



How to Capture Data using @RequestParam Annotation in Spring?

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The **@RequestParam annotation** enables Spring to capture input data that may be passed as a query, form data, or any arbitrary custom data. It is used to bind a web request parameter to a method parameter. Here, we are going to understand these two above lines, and we will see how we can capture data using this annotation.

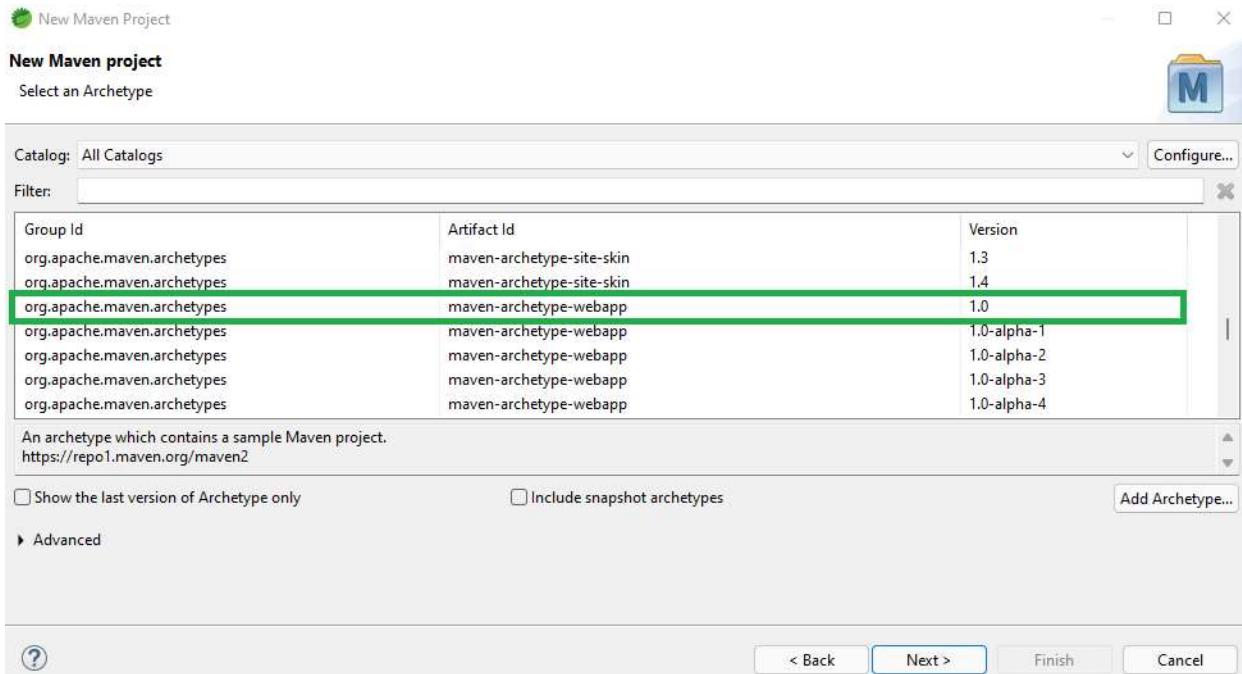
Note: We are going to use **Spring Tool Suite 4** IDE for this project. Please go through [how to download and Install Spring Tool Suite \(Spring Tools 4 for Eclipse\) IDE](#).

Setting Up the Project

Let's create a simple MVC application and use the **@RequestParam Annotation** inside the application.

Step 1: Create a New Maven Project

1.1: Go to your STS IDE, then create a new maven project, **File > New > Maven Project**, and choose the following **archetype** as shown in the image below.



