



ANGULAR
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INSIDE KNOWLEDGE

Spring Workshop



0 - Introduction

About Me...



- Rainer Hahnekamp

ANGULARarchitects.io

- Trainings and Consulting
- Working with Spring since 2011

<https://www.youtube.com/c/RainerHahnekamp>



<https://www.ng-news.com>



@RainerHahnekamp



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Goals

- Solid Foundation
- Ability to learn advanced topics on your own
- Practical Approach
 - Testing almost from the Start
- Focus on communication with SPAs (Angular)
- "Guided Tutorial with Theory"
 - Lots of Doing
 - Get a feeling for typical for programming in Spring



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Housekeeping

- Schedule: 9:00 - 16:30
 - Lunch between 12.00 - 13.00
 - 15 Minutes breaks in afternoon and morning sessions
 - Discussions after 16.30
- GitHub Repository
- Our Application
- Solution Branches
- Exercise: **Leave "Exercise" Room when you are done**
- Recording



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Agenda

- Introduction
- Basics
 - Setup
 - Controller
 - IoC
- Testing
 - Unit & Integration
- Web
 - Basics
 - OpenAPI
 - Upload/Download
- Data
- Security (**as Video**)
- Group Exercise
 - Administration Guides
 - Code Review
- Discussions on various Topics
 - Domain Driven Design
 - Microservices / Modulith
 - Containerization
 - Observability



Exercise-intensive workshop

Theory (Slides) &
Live Coding

Exercise Time

Discussion of the
Solution



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Engage!



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Introduction Round

1. Who are you?
2. What do you do (in your job)?
3. What topic(s) interests you the most?



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Java

- Designed as programming language for the web
- Compiles into Bytecode
- JVM as Interpreter (write once, run everywhere)
 - GraalVM
- JVM Languages: Kotlin, Scala, Groovy, Clojure



Java Platform Editions

J2SE
(Standard)

J2EE
(Enterprise)

J2ME
(Micro)

