



H.No: 7-1-413/2, Beside Sonabai Temple, Near Reliacne Fresh, Balkampet Rd, Ameerpet, Hyderabad - 500038

SPRING BOOT & MICRO SERVICES COURSE CONTENT

SPRING BOOT

- 1) What is Spring Framework
- 2) What is Spring Boot
- 3) Differences between Spring & Spring **Boot**
- 4) Spring Boot Overview
- 5) Pros & Cons of Spring Boot
- 6) Approaches to create Spring **Application**
 - a) Spring Initializer (start.spring.io)
 - b) Spring Starter Wizard in STS IDE
- 7) Introduction to Spring Boot Starters
 - a) Spring Boot Parent Starter
 - b) Spring-boot-starter
 - c) Spring-boot-starter-web
 - d) Spring-boot-starter-webflux
 - e) Spring-boot-starter-data-jpa
 - f) Spring-boot-devtools
 - g) Spring-boot-starter-mail
 - h) Spring-boot-actuator
 - i) Spring-boot-starter-test etc.
- 8) What is Start Class in Spring Boot
- 9) @SpringBootApplication annotation internals
- 10) SpringApplication.run(..) method internals
- 11) Spring Boot Application Boot strapping
- 12) AutoConfiguration in Spring Boot
- 13) IOC container
- 14) Dependency Injection
 - a) Setter Injection
 - b) Constructor Injection
 - c) Field Injection
- 15) Stereotype Annotations

- a) @Component
- b) @Service
- @Repository
- d) @Controller
- 16) Base Package Naming convention
- 17) Component Scanning
- 18) Auto wiring
 - a) byType
 - b) byname
 - c) constructor
 - d) none
- 19) @Qualifier annotation
- 20) @Primary annotation
- 21) Introduction to @Configuration annotation
- 22) Details of @Bean annotation
- 23) Bean Life Cycle
- 24) Bean Scopes
- 25) Banner in Spring Boot
- 26) Standalone application development in **Spring Boot**
- 27) Standalone application with layered architecture
- 28) Runner in Spring Boot
 - a) Application Runner
 - b) CommandLine Runner

SPRING DATA JPA

- 1) What is Persistence Layer
- 2) Best practises to follow in persistence layer
- 3) ORM Basics
- 4) Spring Data JPA Introduction

H.No: 7-1-413/2, Beside Sonabai Temple, Near Reliance Fresh, Balkampet Rd, Ameerpet, Hyderabad – 500038

(##): www.ashokit.in

You Tube: https://youtube.com/c/AshokIT



: https://twitter.com/AshokITSchool



f: https://www.facebook.com/ashokitschool/







H.No: 7-1-413/2, Beside Sonabai Temple, Near Reliacne Fresh, Balkampet Rd, Ameerpet, Hyderabad - 500038

- 5) Differences between Spring ORM and **Spring Data**
- 6) CurdRepository introduction
- 7) CurdRepository methods for DB operations
 - a) save() method
 - b) saveAll() method
 - c) findById() method
 - d) findAllById() method
 - e) findAll() method
 - f) deleteById() method
 - g) deleteAllById() method
 - h) delete() method
 - i) count()
 - j) existsById()
- 8) Custom findByXXX method syntax
- 9) Custom Queries Execution in Data JPA
- 10) JpaRepository introduction
- 11) JpaRepository methods for DB operations
- 12) Pagination Using Data JPA methods
- 13) Sorting Using Data JPA Methods
- 14) Query By Example Executor
- 15) Generators
- 16) Custom Generators in Spring Data
- 17) Embedded Database Introduction
- 18) Application Development using Embedded Database (H2)
- 19) Application Development Using MYSQL **Database**
- 20) Profiles in Spring Boot

SPRING WEB MVC

- 21) Spring Web MVC Introduction
- 22) Spring Web MVC Advantages
- 23) Spring MVC Architecture
- 24) Introduction to Front Controller
- 25) Controllers
- 26) Handler Mappers
- 27) View Resolvers
- 28) Web Application development using **Spring Boot**
- 29) Embedded HTTP Servers Introduction
 - a) Embedded Tomcat Server
 - b) Embedded Jetty Server
- 30) Making Jetty as Default server
- 31) Web Application Deployment in External
- 32) Sending Data From UI to Controller
 - a) Query Param
 - b) Path Param
- 33) Sending Data From Controller to UI
 - a) Model
 - b) ModelAndView
- 34) @RequestBody annotation
- 35) @ResponseBody annotation
- 36) Form Based application development using Spring Boot
- 37) Thymeleaf Introduction
- 38) Web Application with Thymeleaf
- 39) Sending Email using Spring Boot
- 40) Exception Handling in Spring Boot Web **Application**
- 41) Spring Boot Actuators
 - a) Health
 - b) Info
 - Heapdump
 - d) Theaddump
 - e) Beans

H.No: 7-1-413/2, Beside Sonabai Temple, Near Reliance Fresh, Balkampet Rd, Ameerpet, Hyderabad – 500038









