# Spring, Spring Boot and Micro Services

# **Prerequisite : Java Programming Skills (4hours/session)**

Day 1

* Spring Introduction
* DI and IOC
* Auto wiring
* Spring configuration using external files
* Java Configuration
* Bean Lifecycle
* Spring Boot
* Working on STS
* Autoconfiguration
* Command Line Runner
* Rest Controller
* Application. properties and YML support.
* @Configuration , @Service, @Bean
* Creating REST API in Spring Boot
* Postman as REST client.
* Profiling
* Service Layer
* ORM introduction
* JPA Introduction
* JPA repository/MongoRepository
* CRUD operations using in Memory H2 DB.

Day 2

* Connecting to MySQL
* DML in JPA Repository
* Connecting to MongoDB
* DML and @Query
* Spring Security
* Form Based Authentication and Authorization.
* In Memory authentication and JDBC authentication
* JWT introduction and Demo program

Day 3

* Messaging Systems
* JMS
* Kafka Introduction
* Implementation using Spring Boot
* 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 4

* Design Patterns Introduction and relevance to Microservices
* Netflix Eureka Naming and Discovery Service.
* Creating a Consumer Service using Feign Client
* Client Load Balancing using Ribbon
* Resilience4J for Circuit Breaker Pattern
* Containerization
* Docker Introduction
* Executing Spring Boot application using docker