Spring Boot

**Introduction to Spring Boot**

* Intro to Spring Boot - What is Spring Boot and What It Does
* Advantages / Features of Spring Boot
* Spring Boot Hello World example
* @SpringBootApplication=@Configuration + @ComponentScan + @EnableAutoConfiguration
* SpringApplication.run() method
* CommandLineRunner / ApplicationRunner

**Configuration and Customization, Devtools**

* Working with Properties - YAML and .properties
* Advantages of YAML over .properties files
* Auto-configuration Overview
* Customization of auto-configuration
* Need of DevTools

**Creating profiles in spring boot**

* Need of profiles?
* Creating profiles using .yml and .properties files
* Selecting specific profile at runtime
* @Profile annotation

**Developing REST APIs**

* DispatcherServlet Review
* Web Starters and Configuration spring-boot-starter-web
* Using Embedded Servers (Tomcat, Netty)
* Annotations
  + @GetMapping
  + @PostMapping
  + @PutMapping
  + @DeleteMapping
* ResponseEntity<T> class
* Content negotiation
  + Returning JSON or XML response
  + Accept and Content-Type headers
  + jackson-dataformat-xml dependency
* Handling exceptions
  + @ExceptionController
  + @ControllerAdvice
  + When to use @ControllerAdvice?
* RestTemplate client

**Spring Boot Database Support and CRUD operations**

* Basic Auto-configuration - DataSource
* Configuration Properties
* Spring Boot's JPA Support - spring-boot-starter-data-jpa
* Using Spring Boot Data - CrudRepository/JpaRepository
* Defining Queries with Spring Boot Data
* @Query annotation

**Actuator**

* Actuator Overview and Capabilities
* Actuator Endpoints
* Enabling and disabling endpoints
* Creating Custom Actuators Endpoint

**Documenting REST APIs using swagger**

* Introduction to swagger 2
* Setting up swagger 2 – springfox swagger implementation
* @EnableSwagger2
* Creating Docket bean
* Accessing swagger UI
* Adding API info
* Annotation in swagger 2
  + @Api
  + @ApiOperation
  + @ApiResponses and @ApiResponse
  + @ApiModel
  + @ApiModelProperty

**Enabling CORS**

* Introduction to CORS
* Enabling CORS in spring boot application
* @CrossOrigin
* Using WebMvcConfigurer bean

**Spring Security Overview**

* Introduction to Spring Security
* spring-boot-starter-security - Auto-configuration and Customization
* Authentication and authorization
  + In-memory authentication
  + JDBC Authnetion
  + UserDetails Service
  + Token based authorization with JWT

**Testing Spring Boot Application**