APPENDIX B. ERRATA

# **Errata**

Hi guys, I am really thankful to all of you that have bought the book and have contributed to finding mistakes in it and in the code. Because of you, I have taken another careful look at the book questions and answers and decided this errata was needed.

### **B.1** Book corrections

## **Chapter 1: Introduction**

The section **About the Certification Exam** needs an update on pages 3 and 4. Starting with January 2017 the exam is taken directly from home and the voucher is valid only three months. (*Submitted by Vittorio Marino*)

## Chapter 2: Spring Bean LifeCycle and Configuration

In the section Setter Injection section, page 34 in the examples a bean named simpleBean0 is declared, but not used as a dependency in the complexBean. The intended name, was obviously simpleBean. (Reported by Gautham Kurup)

! The original (erroneous) code sample is this:

! And in future editions of the book, will be replaced with this:

The same bean is later referred in the paragraph explaining the behaviour.

The original (erroneous) paragraph is this:

The code and configuration snippets above provide all the necessary information so that the Spring container can create a bean of type SimpleBeanImpland a bean named simpleBean0 and then inject it into a bean of type ComplexBeanImpl named complexBean.

! And in future editions of the book, will be replaced with this: The code and configuration snippets above provide all the necessary information so that the Spring container can create a bean of type SimpleBeanImpl and a bean named simpleBean and then inject it into a bean of type ComplexBeanImpl named complexBean.

Other small typos and mishaps.

Page	Original	Correction
43	Equivalent to	Equivalent to
	list.add(new SimpleBeanImpl).	<pre>list.add(new SimpleBeanImpl()).</pre>
63	for (String name :	for (String name :
	<pre>ctx.getAliases("sb02/sb03") ) {</pre>	ctx.getAliases("sb02/sb03") ){
	logger.info ("Alias for $sb04 \rightarrow$ "	logger.info ("Alias for ${ m sb02/sb03}$
	+ name);	->" + name);
	}	}
66	<pre>INFO c.p.ApplicationContextTest</pre>	Leftover log entry from code that was removed
	- >> bye bye.	from the book.
70	The init method method must return void, have	The init method method should return void, be-
	no arguments defined, and can have any access	cause if a value is returned, it is ignored by the
	right	container, must have no arguments defined, and
		can have any access right
72	The InstantiatingBean interface	The InitializingBean interface
74	because the base-packagel	because the base-package
75	The methods that can be annotated with	The methods that can be annotated with
	@PostConstruct must respect the same	@PostConstruct must respect the same
	rules as every other init method: they must have	rules as every other init method: they must have
	no arguments, return void, and they can have any	no arguments, return any type (preferably void,
	access right.	because the returned value is ignored by the
		container anyway), and they can have any access
		right.
80	The destroy method must return void.	The destroy method can return any type, but as
		the container ignores the returned value, void is
		recommended.
108	@Cofiguration (in "Stereotypes annotations"	@Configuration (in "Stereotypes annota-
	list)	tions" list)

**Table B.1:** Corrections Table (part 1)

In page 76 the developer is invited to do a practice exercise and add an initialisation method called nitMethod2 and check to see how the log will change. The log printed afterwards assumes that the initialisation methods print the exact name of the "stage" they are executed in and thus the declaration of the ComplexBean in page 75 should be modified as follows(only the initialisation methods are depicted):

```
private void initMethod2() {
    logger.info(" --> Stage 4: Calling the initMethod2.");
}

@PostConstruct
private void initMethod() {
    logger.info(" --> Stage 3: Calling the initMethod.");
    long ct = System.currentTimeMillis();
    if (ct % 2 == 0) {
        simpleBean2 = new SimpleBean();
    }
}
...
}
```

(Observation submitted by Süleyman Onur)

In **page 90** a configuration file is depicted that is confusing for some developers, because contains two configurations versions separated only by a comment.

To make things clearer, in the following configuration snippet, two equivalent configurations file are depicted.

