

# Aspect-Oriented Programming (AOP)

## AOP and Spring MVC



# Goal

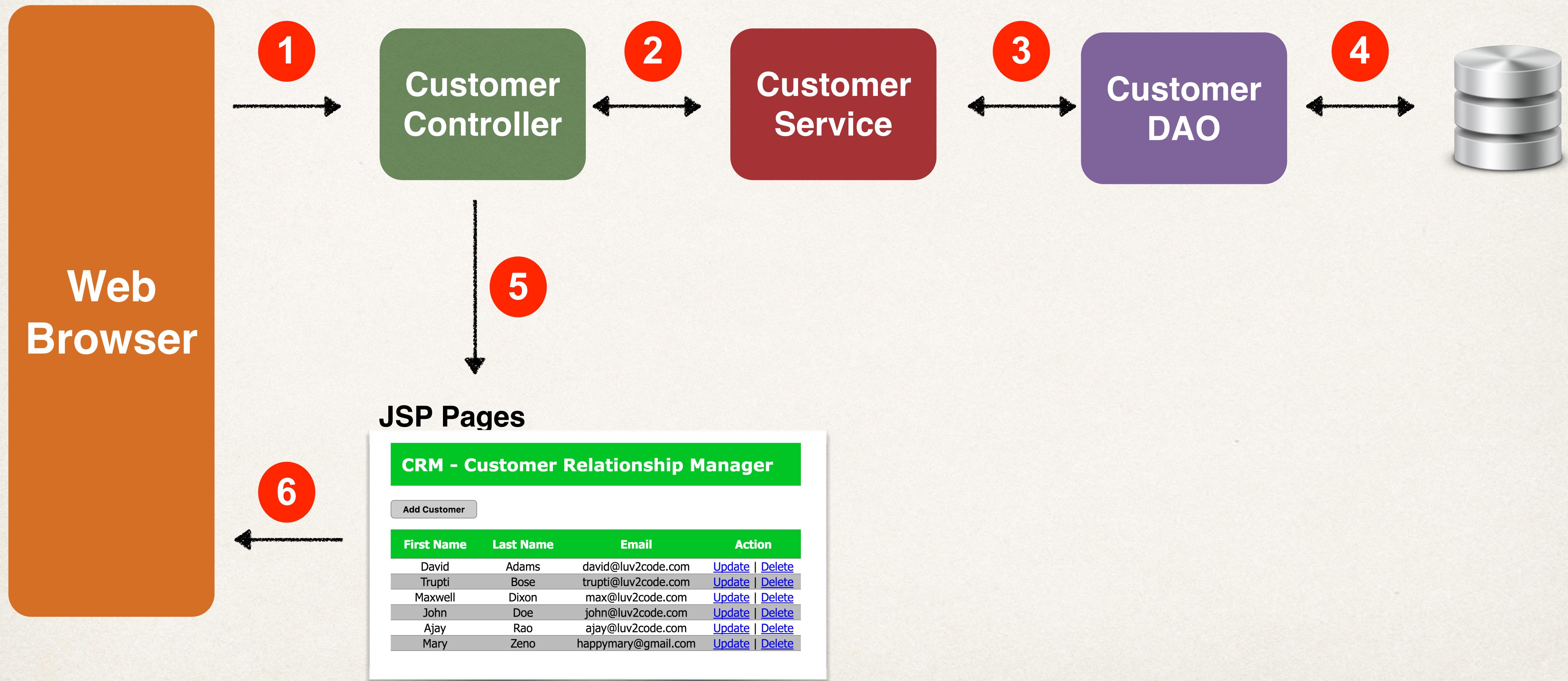
- Add AOP Logging support to our Spring MVC app (CRM Web App)

## CRM - Customer Relationship Manager

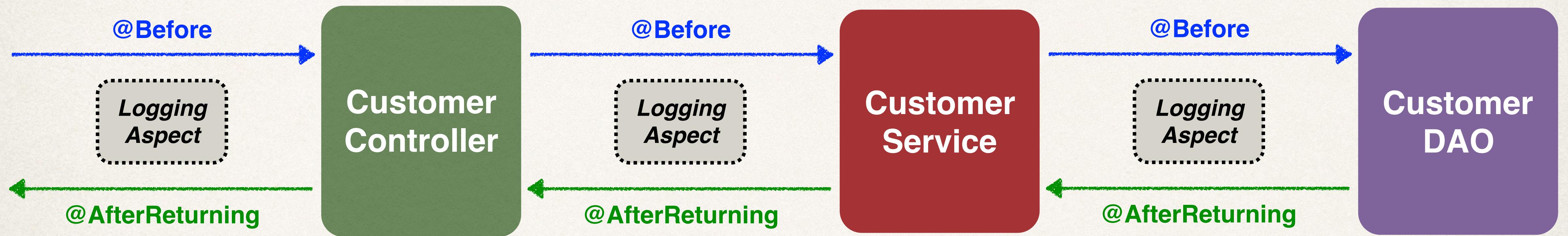
[Add Customer](#)

