Presents

Introduction to Spring

Learning Objectives

- In this chapter we will:
  - ✓ Learn what Spring is and why we use it
  - ✓ Learn what Spring projects and the Spring ecosystem is
  - ✓ Learn how to access Spring resources online

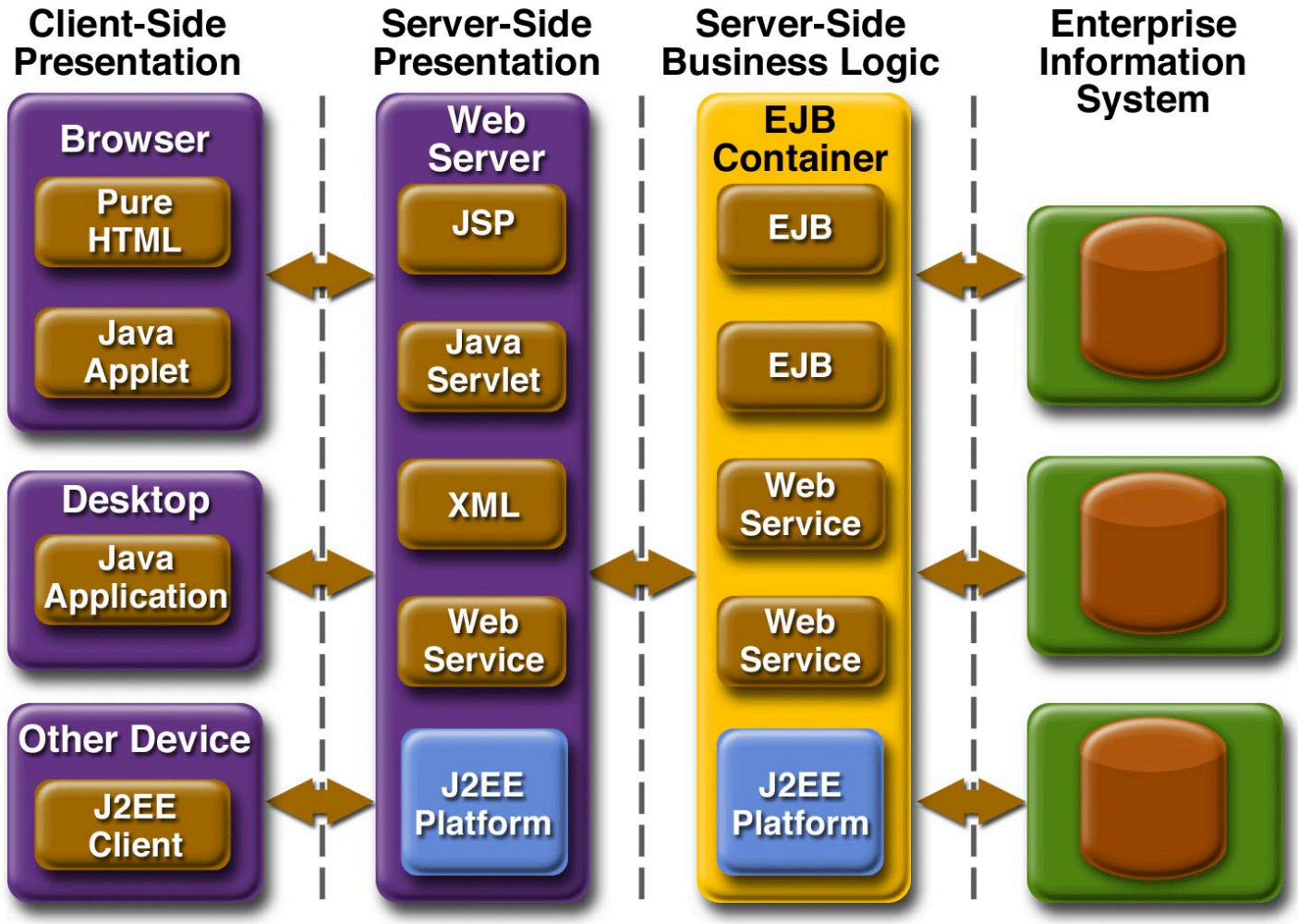
Application Architecture

- So far, we have been being building very simplistic Java applications
- As applications get more complex it becomes increasingly difficult to:
  - ✓ Manage the creation and organization of objects.
  - ✓ Ensure that all the object dependencies are satisfied
  - ✓ Deploy and run complex applications
  - ✓ Satisfy the non-functional requirements.
    - Load, stress, fail-over, throughput, etc.
- This is no Java solution because this is a software architecture problem, not a programming problem.