1.2: Configure the DispatcherServlet in the `web.xml` file.

```

<web-app
  xmlns="http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/javaee/index.h
  tml" xmlns:xsi="https://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/j
  avaee/index.html

  http://www.oracle.com/webfolder/technetwork/jsc/xml/ns/javaee/index.html/web-
  app_3_0.xsd"
  version="3.0">

  <!-- Spring Dispatcher Servlet -->
  <servlet>
    <servlet-name>dispatcher</servlet-name>
    <servlet-
  class>org.springframework.web.servlet.DispatcherServlet</servlet-class>
    <load-on-startup>1</load-on-startup>
  </servlet>

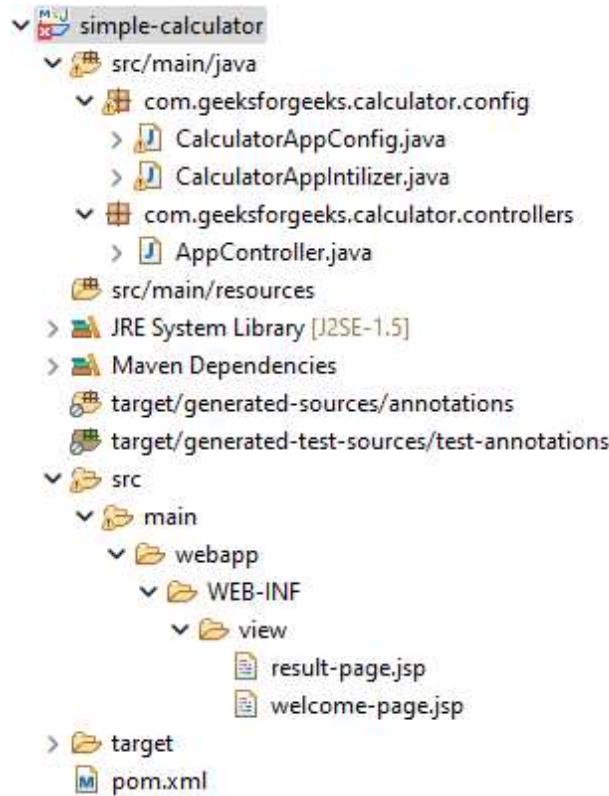
  <servlet-mapping>
    <servlet-name>dispatcher</servlet-name>
    <url-pattern>/</url-pattern>
  </servlet-mapping>

</web-app>

