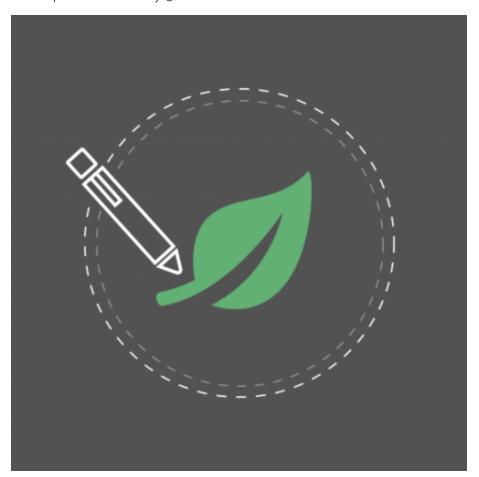
(/)

# **Spring @RequestParam**Annotation

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Written by: baeldung (https://www.baeldung.com/author/baeldung)

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#### 1. Overview

In this quick tutorial, we'll explore Spring's @RequestParam annotation and its attributes.

Simply put, we can use @RequestParam to extract query parameters, form parameters, and even files from the request.

#### **Further reading:**

# Spring @RequestMapping New Shortcut Annotations (/spring-new-requestmapping-shortcuts)

In this article, we introduce different types of @RequestMapping shortcuts for quick web development using traditional Spring MVC framework.

Read more (/spring-new-requestmapping-shortcuts) →

# The Spring @Controller and @RestController Annotations (/spring-controller-vs-restcontroller)

Learn about the differences between @Controller and @RestController annotations in Spring MVC.

Read more (/spring-controller-vs-restcontroller) →

## 2. A Simple Mapping

Let's say that we have an endpoint /api/foos that takes a query parameter called id:

```
@GetMapping("/api/foos")
@ResponseBody
public String getFoos(@RequestParam String id) {
    return "ID: " + id;
}
```

In this example, we used @RequestParam to extract the *id* query parameter. A simple GET request would invoke *getFoos*:

```
http://localhost:8080/spring-mvc-basics/api/foos?id=abc
----
ID: abc
```

Next, let's have a look at the annotation's attributes: *name*, *value*, *required*, and *defaultValue*.

### 3. Specifying the Request Parameter Name

In the previous example, both the variable name and the parameter name are the same.

**Sometimes we want these to be different, though.** Or, if we aren't using Spring Boot, we may need to do special compile-time configuration or the parameter names won't actually be in the bytecode.

Fortunately, we can configure the @RequestParam name using the name attribute:

```
@PostMapping("/a;%/foos") (/)
@ResponseBody
public String addFoo(@RequestParam(name = "id") String fooId,
@RequestParam String name) {
    return "ID: " + fooId + " Name: " + name;
}
```

We can also do @RequestParam(value = "id") or just @RequestParam("id").

### 4. Optional Request Parameters

Method parameters annotated with @RequestParam are required by default.

This means that if the parameter isn't present in the request, we'll get an error:

```
GET /api/foos HTTP/1.1
-----
400 Bad Request
Required String parameter 'id' is not present
```

We can configure our @RequestParam to be optional, though, with the required attribute:

```
@GetMapping("/api/foos")
@ResponseBody
public String getFoos(@RequestParam(required = false) String id) {
    return "ID: " + id;
}
```

In this case, both:

```
http://localhost:8080/spring-mvc-basics/api/foos?id=abc
----
ID: abc
```

and

```
Hitp://losethest:8000pring-nb/d-basics/api/foos
----
ID: null
```

will correctly invoke the method.

When the parameter isn't specified, the method parameter is bound to null.

#### 4.1. Using Java 8 Optional

Alternatively, we can wrap the parameter in Optional (/java-optional).

```
@GetMapping("/api/foos")
@ResponseBody
public String getFoos(@RequestParam Optional<String> id){
    return "ID: " + id.orElseGet(() -> "not provided");
}
```

In this case, we don't need to specify the required attribute.

And the default value will be used if the request parameter is not provided:

```
http://localhost:8080/spring-mvc-basics/api/foos
----
ID: not provided
```

### 5. A Default Value for the Request Parameter

We can also set a default value to the @RequestParam by using the defaultValue attribute:

```
@GetMappiss("ing :/focs (/)
@ResponseBody
public String getFoos(@RequestParam(defaultValue = "test") String id)
{
    return "ID: " + id;
}
```

This is like *required=false*, in that the user no longer needs to supply the parameter:

```
http://localhost:8080/spring-mvc-basics/api/foos
----
ID: test
```

Although, we are still okay to provide it:

```
http://localhost:8080/spring-mvc-basics/api/foos?id=abc
----
ID: abc
```

Note that when we set the *defaultValue* attribute, *required* is indeed set to *false*.

## 6. Mapping All Parameters

**We can also have multiple parameters without defining their names** or count by just using a *Map*:

```
@PostMapping("/api/foos")
@ResponseBody
public String updateFoos(@RequestParam Map<String,String> allParams) {
    return "Parameters are " + allParams.entrySet();
}
```

which will then reflect back any parameters sent:

```
curl -X P > [ - seme=anc' -F(/)d=123' http://localhost:8080/spring-mvc-basics/api/foos
-----
Parameters are {[name=abc], [id=123]}
```

### 7. Mapping a Multi-Value Parameter

A single @RequestParam can have multiple values:

```
@GetMapping("/api/foos")
@ResponseBody
public String getFoos(@RequestParam List<String> id) {
    return "IDs are " + id;
}
```

#### And Spring MVC will map a comma-delimited id parameter:

```
http://localhost:8080/spring-mvc-basics/api/foos?id=1,2,3
----
IDs are [1,2,3]
```

#### or a list of separate id parameters:

```
http://localhost:8080/spring-mvc-basics/api/foos?id=1&id=2
----
IDs are [1,2]
```

#### 8. Conclusion

In this article, we learned how to use @RequestParam.

The full source code for the examples can be found in the GitHub project (https://github.com/eugenp/tutorials/tree/master/spring-web-modules/spring-mvc-basics-5).

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