You Tube: https://youtube.com/c/AshokIT : https://twitter.com/AshokITSchool











H.No: 7-1-413/2, Beside Sonabai Temple, Near Reliacne Fresh, Balkampet Rd, Ameerpet, Hyderabad - 500038

- f) Httptrace
- g) Mappings
- h) Shutdown etc

SPRING REST

- 42) Distributed Applications
- 43) Distributed Technologies
- 44) SOAP vs REST
- 45) RESTful Services Introduction
- 46) REST principles
- 47) One Time operations
- 48) Run Time Operations
 - a) Marshalling
 - b) Un Marshalling
- 49) JAX-B Introduction
- 50) JAX-B Architecture
- 51) Applications development with JAX-B
- 52) JSON Introduction
- 53) XML vs JSON
- **54) JACKSON API**
- 55) Converting Java object to JSON and vice versa using Jackson API
- 56) GSON API
- 57) Converting Java Object to JSON and Vice Versa using GSON API
- 58) HTTP Protocol Details
- 59) HTTP Methods
 - a) GET
 - b) POST
 - c) PUT
 - d) DELETE
- 60) HTTP Status Codes
- 61) @RestController
- 62) @RequestBody
- 63) @ResponseBody
- 64) @RequestParam
- 65) @PathVariable

- 66) MediaTypes
- 67) Consumes
- 68) Produces
- 69) Accept Header
- 70) Content-Type header
- 71) REST API Development using Spring Boot
- 72) POSTMAN
- 73) SWAGGER & SWAGGER UI
- 74) Exception Handling in REST API
- 75) REST Security
 - a) HTTP Basic Auth
 - b) JWT
 - c) OAuth2.0
- 76) Mono Objects
- 77) Flux Objects
- 78) REST Client Introduction
- 79) RestTemplate
- 80) WebClient
- 81) RestTemplate vs WebClient
- 82) Reactive Programming
- 83) Synchronous vs Asynchronous Calls
- 84) Apache Kafka with Spring Boot
- 85) Redis Cache Integration with Spring Boot

MICRO SERVICES

- 86) Monolith Architecture Introduction
- 87) Monolith Architecture case study
- 88) Monolith Application Deployment **Process**
- 89) Load balancer (Cluster) case study
- 90) Load Balancing Algorithms
 - a) Round Robin
 - b) IP Hashing
 - c) Sticky Session

H.No: 7-1-413/2, Beside Sonabai Temple, Near Reliance Fresh, Balkampet Rd, Ameerpet, Hyderabad – 500038









You Tube: https://youtube.com/c/AshokIT : https://twitter.com/AshokITSchool



f): https://www.facebook.com/ashokitschool/







Learn Here.. Lead Anywhere..!!

H.No: 7-1-413/2, Beside Sonabai Temple, Near Reliacne Fresh, Balkampet Rd, Ameerpet, Hyderabad - 500038

- 91) Monolith Architecture Drawbacks
- 92) Micro services Introduction
- 93) Micro Services Advantages
- 94) Micro Services Dis-Advantages
- 95) Micro Services case study
- 96) Identifying Micro services boundaries
- 97) Micro services Architecture
- 98) Micro services Development
 - a) API-1
 - b) API 2
- 99) Interservice communication case Study (FeignClient)
- 100) **Cloud Introduction**
- 101) **AWS Account Creation**
- 102) **AWS Services Overview**
- **Deploying Micro services to AWS** 103)
- 104) Service Registry case study (Netflix Eureka)
- 105) **API Gateway**
- 106) Hystrix (Circuit Breaker)
- 107) **Spring Boot Admin Server**
- 108) **Spring Boot Admin Client**
- 109) **Distributed Logging**
 - a) Sleuth Logging
 - b) Zipkin Server
- 110) Ribbon case study (Micro services load balancer)
- Implementing Ribbon in Micro 111) services
- ConfigServer Introduction & 112) **Implementation**
- 113) Micro services Integration with **Angular**

TOOLS

114) Maven

115) Log4J

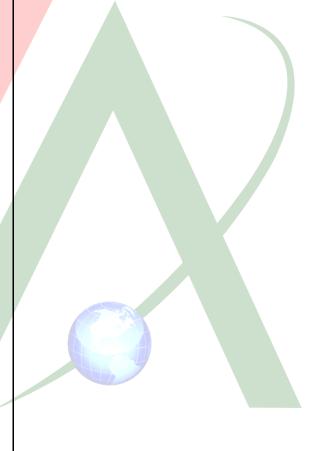
Junit 5 116)

117) **Jenkins Deployment**

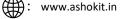
118) Docker

119) **POSTMAN**

120) **Swagger**



H.No: 7-1-413/2, Beside Sonabai Temple, Near Reliance Fresh, Balkampet Rd, Ameerpet, Hyderabad – 500038







You Tube: https://youtube.com/c/AshokIT : https://twitter.com/AshokITSchool