```

Project Structure

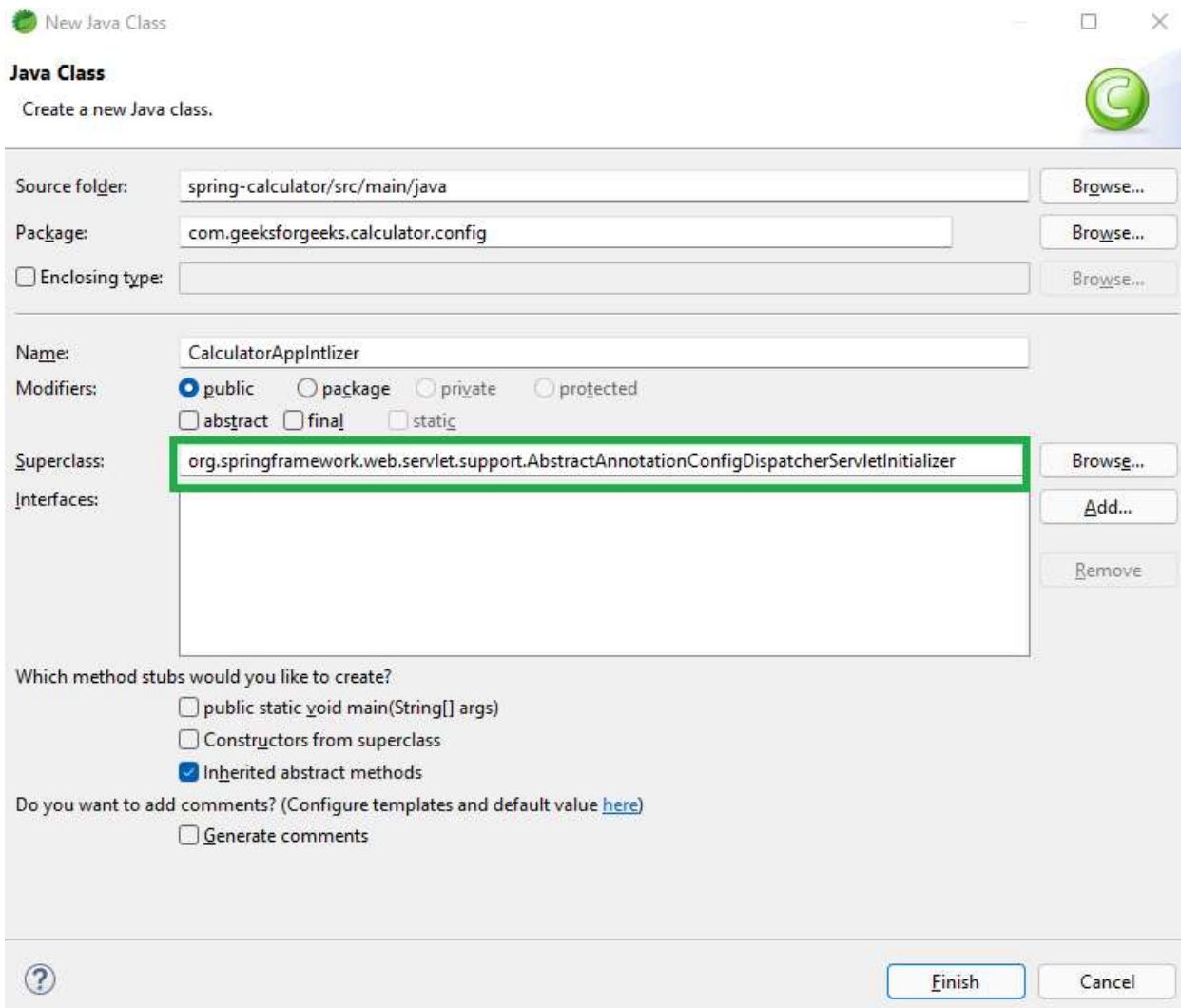
Let us have a look at the project structure before moving into the coding part via the below media as follows:



Step 2: Configure Dispatcher Servlet

2.1: So at first create an **src/main/java** folder and inside this folder create a class named **CalculatorAppInitializer** and put it inside the **com.geeksforgeeks.calculator.config** package and extends the **AbstractAnnotationConfigDispatcherServletInitializer** class.

Refer to the below image as follows:



And whenever you are extending this class, it has some pre [abstract methods](#) that we need to provide the implementation. Now inside this class, we have to just write two lines of code to Configure the Dispatcher Servlet. Before that, we have to create another class for the Spring configuration file. So, go to the **src/main/java** folder and inside this folder create a class named **Calculator AppConfig** and put it inside the **com.geeksforgeeks.calculator.config** package.

Calculator AppConfig.java:

```
package com.geeksforgeeks.calculator.config;
// Importing required classes
import org.springframework.context.annotation.ComponentScan;
import org.springframework.context.annotation.Configuration;
// Class
```

```
@Configuration
```

```
@ComponentScan(basePackages =  
"com.geeksforgeeks.calculator.controllers")  
public class CalculatorAppConfig {}
```

And below is the complete code for the **CalculatorAppInitializer.java** file.