J2EE

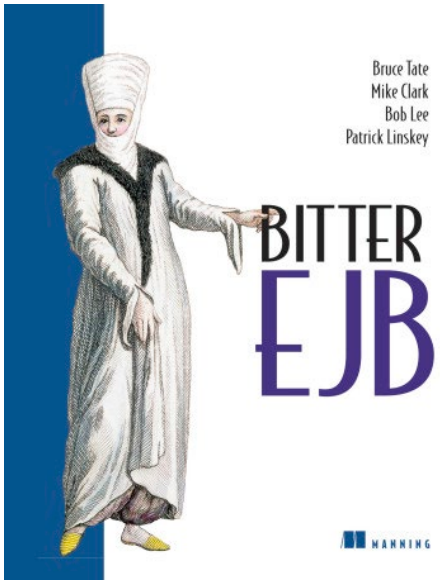
- SUN tried to solve the problem by introducing an “enterprise architecture” called J2EE
  - ✓ It was based on application servers like Tomcat into which runtime containers were deployed
  - ✓ The containers contained a deployable form of a Java application called an Enterprise Java Bean (EJB)
    - These were wrappers around one of more POJOs to make them deployable onto an application server
  - ✓ Very popular due to the Web components like Java Server Pages and Servlets
- EJBs were a failure
  - ✓ The required a lot of configuration and boilerplate code
  - ✓ And they performed horribly

J2EE


Client-Side Presentation
Server-Side Presentation
Server-Side Business Logic
Enterprise Information System
Browser
Pure HTML
Java Applet
Desktop
Java Application
Other Device
J2EE Client
Web Server
JSP
Java Servlet
XML
Web Service
J2EE Platform
EJB Container
EJB
EJB
Web Service
Web Service
J2EE Platform

The Spring Insurgency

- J2EE was so problematic to use that Rod Johnson created the first version of Spring as an alternative
  - ✓ The first version was in 2004 when frustration with J2EE was at its peak
  - ✓ Some of the developers of EJBs wrote a book describing how to work around the design problems of EJBs
- Spring became the go-to alternative to J2EE



