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SPRING BOOT

C o u r s e

HIGHLIGHTS:

- Reverse engineering approach of learning
- Learn by doing. We will work together to build project as a colleague.
- 1. Enterprise level project as per your choice. We will choose project where we can implement all your learning
- Code reviews and Suggestions
- Bonus contents

SECTION 1: RECAP TO JAVA FUNDAMENTALS

Java fundamentals itself is a huge topic to learn. In this section, we will briefly go through some of the important parts of java which will help us to learn spring seamlessly.

- JDK and JRE
- Java Basics
- Data Structures(Map, set, List, tree)
- Generics
- OOP concepts(classes, interface, polymorphism, Solid principles...)
- Exception handling
- Files and I/O
- Entity, Model, DTO, DAO & POJO. What are they?

SECTION 2

GETTING STARTED

- Overview of Spring framework
- Spring vs Spring MVC vs Spring Boot
- Setting up tools and development Environment
- Getting Familiar with IntelliJ
- Dependency Injection and IOC
- Build tools(Maven/Gradle)
- Git and Github for source control

SECTION 3

SPRING BOOT

- Spring Initializer
- Folder Structure
- Spring Boot Annotations
- Auto-configuration
- Externalized Configuration
- Profiles and properties
- Aspect Oriented Programming
- Concurrency and Job Scheduling
- Mini-Project 1: First Spring Boot Application

SECTION 4

JPA, ORM, HIBERNATE & SPRING DATA JPA

- Overview of JPA and Spring Data JPA
- Overview of ORM and Hibernate
- Entity Manager
- Entity Relationships
- Defining JPA Entities
- Repository Interfaces and Custom Repository
- JPA Entity Life cycle Events
- H2 - In memory Database
- Connect & Persist data on PostgreSQL
- Mini-Project 2: First CRUD Application

SECTION 5

LOGGING & DEBUGGING

- Log Format
- Log to Console
- Log to File
- Log Levels
- Debugger and Break points

By section 5, we will have completed the basic flow of application development using Spring boot. Now our focus will be mostly on main project. As in the real environment, we will divide the works among ourselves and start contributing. We will decide project based on your interest.

REAL TIME PROJECT : PHASE 1

- Analyzing requirement
- Identifying system modules
- Designing Data models
- Creating Repositories

SECTION 5 RESTFUL WEBSERVICES

- Rest Controller
- Request Mapping
- Request Body and Path Variables
- Error Handling for REST
- RequestHeader Attributes
- Response Status
- Pagination
- GET, POST, PUT and DELETE APIs
- Mini-Project 3: CRUD APIs

REAL TIME PROJECT PHASE 2

- Writing business logic
- Creating restful APIs
- Testing APIs using postman

SECTION 6 SECURITY

- Basic Authentication
- Cross Site Request Forgery
- Role Based Access
- Password Encryption
- Authentication Attempts
- session management
- Mini-project 4: Registration and Login(login,logout,remember,redirect)

REAL TIME PROJECT PHASE 3

- Completion of project
- Writing Test Cases
- Deployment

SECTION 7 TESTING

- Introduction to JUnit, Mockito & Spring Boot Test
- Unit testing & Integration testing
- When to write Test?

BONUS CONTENT

If we can speed up learning all the previous sections, we will go through these contents on our remaining duration.

- Working with JSON
- Caching Mechanism
- Sending Emails & Forget Password
- Swagger for Rest Api
- React for UI development
- Tips & Best practices