CalculatorAppInitializer.java:

This class will initialize the Dispatcher Servlet.

```
// Java Program to Demonstrate CalculatorAppInitializer Class  
  
package com.geeksforgeeks.calculator.config;  
  
// Importing required classes  
import org.springframework.web.servlet.support.AbstractAnnotationConfigDispatcherServletInitializer;  
  
// Class  
public class CalculatorAppInitializer  
    extends AbstractAnnotationConfigDispatcherServletInitializer {  
  
    // Getter method  
    @Override  
    protected Class<?>[] getRootConfigClasses() {  
  
        return null;  
    }  
  
    // Getter method  
    // Registering the Spring config file  
    @Override  
    protected Class<?>[] getServletConfigClasses() {  
  
        Class aClass[] = { CalculatorAppConfig.class };  
        return aClass;  
    }  
  
    // Adding mapping URL  
    @Override  
    protected String[] getServletMappings() {  
  
        // Declaring and initializing custom string  
        String arr[] = { "/geeksforgeeks.org/*" };  
  
        return arr;  
    }
```

```
}
```

Step 3: Setup ViewResolver

Spring MVC is a Web MVC Framework for building web applications. In generic all MVC frameworks provide a way of working with views. Spring does that via the ViewResolvers, which enables you to render models in the browser without tying the implementation to specific view technology. Read more here: [ViewResolver in Spring MVC](#). So for setting up ViewResolver go to the **CalculatorAppConfig.java** file and write down the code as follows:

```
@Bean
public InternalResourceViewResolver viewResolver() {
    InternalResourceViewResolver viewResolver = new
    InternalResourceViewResolver();
    viewResolver.setPrefix("/WEB-INF/view/");
    viewResolver.setSuffix(".html");
    return viewResolver;
}
```

And below is the updated code for the **CalculatorAppConfig.java** file after writing the code for setting up the ViewResolver.

Updated CalculatorAppConfig.java:

This class will enable Spring MVC and set up the ViewResolver.

```
// Java Program to Illustrate Updated Calculator App
// Configuration Class

package com.geeksforgeeks.calculator.config;
```



```
// Importing required classes
import org.springframework.context.annotation.Bean;
import org.springframework.context.annotation.ComponentScan;
import org.springframework.context.annotation.Configuration;
import org.springframework.web.servlet.ViewResolver;
import org.springframework.web.servlet.config.annotation.EnableWebMvc;
import org.springframework.web.servlet.view.InternalResourceViewResolver;

// Class
@EnableWebMvc
@Configuration
@ComponentScan(basePackages
    = "com.geeksforgeeks.calculator.controllers")
public class CalculatorAppConfig {

    // Setting up ViewResolver
    @Bean public InternalResourceViewResolver viewResolver()
    {

        InternalResourceViewResolver viewResolver
            = new InternalResourceViewResolver();
        viewResolver.setPrefix("/WEB-INF/view/");
        viewResolver.setSuffix(".html");

        return viewResolver;
    }
}
```

Step 4: Create Controller

Go to the **src/main/java** folder and inside this folder create a class named **AppController** and put it inside the **com.geeksforgeeks.calculator.controllers** package.

AppController.java file:

```
package com.geeksforgeeks.calculator.controllers;
import org.springframework.stereotype.Controller;
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.GetMapping;
@Controller
public class AppController {
    @GetMapping("/home")
```

```

public String showHomePage() {
    return "welcome-page";
}

@GetMapping("/process-homepage")
public String showResultPage(@RequestParam("number1")
String num1,
                            @RequestParam("number2") String num2,
                            Model model) {

    model.addAttribute("number1", num1);
    model.addAttribute("number2", num2);
    return "result-page";
}

```

Step 5: Create a View

Now we have to create a view named "welcome-page" inside the **WEB-INF/view** folder with the **.html extension**

welcome-page.jsp:

```

<html>
<head>
</head>
<body>
    <h1 align="center">Capture Data using @RequestParam Annotation in
    Spring</h1>
    <hr/>
    <form action="process-homepage" method="get">
        <div align="center">
            <input type="text" id="num1" name="number1" />
        </div>
        <p>
            <label for="num1">Enter First Number : </label> <input
            type="text" id="num1" name="number1" />
        </p>
    </form>

```

```

<p>
    ..... <label for="num2">Enter Second Number : </label> <input
    type="text"
    ..... id="num2" name="number2" />
    .....
```

