Spring Workshop

0 - Introduction

About Me...

- Rainer Hahnekamp

  ANGULARarchitects.io

- Trainings and Consulting

- Working with Spring since 2011

Professional NgRx

Professional Angular Testing

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

Housekeeping

- Schedule: 9:00 - 16:30
  - Lunch between 12.00 - 13.00
  - 15 Minutes breaks in afternoon and morning sessions
- GitHub Repository
- Our Application
- Solution Branches

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Agenda

- Introduction
- Basics
  - Setup
  - Controller
  - IoC
- Testing
  - Unit & Integration
- Web
  - Basics
  - OpenAPI
  - Upload/Download

- Data
  - Spring Data JPA
  - Spring Data JDBC
- Security
  - OAuth2
  - JWT
- Monoliths & MicroServices
  - WebClient, Feign, RabbitMQ
  - Modulith, ArchUnit
- GraalVM

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Exercise-intensive workshop

Theory (Slides) & Live Coding

Exercise Time

Discussion of the Solution

Engage!

Introduction Round

1. Who are you?

2. What do you do (in your job)?

3. What topic(s) interests you the most?

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)
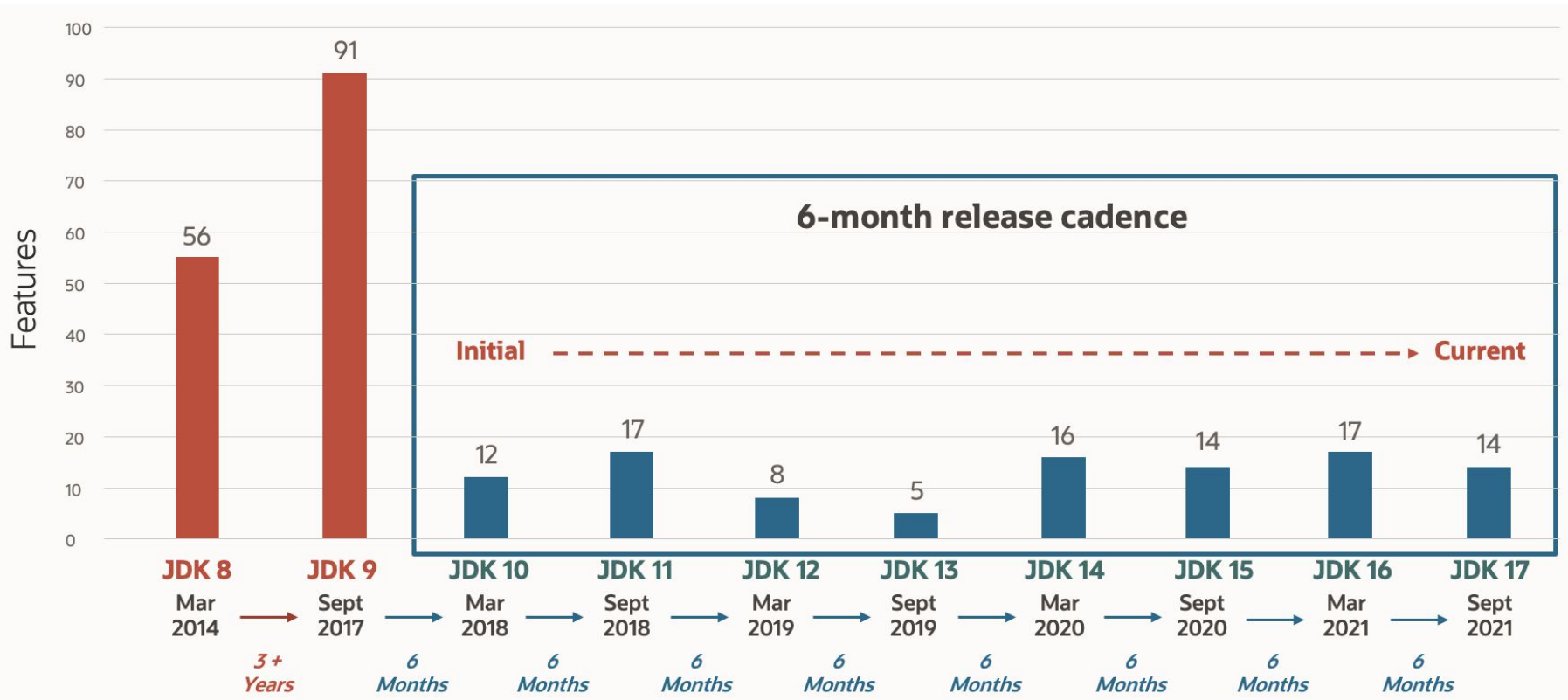
J2EE
(Enterprise)

J2ME
(Micro)

Java FX

Java Card

Java - History

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

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
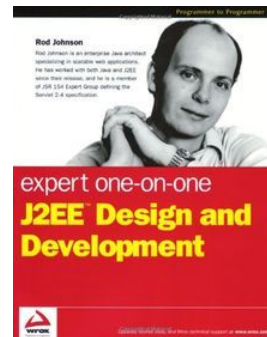   - Amazon Coretto, Azul, SAP, Microsoft, RedHat

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

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/

spring initializr

Project
- ● Gradle - Groovy
- ○ Gradle - Kotlin
- ○ Maven

Language
- ● Java
- ○ Kotlin
- ○ Groovy

Spring Boot
- ○ 3.2.0 (SNAPSHOT)
- ○ 3.1.2 (SNAPSHOT)
- ● 3.1.1
- ○ 3.0.9 (SNAPSHOT)
- ○ 3.0.8
- ○ 2.7.14 (SNAPSHOT)
- ○ 2.7.13

Project Metadata

Group   com.example

Artifact   demo

Name   demo

Description   Demo project for Spring Boot

Package name   com.example.demo

Packaging   ● Jar   ○ War

Java   ○ 20   ● 17   ○ 11   ○ 8

Dependencies   ADD DEPENDENCIES... ⌘ + B

No dependency selected

Spring Setup via IntelliJ

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://www.jhipster.tech/

- https://blogs.oracle.com/javamagazine/

- https://www.youtube.com/@DevoxxForever

Setup our Application