(Observation submitted by Süleyman Onur)

In section Using Multiple Sources of Configuration, page 94, in class BootstrapTest the context declaration is not quite correct. Because class RequestRepoConfig is annotated with @Import (DataSourceConfig.class), specifying the DataSourceConfig.class as argument when creating the context is not really necessary and redundant. So the setUp() method should be modified to:

(Observation submitted by Süleyman Onur)

In the section **Bean Naming section**, page 94, there is a huge error in the samples for <code>@AliasFor</code>. It was implied there that the value attribute of the <code>@Repository</code> can be aliased. At the time when the book was written, Spring 4.2 was under development and more information about the limits of the <code>@AliasFor</code> were published later on. Because autowiring by type was used, the tests still passed thus hiding the erroneous implementation. So there is a code sample and some text there which are erroneous, and should be skipped altogether.

#### ! The original (erroneous) section is this:

And even more can be done. Aliases for meta-annotation attributes can be declared. Let's say that we do not like the value attribute name of the <code>@Repository</code> annotation and we want in our application to make it more obvious that the <code>@Repository</code> annotation can be used to set the id of a bean, by adding an id attribute that will be an alias for the value attribute. The only conditions for this to work are that the annotation declaring the alias has to be annotated with the meta-annotation, and the <code>annotation</code> attribute must must reference the meta-annotation.

Thus, the repository beans can be declared as depicted in the following code snippet:

```
import com.ps.MyRepoCfg;
...

//JdbcRequestRepo. java bean definition
@MyRepoCfg(id = "requestRepo")
public class JdbcRequestRepo extends JdbcAbstractRepo<Request>
implements RequestRepo{
...
}
```

! And in future editions of the book, will be replaced with this:

And even more can be done. Aliases for meta-annotation attributes can be declared. Let's say that we do not like the lTout attribute name of the @DsCfg annotation and we just want to refer to it differently. The only conditions for this to work are that the annotation declaring the alias has to be annotated with the meta-annotation, and the annotation attribute must must reference the meta-annotation.

```
package com.ps;
import org.springframework.core.annotation.AliasFor;
@DsCfg
```

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```
public @interface MyDsCfg {
     @AliasFor(annotation = DsCfg.class, attribute = "lTout")
     int timeout() default 200;
}
```

Thus, we can now apply the new annotation on the repository beans, that can be declared as depicted in the following code snippet:

! @AliasFor cannot be used on any stereotype annotations. The reason is that the special handling of these value attributes was in place years before @AliasFor was invented. Consequently, due to backward compatibility issues it is simply not possible to use @AliasFor with such value attributes. When writing code to do just so (aliasing value attributes in stereotype annotations), no compile errors will be shown to you, and the code might even run, but any argument provided for the alias will be ignored. the same goes for the @Qualifier annotation as well.

This information about the <code>@AliasFor</code> annotation can be found here: https://github.com/spring-projects/springframework/wiki/Spring-Annotation-Programming-Model#1-can-aliasfor-be-used-with-the-value-attributes-for-component and qualifier.  $^{1}$ 

The sources has also been updated on the raw repository: https://github.com/iuliana/pet-sitter

<sup>&</sup>lt;sup>1</sup>The URL does not fit the page, but for electronic use the clickable URL is this: FAQ @AliasFor

Other small typos and mishaps.

Page	Original	Correction
103	The @Autowired annotation by default requires	The @Autowired annotation by default requires
	the dependency to be mandatory, but this behavior	the dependency to be mandatory, but this behavior
	can be changed, by setting the required attribute to	can be changed, by setting the required attribute to
	true:	false:
105	Table 2-3. Prefixes and corresponding paths	Table 2-3. Spring and JSR 250 annotation
		equivalents
144	When classes are annotated with this anclasses be-	When classes are annotated with this <b>annotation</b> ,
	come	classes become
145	public DataSource	public DataSource
	dataSource()	dataSource()
	throws SQLException {	throws SQLException {

**Table B.2:** Corrections Table (part 2)

Also in section **2.1 Quick quiz**, question 8, the annotation <code>@Autowired</code> is missing from the setter in option **B.**! The corrected option looks like this:

