**Java Developer Study Plan: Spring Boot & Microservices**  
**Name:** Nrupatunga  
**Daily Commitment:** 2 hours/day  
**Total Duration:** ~25 days

**Phase 1: Spring Boot Fundamentals (Days 1–10)**

**Day 1–2:** Introduction to Spring & Spring Boot

* What is Spring Framework
* Why use Spring Boot
* Project setup in Visual Studio Code

**Day 3–4:** Dependency Injection & Annotations

* @Component, @Autowired, @Service, @Repository
* Bean lifecycle and configuration

**Day 5–6:** Building REST APIs

* @RestController, @GetMapping, @PostMapping
* CRUD operations

**Day 7–8:** Database Integration (JPA + H2/MySQL)

* Entity classes
* Spring Data JPA repositories
* @Entity, @Id, @GeneratedValue

**Day 9–10:** Exception Handling & Validation

* @ExceptionHandler, @ControllerAdvice
* @Valid, custom error responses

**Phase 2: Microservices Architecture (Days 11–20)**

**Day 11–12:** Microservices Concepts

* Monolith vs Microservices
* Benefits and architecture overview

**Day 13–14:** Building Multiple Services

* User Service
* Product Service
* Order Service

**Day 15–16:** Service Communication

* REST calls between services
* Using RestTemplate or WebClient

**Day 17–18:** API Gateway & Eureka

* Routing with Spring Cloud Gateway
* Service discovery with Eureka

**Day 19–20:** Centralized Configuration & Monitoring

* Spring Cloud Config
* Spring Boot Actuator
* Introduction to Prometheus and Grafana

**Phase 3: Hands-On Project (Days 21–25)**

**Project:** Mini E-commerce System

* **User Service:** Register/Login
* **Product Service:** List/Add products
* **Order Service:** Place orders
* **Tools:** Eureka, Gateway, Prometheus, Grafana
* **Goal:** Build, monitor, and deploy a complete microservices system

**Tools You'll Use**

* Visual Studio Code
* GitHub
* Postman
* Spring Initializr
* Docker (optional)
* Prometheus + Grafana