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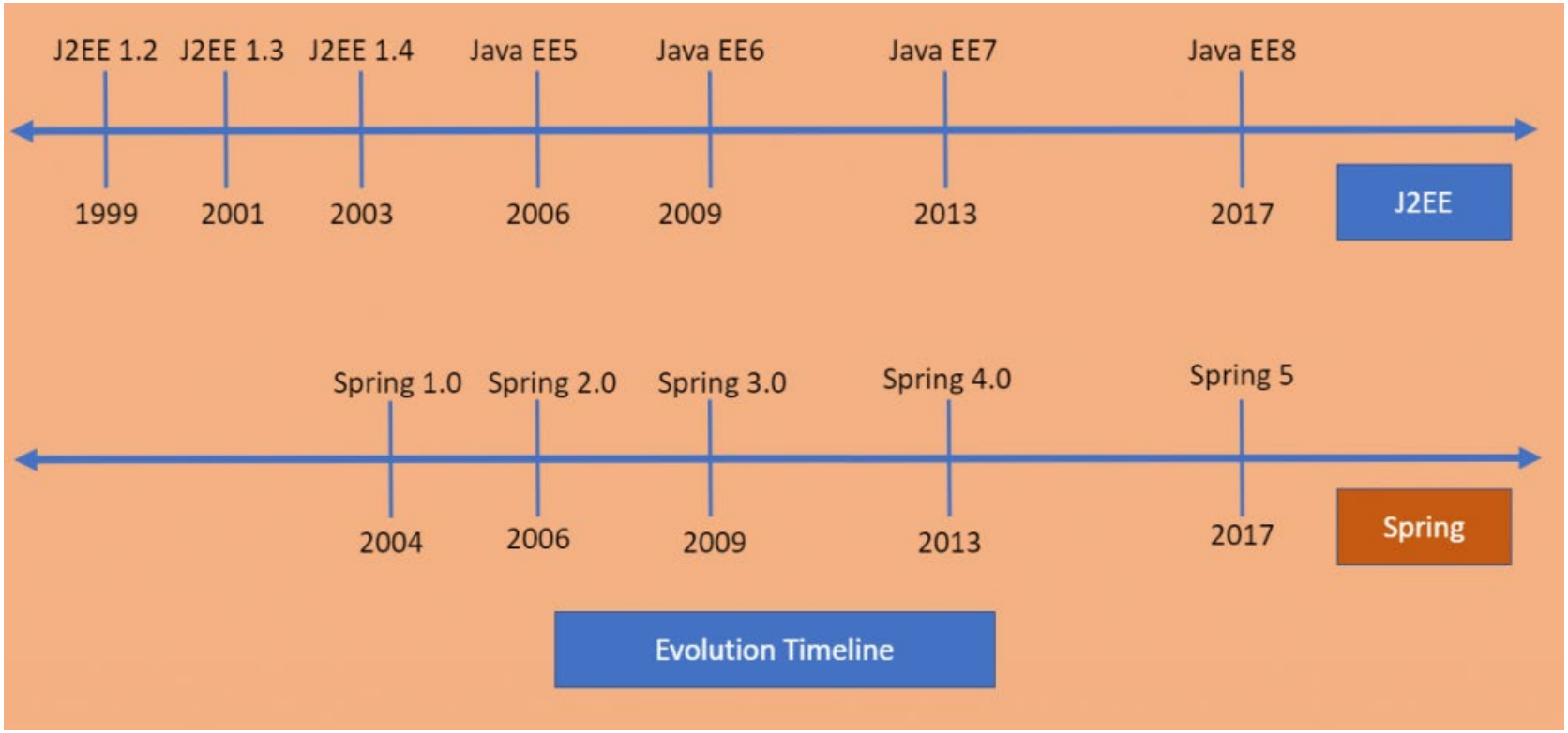
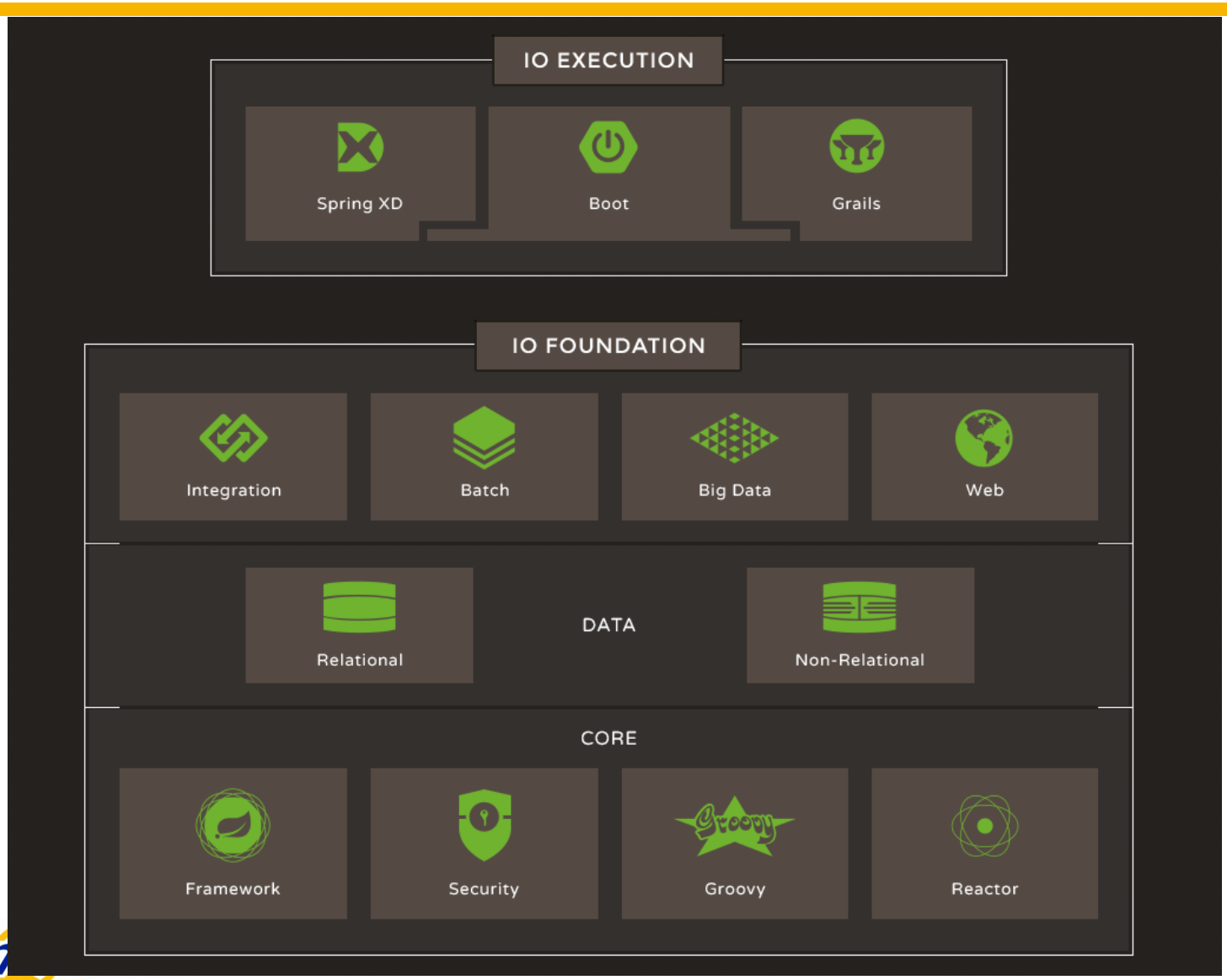
The Spring Timeline



