queries using @Query
* DML operations using JPARespository

Day 5

* JMS implementation using Spring Boot.
* Spring Batch Demo Program
* Spring Security
* Basic Authentication and Authorization

Day 6

* In Memory authentication and JDBC authentication
* JWT introduction and Demo program
* Oauth2 Demo

Day 7

* Microservices Introduction
* Pros and Cons of MS.
* Introduction to Netflix Patterns to address MS Challenges.
* Spring Cloud Config and Client.
* Using Actuator
* Creating GIT Repository and testing config server and config client.

Day 8

* Netflix Eureka Naming and Discovery Service.
* Creating a Consumer Service using REST Template.
* Creating a Consumer Service using Feign Client
* Client Load Balancing using Ribbon

Day 9

* Hystrix/Resilience4J for Fault Tolerance
* Zuul/Spring Cloud Gateway API Gateway
* Containerization

Day 10

* Docker Introduction
* Executing Spring Boot application using docker

Day 11

* Case Study in Banking Domain/Inventory Management.