The view is looking like below:

Capture Data using @RequestParam Annotation in Spring

Enter First Number :	<input style="width: 100px;" type="text"/>
Enter Second Number :	<input style="width: 100px;" type="text"/>
	<input style="width: 100px;" type="button" value="Capture"/>

So, here we want to put some values inside the label and we want to capture that value so that we can display that value on our next page after clicking on the Capture button. So how to do it? And here **@RequestParam Annotation comes into the picture.**

Step 6: Capture Data using @RequestParam Annotation

As we have written this line inside the **welcome-page.jsp** file

```
<form action="process-homepage" method="get">
```

So, we have to create a controller with the "process-homepage" endpoint. So now come to the **AppController.java** file again and write down the following code inside this file.

```
@RequestMapping("/process-homepage")
```

```

public String showResultPage(@RequestParam("number1") String num1,
                            @RequestParam("number2") String num2, Model model)
{
    model.addAttribute("number1", num1);
    model.addAttribute("number2", num2);

    return "result-page";
}

```

So, in the above code snippet let's understand this line

```

@RequestParam("number1") String num1,
@RequestParam("number2") String num2, Model model

```

Here, inside the @RequestParam, we have passed "number1" and we have also given the same name inside the **welcome-page.jsp** file on this line of code.

```

<label for="num1">Enter First Number : </label> <input type="text"
id="num1" name="number1" />

```

And in "String num1" we have stored that value inside the "num1" variable. And the same goes for "number2" also. But now we have to send that value to the second page and how to do it. And here, "Model" comes into the picture.

Tip: In order to know more about Model in Spring, refer to [How to Create Your First Model in Spring MVC](#)

Updated AppController.java file:

This class will handle requests and capture data using the `@RequestParam` annotation.

```
// Java Program to Illustrate Updated App Controller Class

package com.geeksforgeeks.calculator.controllers;

// Importing required classes
import org.springframework.stereotype.Controller;
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestParam;

// Class
@Controller
public class AppController {

    // Method
    @RequestMapping("/home") public String showHomePage()
    {
        return "welcome-page";
    }

    // Method
    @RequestMapping("/process-homepage")
    public String showResultPage(@RequestParam("number1") String num1,
                                @RequestParam("number2") String num2,
                                Model model)
    {

        model.addAttribute("number1", num1);
        model.addAttribute("number2", num2);

        return "result-page";
    }
}
```

Now, we have to create another view named "result-page" to display the captured values. So below is the code for the `result-page.jsp` file.