```
@Component
public class QuizBean {

@Autowired
public void setPetitBean(PetitBean petitBean) {
        this.petitBean = petitBean;
    }

@PostConstruct
private void initMethod() {
        logger.info("--> I'm calling it bean soon");
    }
}
(Submitted by Peter Jurkovic)
```

6

## **Chapter 4: Aspect Oriented Programming with Spring**

Page	Original	Correction
160	import org.aspectj.	import
	lang.annotation.Component;	org.springframework.stereotype.Component;
	import org.aspectj.	import org.aspectj.
	lang.annotation.Aspect;	lang.annotation.Aspect;
	import underlineorg.aspectj.	import org.aspectj.lang.annotation.Before;
	lang.annotation.Before;	
165	pointcut="execution(public	pointcut="execution(public *
	com.ps.repos	com.ps.repos.*
	.'JdbcTemplateUserRepo+	.JdbcTemplateUserRepo+
	.findById())"	.findById())"
166	<pre>public * com.ps.repos</pre>	<pre>public * com.ps.repos</pre>
	<pre>.*.JdbcTemplateUserRepo+</pre>	.*.JdbcTemplateUserRepo+
	.findById())	.findById()) && within(com.ps.*)
	<pre>&amp;&amp; +underlinewithin(com.ps.*)</pre>	
171	if (StringUtils.indexOfAny(pass,	if (StringUtils.indexOfAny(pass,
172	new String{"\$", "#", "\$", "%"})	new String[]{"\$", "#", "\$", "%"})
	!= -1)	!= -1)
182	execution(* update(Logn,))	execution(* update(Long,))

**Table B.3:** Corrections Table (part 3)

## **Chapter 5: Data Access**

Page	Original	Correction
193	public JdbcTemplate	public JdbcTemplate
	<pre>jdbcTemplate()</pre>	jdbcTemplate()
205	<pre>new Object{username}, rowMapper));</pre>	<pre>new Object[]{username}, rowMapper));</pre>
211	Figure 5.8 Bad caption: Created by a	Figure 5.8 Correct caption: Created by a
	EntityManagerFactoryBean	FactoryBean <entitymanagerfactory></entitymanagerfactory>
225	The @Transactiona annotation	The @Transaction annotation
227	<tx:advice id="&lt;/th"><th><tx:advice id="&lt;/th"></tx:advice></th></tx:advice>	<tx:advice id="&lt;/th"></tx:advice>
	"transactionalAdvice">	"transactionalAdvice">
	<tx:atributes></tx:atributes>	<tx:attributes></tx:attributes>
241	List <users> list = session</users>	List <users> list = session()</users>
	.createQuery("from User u	.createQuery("from User u
	where username= ?")	where username= ?")
		<pre>.setParameter(0, username).list();</pre>
249	public class TestDataConfig	<pre>public class TestDataConfig {</pre>
	{@Bean	
263	Every RepoMongoRepositorysitory inter-	Every MongoRepository interface
	face	

Table B.4: Corrections Table (part 4)

In page 220, in the nested transaction example, there is a message in the log that needs more explaining

}

# Not actually nested. That message is necessary because the current version of H2 when this book is being written does not support nested transactions.

In page 222 there is a code snippet used as example for the rollbackFor attribute that is not correct.

! The original (erroneous) snippet is this:

! The problem with this code snippet is that the exception is thrown before calling userRepo.updatePassword(..) to execute the actual operation that we are interested in. And in future editions of the book, will be replaced with this:

Same goes for the example in section Spring Programatic Transaction Model, page 233, where the code below:

