SPRING BOOT TOPICS

**1. Introduction to Spring Boot**

* Overview of Spring Boot
* Spring Boot vs. Spring Framework
* Spring Boot Features

**2. Setting Up Spring Boot**

* Installation and Setup
* Spring Initializer
* Maven/Gradle Integration

**3. Spring Boot Basics**

* Project Structure
* Main Class (@SpringBootApplication)
* Dependency Injection (@Autowired)
* Spring Boot Starters

**4. Spring Boot Configuration**

* Application Properties/YAML Configuration
* Profiles (@Profile)
* Externalized Configuration
* Configuration Properties (@ConfigurationProperties)

**5. Spring Boot Data Access**

* Spring Data JPA
* Spring Boot with Hibernate
* CRUD Operations
* Repository Pattern
* DataSource Configuration

**6. Spring Boot Web Development**

* Building REST APIs
* Controllers (@RestController, @RequestMapping)
* Thymeleaf Integration
* Exception Handling
* Spring MVC with Spring Boot

**7. Spring Boot Security**

* Spring Security Basics
* Authentication and Authorization
* JWT Integration
* OAuth2 Implementation

**8. Spring Boot Testing**

* Unit Testing with JUnit and Mockito
* Integration Testing
* Test RestTemplate
* MockMvc for Testing Web Layer

**9. Spring Boot Actuator**

* Introduction to Actuator
* Monitoring and Metrics
* Health Checks
* Custom Endpoints

**10. Spring Boot DevTools**

* Automatic Restart
* Live Reload
* Development-time Features

**11. Spring Boot with Microservices**

* Microservices Architecture
* Service Discovery (Eureka)
* Circuit Breaker (Hystrix, Resilience4j)
* API Gateway (Zuul, Spring Cloud Gateway)
* Distributed Tracing (Sleuth, Zipkin)

**12. Spring Boot with Messaging**

* Spring Boot with JMS
* RabbitMQ Integration
* Kafka Integration
* Messaging Patterns

**13. Spring Boot and Cloud**

* Spring Boot with AWS/Azure
* Spring Cloud Overview
* Config Server and Config Clients
* Service Discovery and Load Balancing

**14. Spring Boot Logging**

* Logback Configuration
* Log Levels
* External Logging Configuration

**15. Spring Boot and Databases**

* NoSQL Databases (MongoDB, Cassandra)
* Relational Databases (MySQL, PostgreSQL)
* Spring Data REST

**16. Deployment of Spring Boot Applications**

* Deployment on Tomcat
* Standalone Deployment (JAR/WAR)
* Docker Integration
* CI/CD Integration

**17. Advanced Topics**

* AOP (Aspect-Oriented Programming)
* Custom Annotations
* Spring Boot with GraphQL
* Reactive Programming with Spring WebFlux