**API and Microservices Architecture– 4hrs session**

**Session 1: Microservices Architecture with Java**

* Introduction to microservices architecture and its benefits
* Design considerations for microservices
* Communication between microservices (synchronous and asynchronous)
* Implementing service discovery and registration with Eureka or Consul
* Load balancing and fault tolerance with Ribbon and Hystrix
* Centralized logging and distributed tracing with ELK stack
* Containerization with Docker and container orchestration with Kubernetes
* Deploying microservices to cloud platforms (AWS, Azure, Google Cloud)

**Springboot core & Spring Cloud – (4Hrs Session)**

**Session 1 (4 hours):**

1. Introduction to the Spring Framework
   * Overview of Spring Framework features and benefits
   * Dependency Injection and Inversion of Control (IoC) concepts
2. Core Spring Concepts
   * Understanding Bean Factory and Application Context
   * Working with beans and dependencies
   * Bean scopes and lifecycle management
3. Spring MVC (Model-View-Controller)
   * Introduction to the MVC pattern
   * Creating a Spring MVC application
   * Handling requests and responses
   * Working with controllers, views, and models
4. Data Access with Spring
   * Introduction to Spring Data
   * Configuring data sources and connection pooling
   * Working with JdbcTemplate and Spring Data JPA
   * Transactions and transaction management