Create result-page.jsp

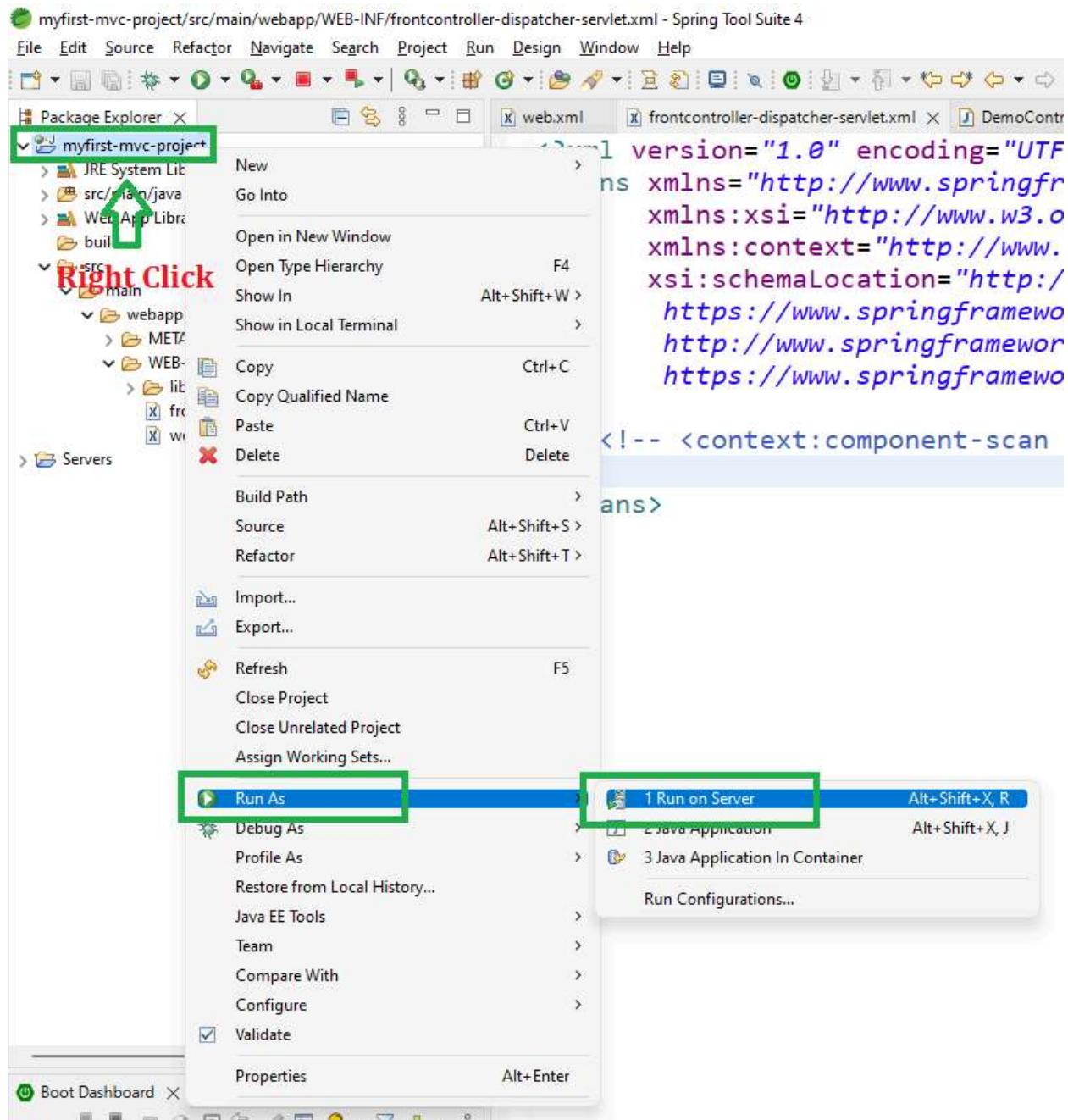
```
<html>
```

```
<head>
</head>
<body>
    <h1 align="center">Capture Data using @RequestParam
    Annotation in Spring</h1>
    <hr/>
    <p>First Number is: ${number1}</p>
    <p>Second Number is: ${number2}</p>
</body>
</html>
```

So, now we have done with the coding part. Let's run and test our application.

Step 7: Run the application

7.1: To run our Spring MVC Application right-click on your project > Run As > Run on Server. And run your application as shown in the below image as depicted below as follows:



7.2: After that use the following URL to run your controller

http://localhost:8080/simple-calculator/geeksforgeeks.org/home

Output:

The screenshot shows a web browser window with the URL "http://localhost:8080/simple-calculator/geeksforgeeks.org/home". The page title is "Capture Data using @RequestParam Annotation in Spring". It features two input fields: "Enter First Number" and "Enter Second Number", both with placeholder text "0". Below the inputs is a "Capture" button.

Now, let us put some values inside the label and click on the '**Capture**' button. Suppose here we have put 23 and 45 and whenever we click on the Capture button an URL is generated as below as follows:

`http://localhost:8080/simple-calculator/geeksforgeeks.org/process-homepage?number1=23&number2=45`

And we can see on the next page the values are displayed and it is made possible via **@RequestParam** Annotation.



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