Software Engineering Design Week3 Spring Boot Introduction
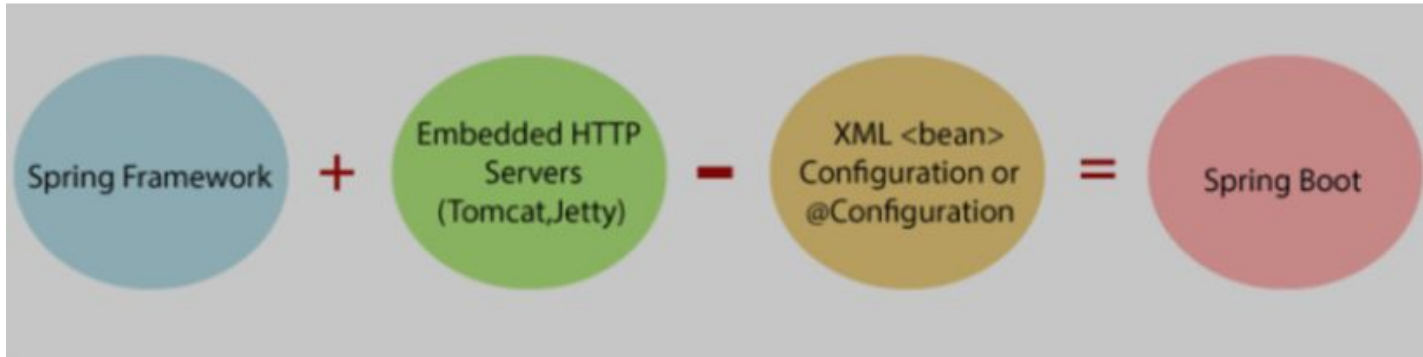
Team 3
Presenter 張君豪

What is Spring Boot ?

- A framework on top of Spring framework
  - Autoconfigure XML file
  - Embed Tomcat, Jetty or Undertow directly (no need to deploy WAR files)
  - Provide production-ready features such as metrics, health checks, and externalized configuration
  - …
  - Write less code!

Spring Framework **+** Embedded HTTP Servers (Tomcat,Jetty) **-** XML \<bean> Configuration or @Configuration **=** Spring Boot

Spring vs. Spring Boot

- Many things you need to configure(XML file) in Spring will be auto-configure in Spring Boot.

- Collecting all the required **spring components** together, setting up **library dependencies** in gradle/maven, and then configuring the required spring **beans** using xml, **annotations**, or **java code** requires quite an effort within the Spring framework.

Modules

- Spring Boot (+ autoconfigure)

- Spring Boot Starters

- Spring Boot CLI

- Spring Boot Actuator

- Spring Boot Devtools

Modules - Spring Boot

- Providing features that support the other parts of Spring Boot

- Embedded web applications (Tomcat, Jetty, or Undertow)

Modules - Spring Boot Auto-configuration

- A form of hints that we can give about our program to the compiler and runtime
- Auto define and process bean definitions
- Auto-configuration based on the JAR dependencies
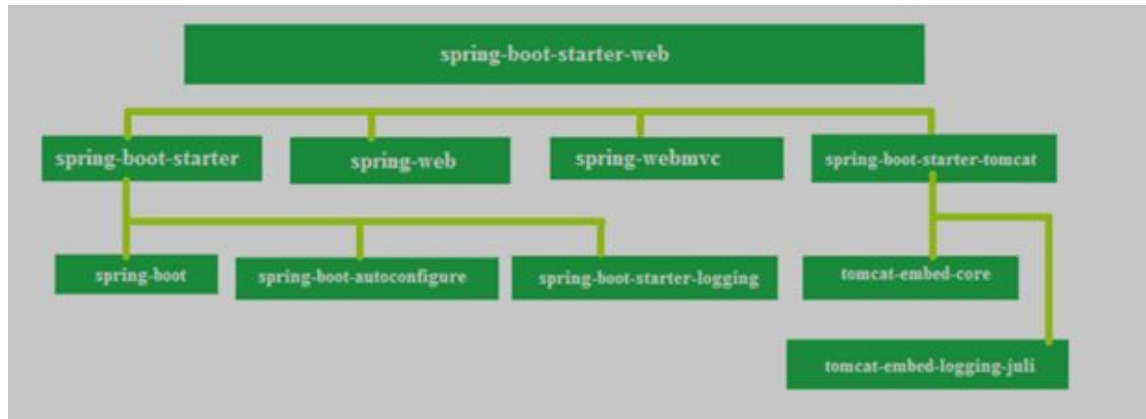- Reduce developers configuration time

```
@Configuration
@ComponentScan
@EnableAutoConfiguration
public class VehicleFactoryConfig {
```

⟹

```
@SpringBootApplication
public class VehicleFactoryConfig {
```

Modules - Spring Boot Starters

- A set of dependency descriptors containing most of the dependencies

- Wraps up dependencies often used in projects

Modules - Spring Boot CLI

- Comand line tool for quicky build a Spring application

- Auto-configure the starter dependencies of libraries and confiurations

- Let we focus only on writing your application-specific code

Modules - Spring Boot Actuator

- Post production features

- Allows you to **monitor** and **interact** with your Spring application with **endpoints**

- Offers the ability to inspect the internals of your application at runtime

- It provides details of all beans configured in the Spring application context

Modules - Spring Boot Devtools

- Provide useful tools for development use
    - ex: automatic restart

- Will be disabled in production

Languages and Lines Count

```
spring-boot + spring-boot-autoconfigure : 170811
spring-boot-actuator + spring-boot-actuator-
autoconfigure : 66055
spring-boot-cli : 12280
spring-boot-devtools : 13127
spring-boot-starters : 783
spring-boot-test + spring-boot-test-autoconfigure :
25858
```

by cloc

Work Division

- org.springframework.boot.SpringApplication
    - 陳凱：boot.SpringApplication
    - 張翔文：boot.SpringApplication
    - 張君豪：boot.context.properties.bind.Bindable
    - 毛煥為：boot.context.properties.source.ConfigurationPropertySources
    - 鄒咏霖：boot.convert.ApplicationConversionService
    - 潘荏羽：boot.web.reactive.context.AnnotationConfigReactiveWebServerApplicationContext
    - 王佩琳：boot.web.servlet.context.AnnotationConfigServletWebServerApplicationContext

- 滾動式調整…

Reference

- [Introduction to Spring Boot. Spring Boot is a project that is built… | by Revda Uluışık | adessoTurkey | Medium](#)

- [spring-projects/spring-boot: Spring Boot (github.com)](#)

- [Spring Boot](#)