SPRINGBOOT

Module 1: Introduction to Spring Boot
1.1 Overview of the Spring Framework and Spring Boot.
1.2 Setting up a development environment.
1.3 Creating your first Spring Boot application.
1.4 Using Spring Initializer to bootstrap a project.

Module 2: Building RESTful Web Services
2.1 Creating RESTful endpoints with Spring Boot.
2.2 Handling HTTP methods (GET, POST, PUT, DELETE).
2.3 Request and response handling.
2.4 Handling exceptions and error responses.

Module 3: Data Access with Spring Boot
3.1 Introduction to Spring Data.
3.2 Configuring data sources.
3.3 Creating JPA (Java Persistence API) repositories.
3.4 Performing CRUD operations with Spring Data JPA.
3.5 Using QueryDSL or Specifications for complex queries.
3.6 Spring Data JDBC and NoSQL data stores (if applicable).

Module 4: Building Web Applications
4.1 Building web-based UIs with Spring Boot.
4.2 Using Thymeleaf or other template engines.
4.3 Handling form submissions and validation.
4.4 Working with static resources (CSS, JavaScript).
4.5 Security considerations for web applications.

Module 5: Spring Boot and Microservices
5.1 Microservices architecture and principles.
5.2 Creating microservices with Spring Boot.
5.3 Service registration and discovery
5.4 Load balancing and API gateways.
Handling inter-service communication (e.g., REST or gRPC).
5.5 Circuit breakers and fault tolerance (e.g., using Netflix Hystrix).

Module 6: Testing and Debugging
6.1 Writing unit tests and integration tests.
6.2 Using Spring Test for testing Spring Boot applications.
6.3 Debugging techniques and tools.