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Spring Framework

-built in reponse to the complexiity of developing applications using Java’s enterprise framework (J2EE aka Jave EE)

-web dev, data access easier to implement, reduce boiler plate code, A diagram of a spring cloud

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Spring Boot

-before boot, Spring based apps had always involved a lot of choice making

Spring Cloud

-built on top of Boot

-simplified the development of apps that make use of distributed architectures (like microserives)

Why Spring?

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-open source

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Getting to know Spring with Spring Boot

-Can build web and non web apps

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-SpringBoot will automatically configure and set up an app based on its surrounding

-Standalone, don’t need to deploy the app into a web server. Literally just run the app with one command

-Opinionated, meaning that SB has a chosen way of doing things by default

Intelligent Auto-configurations

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Real life analogy, lets you have a plate. You might think you want to give them a fork/spoon but now the plate has a cookie. So no fork/spoon needed.

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-Think of Annotations as metadata that can be read at runtime and you can use to make decisions upon

Standalone Applications that just run

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A diagram of a software development

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-Package is like zipping up the directory

-Deploy usually means copying the app package to a specific directory or uploading it to the web server via a web browser

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-SB is just one command

-SB starts an embedded web server within your app

An Opinionated View of Spring

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Creating your first Spring Boot Application -Dan Bunker

SB: Efficient Development….. Dustin Schultz (technology behind auto-configurations)

The Spring framework is just a software framework

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-functionality like web development and data access

Spring Framework

-is modular (meaning broken up into separate individual pieces)

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-Aspect orientated programming

A diagram of a spring core

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Core:

-Foundational module upon which every other module is built

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A comparison of a smiley face

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Example: Computer object that has HDD and Memory object

Option 1 would be like if you buy a computer that you couldn’t change memory. When the computer was created, it created the memory as part of the computer

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Description automatically generatedOption2, you change one without having to change the other. Computer and memory are sold separately.

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Spring Webflux

-Spring reactive web programming framework

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Programming paradigm

-means a way of programming, writing code

Increase modularity

-increase organization

Cross cutting

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-Example is money transaction from the bank

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-Apps often need to share data or work with other apps

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A screenshot of a phone

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A screen shot of a computer

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-Code that has no dependencies just means it doesn’t depend on other code to do its work. Easy to test

-When code has dependencies, important on how those dependencies behave in order to restrict testing to just the code and not the dependencies

-So during test, dependent code can be replaced with code that behaves a certain way

Mocking

-Action of replacing pieces of code with controlled code

-To be clear, in unit testing, we don’t use DI

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-Cleaning up example is messing with the DB, so Spring Framework will clean up those tests

Exploring other Spring Projects

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-Spring Data project extends data access capabilities provided by Spring Framework

-SF particularly focus on one type of DB (relational)

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Description automatically generatedSpring Cloud

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-makes it easier to build distributed systems (microservices)

-How does a microservice find another microservice? Problem is called Service discovery

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-Spring Cloud helps with this by @