The Spring Impact

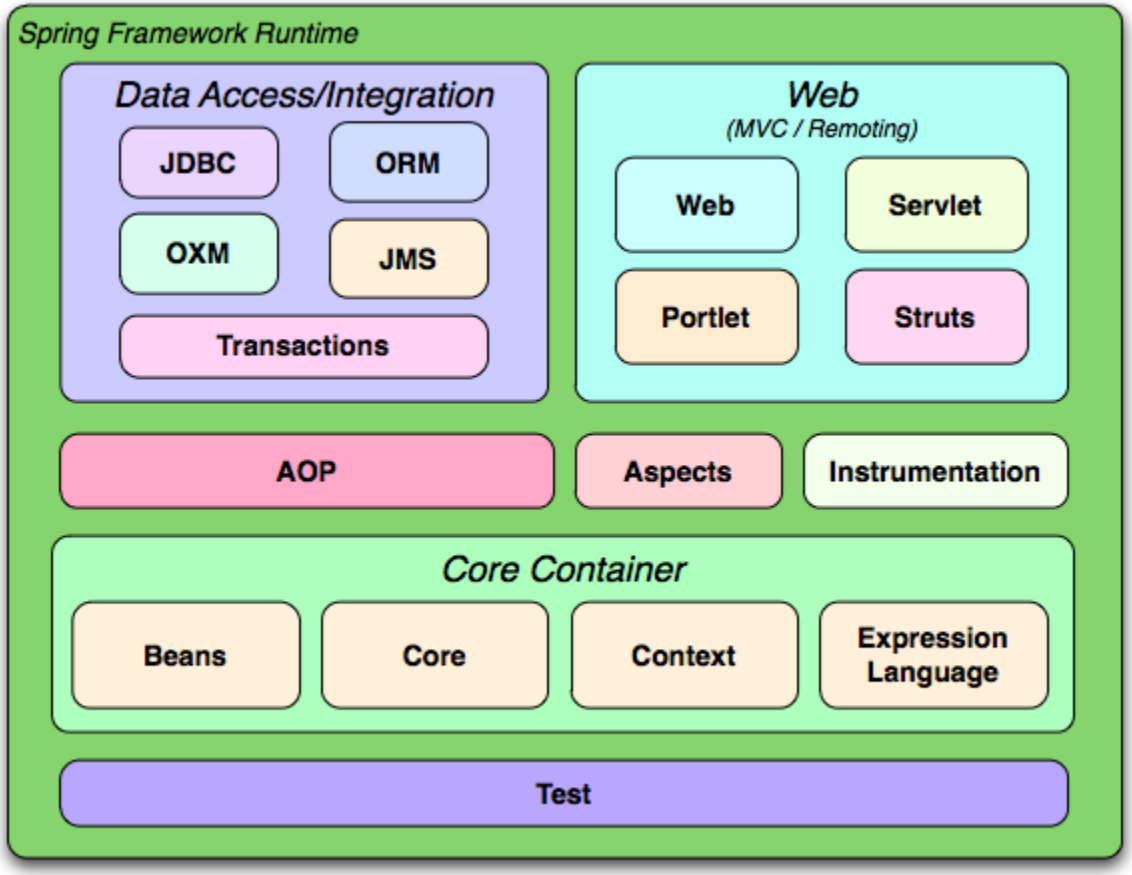
- After J2EE was rebranded as Java EE
  - ✓ Many of the features of Spring were adopted by Java EE
  - ✓ Especially the techniques of Inversion of Control (IoC) and Dependency Injection (DI)
- Spring has evolved into an ecosystem
  - ✓ Supports a number of projects that cover a wide range of development needs
  - ✓ Similar to the Apache project ecosystem
- This collection of projects is referred to as the Spring Platform
  - ✓ More info at http://spring.io

The Spring Platform



Spring Framework

- The Spring Framework is organized into modules



Spring Framework

- In the modules that follow
  - ✓ We will explore some basics functionality of the Core container
  - ✓ We will use the Spring Boot application to simplify the development and deployment of a Java application

Questions