```
try {
        User user = userRepo.findById(userId);
        String email = user.getEmail();
        sendEmail(email);
        return userRepo.updatePassword(userId, newPass);
} catch (MailSendingException e) {
        status.setRollbackOnly();
Should be replaced with:
try {
        int result = userRepo.updatePassword(userId, newPass);
        User user = userRepo.findById(userId);
        String email = user.getEmail();
        sendEmail(email);
        return result;
} catch (MailSendingException e) {
        status.setRollbackOnly();
```

In page 267 question 10, the quiz solution reads A,B,D,E,F. But one of the interfaces in the answer is never mentioned in the book: TransactionDefinition. (Observation by Patrick Dobner) Thus we are compensating for that here. The **Spring Programatic Transaction Model** section is missing the following paragraphs and code samples.

Another way of using transactions programmatically is to use the transaction manager directly. Spring's abstract transaction management unit is the PlatformTransactionManager interface. Regardless of the transaction manager framework provider used in an application a bean of type implementing PlatformTransactionManager can be injected and used directly. This interface defines three methods depicted in the code snippet below:

The getTransaction(..) returns a currently active transaction or creates and returns a new one, all depending on the transaction manager configuration. The parameter of type TransactionDefinition encapsulates transaction properties like isolation level, propagation behaviour, timeout, etc. It returns an object representing a transaction status of type implementing Spring's TransactionStatus interface. This object is used by the transaction manager to modify the transaction object.

The commit (...) and rollback (...) methods purpose is obvious because of their naming, they are the methods used by the transaction manager to change transaction status, depending on the success or failure of a transaction. The code snippet below depicts the previous code sample, written by using the transaction manager bean directly. As you can see the PlatformTransactionManager is autowired by Spring and can be used to commit or rollback a transaction.

```
package com.ps.services.impl;
import org.springframework.jdbc.core.JdbcTemplate;
import org.springframework.transaction.PlatformTransactionManager;
import org.springframework.transaction.TransactionDefinition;
import org.springframework.transaction.TransactionStatus;
import org.springframework.transaction.support.DefaultTransactionDefinition;
import javax.sql.DataSource;
@Service("programaticUserService2")
public class ProgramaticUserService2 implements UserService {
    private JdbcTemplate jdbcTemplate;
   private PlatformTransactionManager transactionManager;
    @Autowired
    public ProgramaticUserService2 (DataSource dataSource,
          PlatformTransactionManager txManager) {
        this.transactionManager = txManager;
        this.jdbcTemplate = new JdbcTemplate(dataSource);
```

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#### **B.1. BOOK CORRECTIONS**

}

```
@Override
public int updatePassword(Long userId, String newPass)
     throws MailSendingException {
    TransactionDefinition def = new DefaultTransactionDefinition();
    TransactionStatus status = transactionManager.getTransaction(def);
     String sql = "update P_USER set PASSWORD=? where ID = ?";
    int result;
    try {
        result = jdbcTemplate.update(sql, new Object[]{newPass, userId});
         sql = "select u.ID as ID, u.USERNAME as USERNAME," +
                    " u.USER_TYPE as USER_TYPE," +
                    " u.EMAIL as EMAIL, u.PASSWORD as PASSWORD" +
                    " from P USER u where u.ID = ?";
        User user = jdbcTemplate.queryForObject(sql,
                    new Object[]{userId}, new UserRowMapper());
        transactionManager.commit(status);
        String email = user.getEmail();
        sendEmail(email);
         return result;
     } catch (MailSendingException e) {
        status.setRollbackOnly();
     } catch (Exception e) {
         // do rollback for any exception except MailSendingException
        transactionManager.rollback(status);
        throw e;
    return 0;
}
```

### **Chapter 6: Spring Web**

In page 290, in the depiction of the WebInitializer class, all [] are missing, all because of a formatting issue. The correct version of the class, is contained in the sample code attached to the book, nevertheless I will add here the correct version of the class.

