Spring Framework 4 Cheat Sheet

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Modules

Core	spring-core spring-beans spring-context spring-expression
AOP and Instrumentation	spring-aop spring-aspects spring-instrument spring-instrument-tomcat
Messaging	spring-messaging
Data Access/Integration	spring-jdbc spring-tx spring-orm spring-oxm spring-jms
Web	spring-web spring-webmvc spring-webmvc-portlet spring-websocket
Test	spring-test

http://docs.spring.io/spring-framework/docs/current/spring-framework-reference/html/overview.html#overview-modules

Spring MVC - Controller

@Controller	Annotation to indicate that the class is a controller class.
@RestController	A convenience annotation that is itself annotated with `@Controller` and `@ResponseBody`. Used in controllers that will behave as **RESTful resources**.
@RequestMapping	Annotation to be used on methods in `@RestController` classes. You can provide an **URI** to be served as **RESTful service**.
@ModelAttribute	Annotation used to bind values present in views.

Configuration

@Configuration	Annotation used to provide **configurations**.

Configuration (cont)

@Bean	Annotation that acts like a **provider** where you can define **how** the bean is **instantiated** when a **injection** of that type is requested. Instances of `@Bean` annotated methods will act as **singletons**.

Properties Evaluation Sequence

Command-line arguments	`java -Dproject.name=Test -jar app.jar`
System properties	`System.getProperties()`
Environment Variable	`export PROJECT_NAME=Test`
External properties/yml file	`project.name=Test`
Internal properties/yml file	`project.name=Test`

The default properties/yml files are **application.properties** and **application.yml** and they are located in `/src/resources`.

Spring Boot Initializer

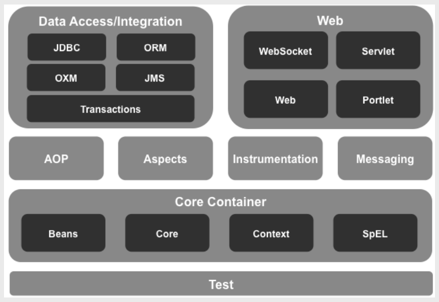
http://start.spring.io	Web service that allows the user to specify the project metadata and dependencies as well as download the initial structure.
Spring CLI	A CLI tool that interacts with **http://start.spring.io** service to scaffold a new project.
Spring Tool Suit	Eclipse-based IDE that also interacts with **http://start.spring.io** to scaffold a new project.
Intellij IDEA	Intellij also provides a way of creating a new project via **http://start.spring.io**.

Spring Boot - Auto Configuration

@ConditionalOnClass	`@ConditionalOnClass(Tomcat.class)`	Only available if the Tomcat class is found in the classpath.
@ConditionalOnProperty	`@ConditionalOnProperty(name = "tomcat.version", matchIfMissing = true)`	Only available if the property `tomcat.version` is set to true.

Auto configuration is just the combination of `@Configuration` and `@Conditional*` annotations in order to correctly register beans.

Architecture



Dependency Injection

@Resource	Annotation used to **inject** an object that is already in the **Application Context**. It searches the instance **by name**. It also works on setter methods.
@Autowired	Annotation used to **inject** objects in many possible ways, such as: **instance variable, constructor and methods** It **does not rely on name** as `@Resource`, so, for multiple concrete implementations, the `@Qualifier` annotation must be used with it.
@Qualifier	Annotation used to **distinguish** between **multiple** concrete implementations. Used alongside with `@Autowired` annotation that does not rely on name.
@Primary	Annotation used when **no name** is provided telling *Spring* to **inject** an object of the annotated class **first**. Used along with `@Component`.
@Component	Generic stereotype annotation used to tell *Spring* to **create an instance** of the object in the **Application Context**. It's possible to define any **name** for the instance, the default is the class name as **camel case**.
@Controller	Stereotype annotation for presentation layer.
@Repository	Stereotype annotation for persistence layer.
@Service	Stereotype annotation for service layer.

Profile

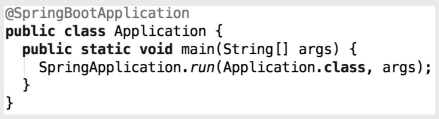
spring.profiles.active	Property to be set in **application.properties** in order to tell *Spring* what profiles are active.
@Profile("!dev")	Annotation used to define which profile **can execute** the annotated method.

Spring Boot - Basics

@SpringBootApplication	Initial annotation that comprises the following annotations: `@SpringBootConfiguration`, `@EnableAutoConfiguration` and `@ComponentScan`.
@SpringBootConfiguration	Indicates that a class provides Spring Boot application `@Configuration`.
@EnableAutoConfiguration	Enable auto-configuration of the Spring Application Context, attempting to guess and configure beans that you are likely to need.
@ComponentScan	Configures component scanning directives for use with `@Configuration` classes.

Most of the time you will need only to declare the `@SpringBootApplication` annotation.

Spring Boot - Example



```
@SpringBootApplication
public class Application {
  public static void main(String[] args) {
    SpringApplication.run(Application.class, args);
  }
}
```