Java Spring Boot, Microservices Development & Spring cloud

Duration: 65 hrs.

Main Topic	Sub-Topics
Java Introduction	JDK, JRE, JVM, Features of Java
Java Basics	Variables, Data Types, Operators
Control Flow	If-else, Loops (for, while, do-while), Switch Case
Arrays & Strings	1D & 2D Arrays, String Handling
OOPs Concepts	Classes, Objects, Methods
Inheritance	Types of Inheritance, Method Overriding
Polymorphism	Method Overloading, Method Overriding
Encapsulation & Abstraction	Getters & Setters, Abstract Classes
Interfaces	Interface vs Abstract Class
Exception Handling	Try-Catch, Finally, Throws & Throw
Multithreading	Thread Class, Runnable Interface
Multithreading	thread life cycle and sychronization concept
Collections Framework	List, Set, Map, Queue
Collections Framework classes	HashSet,LinkedHashSet,TreeSet,ArrayList, LinkedList, Hashmap
Collection framework with user defined object	Develop small application using collection framework
Java 8 features	default and static method part of interface and funtional interface
Java 8 features	Lambda expression and stream api
File Handling	Reading/Writing Files, Serialization
JDBC Introduction	Drivers, Connection, Statement
JDBC CRUD	Insert, Update, Delete, Transactions

Introduction to web application	web application, sever, type of server web server and application server
Introduction to html	what it html, html tags like p, h1, div, span, form etc
HTML Basics	HTML Structure, Tags, Forms
CSS Basics	Selectors, Properties, Box Model
CSS Flexbox & Grid	Layout Designing
JavaScript Basics	Variables, Functions, Events
DOM Manipulation	Query Selectors, Event Listeners
JavaScript Adv	JavaScript event, function and validation
Servlet Basics	Lifecycle, Request, Response
Session Management	Cookies, HttpSession
JSP Basics	Directives, Scriptlets, Expressions
JSTL	Using Standard Tag Library
MVC Architecture	Model-View-Controller Pattern
Servlet-JDBC Integration with mini project	Connecting Web App to Database
Spring Core	IoC, Dependency Injection
Spring core and context	Using XML file configuration and anntation for DI and IOC
Spring Beans	Bean Lifecycle, Scopes
Spring AOP	Aspect-Oriented Programming
Spring JDBC	JdbcTemplate, NamedParameterJdbcTemplate
Spring ORM	Hibernate Integration
Spring MVC	Controllers, Views
Form Handling	Validations in Spring MVC
Spring Boot Basics	Auto Configuration, Annotations
Spring Boot REST API	Building RESTful Web Services

Spring Boot JPA	Spring Data JPA with Hibernate
Exception Handling	Handling Errors in Spring Boot
Logging & Monitoring	Spring Boot Actuator
Spring Boot Deployment	Packaging and Deploying App
Microservices Introduction	Monolithic vs Microservices
RESTful Microservices	Building & Securing Microservices
Spring Cloud Config	Centralized Configuration
Service Discovery	Eureka Server & Clients
Spring Boot Actuator	Health Check, Metrics
Spring Boot Testing	Unit & Integration Testing
Docker Basics	Containerizing Spring Boot
AWS EC2 Introduction	Cloud Computing Basics
EC2 Instance Setup	Launching an EC2 Server
Deploying Spring Boot on EC2	Connecting to EC2, Running App
AWS RDS	Connecting Spring Boot to AWS RDS
CI/CD with Jenkins	Automated Deployment
Final Project Discussion	End-to-End Deployment Strategy
Project Deployment on EC2	Hosting on AWS EC2
Java Deep Dive	Advanced Java Features & Best Practices
API & Database Final Review	Spring Boot REST API, Database Optimization
Final Mock Interview & Course Wrap-up	Live Interview Simulation & Feedback