First Name	Last Name	Email	Action
David	Adams	david@luv2code.com	<a href="#">Update</a>   <a href="#">Delete</a>
Trupti	Bose	trupti@luv2code.com	<a href="#">Update</a>   <a href="#">Delete</a>
Maxwell	Dixon	max@luv2code.com	<a href="#">Update</a>   <a href="#">Delete</a>
John	Doe	john@luv2code.com	<a href="#">Update</a>   <a href="#">Delete</a>
Ajay	Rao	ajay@luv2code.com	<a href="#">Update</a>   <a href="#">Delete</a>
Mary	Zeno	happymary@gmail.com	<a href="#">Update</a>   <a href="#">Delete</a>

# Big Picture



# Logging Aspect



# Development Process

Step-By-Step

1. Add AspectJ JAR file to web project
2. Enable AspectJ Auto Proxy
3. Create Aspect
  1. Add logging support
  2. Setup pointcut declarations
  3. Add @Before advice
  4. Add @AfterReturning advice

# Step 1: Add AspectJ JAR file to web project

- All Spring projects require AspectJ JAR file for AOP support
- Can download from
  - <http://www.luv2code.com/download-aspectjweaver>
- Add JAR file to your web project: **WEB-INF/lib** directory

# Step 2: Enable AspectJ Auto Proxy (XML)

```
<beans xmlns="http://www.springframework.org/schema/beans"
...
    xmlns:aop="http://www.springframework.org/schema/aop"
    xsi:schemaLocation="
...
    http://www.springframework.org/schema/aop
    http://www.springframework.org/schema/aop/spring-aop.xsd">
...
</beans>
```

# Step 2: Enable AspectJ Auto Proxy (XML)

```
<beans xmlns="http://www.springframework.org/schema/beans"
      ...
      xmlns:aop="http://www.springframework.org/schema/aop"
      xsi:schemaLocation="
          ...
          http://www.springframework.org/schema/aop
          http://www.springframework.org/schema/aop/spring-aop.xsd">

    <!-- Add AspectJ autoproxy support for AOP -->
    <aop:aspectj-autoproxy />

    ...

</beans>
```

# Step 2: Enable AspectJ Auto Proxy (Java)

- If you want to use pure Java configuration then use the annotation

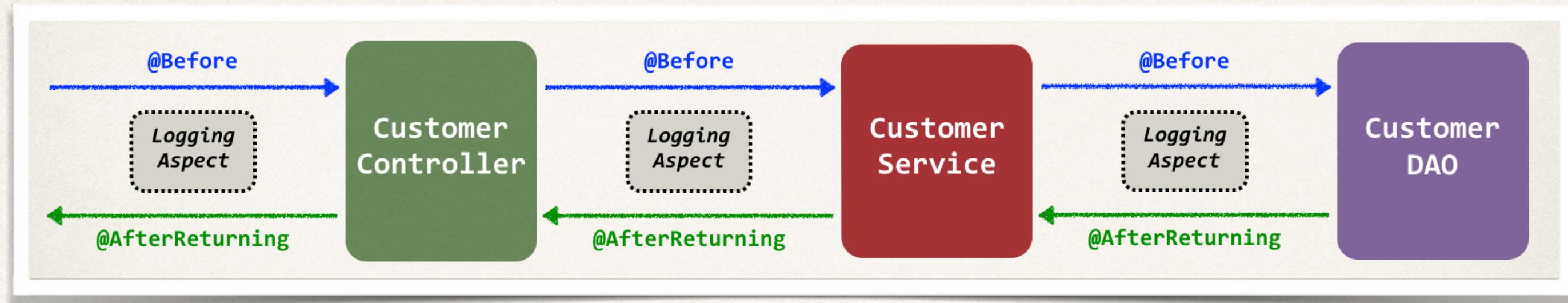
**@EnableAspectJAutoProxy**

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# Pointcut Declarations



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