

Spring Boot Starters - Full Learning Roadmap

By completing these 20 structured mini-projects, you will gain a strong foundation in Spring Boot and its most commonly used starters. Each section includes:

- Table of Contents
- Short Theory about each Starter
- Mini Project Description
- Suggested Learning Order

Table of Contents

No	Starter	Mini Project
1	spring-boot-starter	Basic Hello World REST API
2	spring-boot-starter-web	Employee CRUD REST API
3	spring-boot-starter-thymeleaf	Employee Management UI
4	spring-boot-starter-data-jpa	Library Management System
5	spring-boot-starter-jdbc	Simple Student Database App
6	spring-boot-starter-validation	User Registration System
7	spring-boot-starter-security	Login & Role-Based Access Control
8	spring-boot-starter-actuator	System Monitoring Dashboard
9	spring-boot-starter-mail	Email Notification Service
10	spring-boot-starter-cache	Product Price Caching Service
11	spring-boot-starter-test	Unit Testing & Integration Testing
12	spring-boot-starter-aop	Logging & Performance Monitoring
13	spring-boot-starter-batch	Data Import Job
14	spring-boot-starter-quartz	Scheduled Reminder Service
15	spring-boot-starter-amqp	Message Queue with RabbitMQ
16	spring-boot-starter-websocket	Chat Application
17	spring-boot-starter-data-redis	Session Management with Redis
18	spring-boot-starter-oauth2-client	Google Login Integration
19	spring-boot-starter-data-mongodb	Product Catalog Service
20	spring-boot-starter-logging	Centralized Logging System

1. spring-boot-starter

About: The *spring-boot-starter* starter provides auto-configuration and dependencies to quickly use spring boot starter features in Spring Boot applications.

Mini Project: Basic Hello World REST API

Create a 'Hello Spring Boot' REST app with a simple controller.

Suggested Order: Step 1

2. spring-boot-starter-web

About: The *spring-boot-starter-web* starter provides auto-configuration and dependencies to quickly use web features in Spring Boot applications.

Mini Project: Employee CRUD REST API

Build CRUD operations using REST endpoints.

Suggested Order: Step 2

3. spring-boot-starter-thymeleaf

About: The *spring-boot-starter-thymeleaf* starter provides auto-configuration and dependencies to quickly use thymeleaf features in Spring Boot applications.

Mini Project: Employee Management UI

Add a frontend with Thymeleaf templates to serve HTML pages dynamically.

Suggested Order: Step 3

4. spring-boot-starter-data-jpa

About: The *spring-boot-starter-data-jpa* starter provides auto-configuration and dependencies to quickly use data jpa features in Spring Boot applications.

Mini Project: Library Management System

Store book details in a database using JPA/Hibernate.

Suggested Order: Step 4

5. spring-boot-starter-jdbc

About: The *spring-boot-starter-jdbc* starter provides auto-configuration and dependencies to quickly use jdbc features in Spring Boot applications.

Mini Project: Simple Student Database App

Connect with JDBC template to run SQL queries directly.

Suggested Order: Step 5

6. spring-boot-starter-validation

About: The *spring-boot-starter-validation* starter provides auto-configuration and dependencies to quickly use validation features in Spring Boot applications.

Mini Project: User Registration System

Validate inputs like email, phone, and password strength.

Suggested Order: Step 6

7. spring-boot-starter-security

About: The *spring-boot-starter-security* starter provides auto-configuration and dependencies to quickly use security features in Spring Boot applications.

Mini Project: Login & Role-Based Access Control

Secure APIs with username, password, and roles.

Suggested Order: Step 7

8. spring-boot-starter-actuator

About: The *spring-boot-starter-actuator* starter provides auto-configuration and dependencies to quickly use actuator features in Spring Boot applications.

Mini Project: System Monitoring Dashboard

Expose health, metrics, and custom endpoints.

Suggested Order: Step 8

9. spring-boot-starter-mail

About: The *spring-boot-starter-mail* starter provides auto-configuration and dependencies to quickly use mail features in Spring Boot applications.

Mini Project: Email Notification Service

Send account activation and password reset emails.

Suggested Order: Step 9

10. spring-boot-starter-cache

About: The *spring-boot-starter-cache* starter provides auto-configuration and dependencies to quickly use cache features in Spring Boot applications.

Mini Project: Product Price Caching Service

Cache frequently accessed data using EhCache/Redis.

Suggested Order: Step 10

11. spring-boot-starter-test

About: The *spring-boot-starter-test* starter provides auto-configuration and dependencies to quickly use test features in Spring Boot applications.

Mini Project: Unit Testing & Integration Testing

Write tests for your Employee CRUD API.

Suggested Order: Step 11

12. spring-boot-starter-aop

About: The *spring-boot-starter-aop* starter provides auto-configuration and dependencies to quickly use aop features in Spring Boot applications.

Mini Project: Logging & Performance Monitoring

Use Aspect Oriented Programming for logging execution time.

Suggested Order: Step 12

13. spring-boot-starter-batch

About: The *spring-boot-starter-batch* starter provides auto-configuration and dependencies to quickly use batch features in Spring Boot applications.

Mini Project: Data Import Job

Import CSV data into Database with batch processing.

Suggested Order: Step 13

14. spring-boot-starter-quartz

About: The *spring-boot-starter-quartz* starter provides auto-configuration and dependencies to quickly use quartz features in Spring Boot applications.

Mini Project: Scheduled Reminder Service

Send notifications every day at a specific time.

Suggested Order: Step 14

15. spring-boot-starter-amqp

About: The *spring-boot-starter-amqp* starter provides auto-configuration and dependencies to quickly use amqp features in Spring Boot applications.

Mini Project: Message Queue with RabbitMQ

Send/receive messages for order processing.

Suggested Order: Step 15

16. spring-boot-starter-websocket

About: The *spring-boot-starter-websocket* starter provides auto-configuration and dependencies to quickly use websocket features in Spring Boot applications.

Mini Project: Chat Application

Real-time chat between multiple users with WebSocket.

Suggested Order: Step 16

17. spring-boot-starter-data-redis

About: The *spring-boot-starter-data-redis* starter provides auto-configuration and dependencies to quickly use data redis features in Spring Boot applications.

Mini Project: Session Management with Redis

Store user sessions in Redis for scalability.

Suggested Order: Step 17

18. spring-boot-starter-oauth2-client

About: The *spring-boot-starter-oauth2-client* starter provides auto-configuration and dependencies to quickly use oauth2 client features in Spring Boot applications.

Mini Project: Google Login Integration

Authenticate users with Google OAuth.

Suggested Order: Step 18

19. spring-boot-starter-data-mongodb

About: The *spring-boot-starter-data-mongodb* starter provides auto-configuration and dependencies to quickly use data mongodb features in Spring Boot applications.

Mini Project: Product Catalog Service

Store product data in MongoDB.

Suggested Order: Step 19

20. spring-boot-starter-logging

About: The *spring-boot-starter-logging* starter provides auto-configuration and dependencies to quickly use logging features in Spring Boot applications.

Mini Project: Centralized Logging System
Configure Logback/SLF4J for structured logs.

Suggested Order: Step 20