```
}
   @Override
   protected Class<?>[] getServletConfigClasses() {
      return new Class<?>[]{
               WebConfig.class
       } ;
    }
   @Override
   protected String[] getServletMappings() {
       return new String[]{"/"};
   @Override
   protected Filter[] getServletFilters() {
       CharacterEncodingFilter cef = new CharacterEncodingFilter();
       cef.setEncoding("UTF-8");
       cef.setForceEncoding(true);
       return new Filter[]{new HiddenHttpMethodFilter(), cef};
}
```

le 6-2. Spring Security chained filters and their tions  erride protected void configure tpSecurity http) throws Exception { ttp.addFilterAfter( tomConcurrencyFilter(), urityContextPersistenceFilter.class);
erride protected void configure tpSecurity http) throws Exception { ttp.addFilterAfter( tomConcurrencyFilter(),
<pre>tpSecurity http) throws Exception { ttp.addFilterAfter( tomConcurrencyFilter(),</pre>
<pre>tpSecurity http) throws Exception { ttp.addFilterAfter( tomConcurrencyFilter(),</pre>
<pre>tpSecurity http) throws Exception { ttp.addFilterAfter( tomConcurrencyFilter(),</pre>
ttp.addFilterAfter( tomConcurrencyFilter(),
<pre>urityContextPersistenceFilter.class);</pre>
security-config.xml ->
le 6-2. CSRFTokenRepository Spring Imple-
ntations
verride protected void configure
ıld be <b>jane doe</b>
ıld be:
ring[] beanNames =
<pre>.getBeanDefinitionNames();</pre>
<u>ver</u> : t: 9000
c. 9000
:
port: 9000

Table B.5: Corrections Table (part 5)

## **Chapter 7: Spring Advanced Topics**

In page 401, Table 7-4 has a wrong caption and a wrong entry for the GET method. And in page 405 the

HTTP Method	@RequestMapping	Spring 4.3 Annotation
GET	@RequestMapping(method=RequestMethod.GET)	@GetMapping
POST	@RequestMapping(method=RequestMethod.POST)	@PostMapping
DELETE	@RequestMapping(method=RequestMethod.DELETE)	@DeleteMapping
PUT	@RequestMapping(method=RequestMethod.PUT)	@PutMapping

**Table B.6:** HTTP Methods Spring annotations

WebConfig class is missing the @ from the @Configuration annotation.

## **Chapter 8: Spring Microservices with Spring Cloud**

Page	Original	Correction
446		
	<pre># Discovery Server Access eureka:   client:     registerWithEureka: false     fetchRegistry: true    </pre>	<pre># Discovery Server Access for pets-service eureka:   client:    registerWithEureka: true   fetchRegistry: false</pre>
450	<pre>\${ipAddress}:\${spring.application.name :\${server.port}}</pre>	<pre>\${ipAddress}:\${spring.application.name} :\${server.port}</pre>
456	This is a Spring Boot annotation that "under the hood" configures a LocalContainerEntityManagerFactory-Bean and sets the packagestoScan property	This is a Spring Boot annotation that "under the hood" configures a LocalContainerEntityManagerFactory-Bean and sets the <b>packagesToScan</b> property

**Table B.7:** Corrections Table (part 6)

## Appendix A

In the Appendix A, the quiz solution section for Chapter 2, at editing, the numbering of the answers was misplaced, so the number of the questions and the answers, do not fit. There are also small errors in the answers to questions 4 and 8. The full list of answers with proper numbering and corrections is depicted below:

#### **Quiz Solution for Chapter 2**

1. Answer: A, B, C

2. Answer: B

3. **Answer:** A, B,D (C, Interface-based injection is not supported in Spring. D, field-based injection is supported by annotating fields with @Autowired, @Value or related annotations; JSR-250 @Resource, JSR-330

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 $@Inject.^2)$ 

#### 4. Answer:

Original: Answer: A, B, C (As stated in Chapter 2)

Correct: A (ClassPathXmlApplicationContext is a simple convenience ApplicationContext implementation that can be used to load the definitions from the given XML files and automatically refreshing the context.)

#### 5. Answer:

Original: B (Only @Component is contained in the org.springframework.stereotype package) Correct: A (Only @Component is contained in the org.springframework.stereotype package) (The comment pointed to the correct answer, the letter was incorrect. Many thanks to Tobias Hochgürtel for noticing this.)

Clarification: Many readers have submitted questions about this answer asking why @Configuration is not considered a stereotype annotation. According to the Spring Reference Documentation we could consider that @Configuration is a marker for any class that fulfills the role or stereotype of a configuration class. But it is not explicitly mentioned as such in the documentation https://docs.spring.io/spring/docs/4.3.x/spring-framework-reference/htmlsingle/#beans-stereotype-annotations. Any new annotation using @Component is not necessary automatically a new stereotype. Sure, @ComponentScanis able to detect it according a technical perspective because it has @Component, but semantically would has no sense, because a bean of type configuration will rarely be used for anything else than bean declaration. Thus, @Configuration is in the edge in some way. It can be considered a kind of stereotype, but only for infrastructure.

6. Answer: A

7. Answer: C

#### 8. Answer:

Original: Answer: A,B,C

Correct: A, B.

C is not a good answer, because of the p:petitBean definition. The quizBean has a dependency on the petitBean bean, thus a reference to it is needed. The equivalent bean definition, that would have made the original answer correct is:

- 9. **Answer:** B (CommonAnnotationBeanPostProcessor modifies beans)
- 10. Answer: C
- 11. Answer: B
- 12. Answer: A

Quiz Solution for Chapter 4 In the Appendix A, the quiz solution section for Chapter 4, for unknown reasons,

the answer for Question 8 contains a mistake. (Reported by Patrick Dobner)

Original: Answer: A, B

Correct: **B** (an expression to identify methods to which the advice applies to), **C** (a predicate used to identify join points)

#### Sample Exam

 $<sup>^2</sup>$ Spring Framework Reference: http://docs.spring.io/spring/docs/4.2.3.RELEASE/spring-framework-reference/htmlsingle/#beans-annotation-config

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#### **B.1. BOOK CORRECTIONS**

Question 1 has a (choose one) after the question content, which is confusing as the answer is made of more than one option. (Reported by Tibor Kalman)

Original: Which of the following affirmations is false? (choose one)

Correct: Which of the following affirmations is false?

Question 3 has an incorrect numbering of the answers.

Original:

Are the following two bean declaration equivalent?

