

# Spring REST Services

# REST

*REpresentational State Transfer*

Ambiguous acronym, simple concept

- PUT
  - Create or Replace
- POST
  - Create or Modify
- GET
  - Retrieve
- DELETE
  - Can you guess?

# Example Requests

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- GET /users

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- GET /users
- GET /users/1234

# Example Requests

- GET /users
- GET /users/1234
- PUT /users/1234

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# REST

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  - Check the HTTP spec for each Method
  - Makes no statements about payload
  - Choose your own adventure

# SOAP

*Simple Object Access Protocol*

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*Simple Object Access Protocol*  
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- Built for RPC
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- WS-\*
- Frameworks are House of Cards

# Implementing

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- Implement REST in a plain old Servlet

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- A lot of if-statements and RegExp
- RegExp is so fun in Java, why wouldn't you?
- Exactly.

# Spring

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- We Java-types are all about Frameworks
- The Mother-of-All-Frameworks is Spring
  - Kitchen Sink / Swiss Army Knife of Java
- It does REST, and does it well

# Spring REST

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- Two key components:



# Spring REST

- Two key components:
  - `spring-mvc`

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- Two key components:
  - spring-mvc
  - Marshallers

# spring-mvc

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- Spring MVC as of 2.5 gives us Annotations to:
  - Direct URL traffic to our controllers
  - URL parameters to method parameters
  - Integrate with marshallers for payload/response

# @RequestMapping



```
@RequestMapping(value = "/users", method = RequestMethod.GET)
public List<User> getAll() {
    ...
}
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- Used to:

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```

- Used to:
  - Declaratively map a URI to a Controller

# @PathVariable



```
@RequestMapping(value = "/users/{userId}", method = RequestMethod.GET)  
public User get(@PathVariable Long userId) {  
    ...  
}
```

# @PathVariable



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@RequestMapping(value = "/users/{userId}", method = RequestMethod.GET)  
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- Used to:
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@RequestMapping(value = "/users/{userId}", method = RequestMethod.GET)
public User get(@PathVariable Long userId) {
    ...
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- Used to:
  - Map a portion of a URI to a method parameter
  - http://server/users/1234

# @RequestParam



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@RequestMapping(value = "/users",method = RequestMethod.GET)  
public User get(@RequestParam Long userId) {  
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- Used to:
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@RequestMapping(value = "/users", method = RequestMethod.GET)
public User get(@RequestParam Long userId) {
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}
```

- Used to:
  - Map a request parameter to a method parameter
  - <http://server/users?userId=1234>

# @ResponseBody



```
@RequestMapping(value = "/users/{userId}")  
public User get(@PathVariable Long userId) {  
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- How will that work over HTTP?

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# Marshalling

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Marshalling needs to occur



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- `@ResponseBody` signals to spring-mvc  
Marshalling needs to occur
- Configure this directly, or let Spring “find a marshaller”

# @RequestBody



```
@RequestMapping(value = "/users", method = RequestMethod.POST)  
public User save(@RequestBody User user) {  
    ...  
}
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# @RequestBody



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- This controller method accepts a “User”
- Use `@RequestBody` to alert Spring that the incoming payload needs unmarshalling
- Note: without `@RequestBody` Spring uses basic conventions to unmarshal

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- Others were probably thinking:
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  - Use Javascript or...
  - HiddenHttpMethodFilter with <form>

# Testing

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- Unit test your REST Controllers without a container



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- Use HttpUnit for Functional Testing

# Wrapping Up

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- There are many more “tricks”, we’ve only seen the basics
- JAXB is still horrible, try Castor instead
  - See Spring OXM

# Example

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- <https://github.com/ctataryn/wjpg-spring-rest>