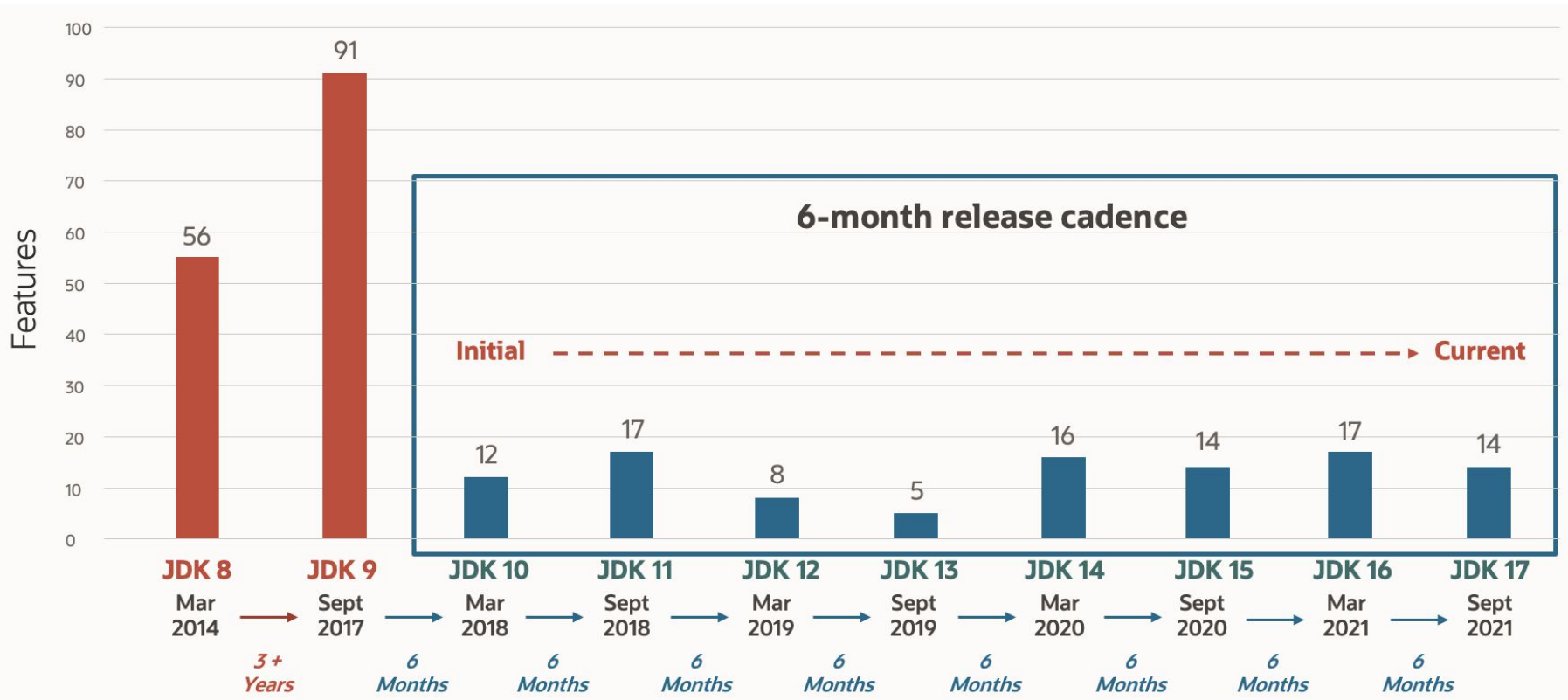
Java FX

Java FX



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Java - History



<https://inside.java/2021/09/14/the-arrival-of-java17/>



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Java & JDKs

- OpenJDK as Open Source in
- Java 11: OpenJDK vs. OracleJDK vs. Custom OpenJDKs
 - OpenJDK is open source and freely available
 - OpenJDK by Oracle is commercial
 - Free-usage possible
 - Changes between v11 and v17
 - Alternatives
 - Differences between vendors
 - Mostly based on OpenJDK
 - Amazon Corretto, Azul, SAP, Microsoft, RedHat

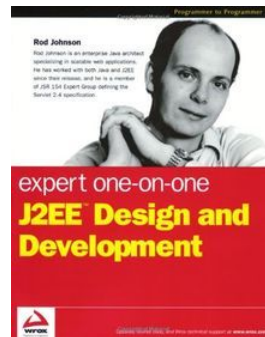


Spring

- First release in 2003
- Not a framework but an ecosystem
- Server-side rendering via Thymeleaf, FreeMarker, JSP
- Support for new technologies
 - WebFlux
 - Kotlin
 - GraalVM
- Heavily based on Reflection
- Part of VMware



Jürgen Höller



Rod Johnson



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Spring Ecosystem

- Framework
- Boot
 - Layer on top of Framework and Projects
 - Starter Projects
 - Auto Configuration
- Projects
 - Data
 - Security
 - Cloud



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Opinionated,
Pre-Configured, Best
Practices

Spring Boot

Spring Security

Spring Data

Abstraction Layer to
Java Standards

Framework

DI

Testing

MVC

Transactions

Validation

Logging

Java Standards
(J2EE/Jakarta)

JDBC

Servlet
API

JTA

JMS

JPA

...

Spring Framework 6 & Spring Boot 3

- Requires Java 17
- Migrating namespace javax → jakarta
 - Former JEE
 - Eclipse Foundation instead of Oracle
 - Issues with licences



Spring Initializr: <https://start.spring.io/>



Project

☒ Gradle - Groovy

☐ Gradle - Kotlin ☐ Maven

Spring Boot

☐ 3.0.1 (SNAPSHOT) ☒ 3.0.0 ☐ 2.7.7 (SNAPSHOT) ☐ 2.7.6

Project Metadata

Group

Artifact

Name

Description

Language

☒ Java ☐ Kotlin ☐ Groovy

Dependencies

ADD DEPENDENCIES... ⌘ + B

No dependency selected



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Spring Setup via IntelliJ

New Project

Spring Boot:

☒ Download pre-built shared indexes for JDK and Maven libraries

Dependencies:

- Developer Tools
 - ☒ **GraalVM Native Support**
 - ☐ Spring Boot DevTools
 - ☐ Lombok
 - ☐ Spring Configuration Processor
- Web
 - ☐ Spring Web
 - ☐ Spring Reactive Web
 - ☐ Spring for GraphQL
 - ☐ Rest Repositories
 - ☐ Spring Session
 - ☐ Rest Repositories HAL Explorer
 - ☐ Spring HATEOAS
 - ☐ Spring Web Services
 - ☐ Jersey
 - ☐ Vaadin

GraalVM Native Support

Support for compiling Spring applications to native executables using the GraalVM native-image compiler.

Added dependencies:

No dependencies added



Links to Bookmark

- <https://docs.spring.io/spring-framework/docs/current/reference/html/>
- <https://docs.spring.io/spring-boot/docs/current/reference/html/>
- <https://www.baeldung.com/>
- <https://mkyong.com/>
- <https://stackoverflow.com/>
- <https://dzone.com/>
- <https://blogs.oracle.com/javamagazine/>
- <https://www.youtube.com/@DevovxForever>



Setup our Application



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