```
A. (1)
   <bean id="someBean" p:someValue-ref="someOtherBean" />
   (2)
   @Component("someBean")
   public class SomeBean {
           private SomeBean someValue;
           @Autowired
           @Qualifier("someOtherBean")
           public setSomeValue(SomeBean arg) {
                   this.someValue = arg;
   }
   yes
B. no
```

C. the second is not a valid bean definition

Correct: Are the following two bean declarations equivalent?

```
(1)
<bean id="someBean" p:someValue-ref="someOtherBean" />
@Component("someBean")
public class SomeBean {
        private SomeBean someValue;
        @Autowired
        @Qualifier("someOtherBean")
        public setSomeValue(SomeBean arg) {
                this.someValue = arg;
}
```

- A. yes
- C. the second is not a valid bean definition

#### Sample exam, Answers

Question 50 has a typo.

Original: option **B**: implement disposableBean Correct: option **B**: implement DisposableBean

In the Answers section, the answer for question 30 is wrong.

Original: 30. A Correct: 30. B

## **B.2** Code updates and observations

In the 1.4.1 version of the Gretty plugin the port property was renamed to httpPort. Thus, old Gradle configurations like the one depicted below will cause a build failure.

```
gretty {
    port = 8080
    contextPath = '/mvc-layout'
}
```

The configuration must be corrected and the port property must be replaced with httpPort

```
gretty {
    httpPort = 8080
    contextPath = '/mvc-layout'
}
```

In case you want more information, or keep track of the issue I created related to this, take a look on the Gretty plugin GitHub page: https://github.com/akhikhl/gretty

Most small typos and formatting corrections were submitted by *Marco Pelucchi*. Thank you kind sir for using your attention to detail to make this book better!