

Anotasi **@Controller** di atas deklarasi kelas menandakan bahwa **PageController** merupakan sebuah Controller. Controller merupakan salah satu komponen pada *pattern* MVC. Controller akan merespond HTTP Requests dan mengembalikan View.

Anotasi `@RequestMapping("/hello")` di atas method index() menandakan bahwa jika ada request HTTP pada path /hello akan dipanggil method index().

Latihan Project Hello World

1. Ganti baris tersebut menjadi `@RequestMapping("/hello123")`

Pertanyaan:

Apakah compile error? **Tidak**

The screenshot shows the Eclipse IDE interface with the following details:

- Top Bar:** Shows the workspace name "workspace-sts-3.9.0.RELEASE - coba/src/main/java/com/example/demo/controller/PageController.java".
- Left Sidebar (Package Explorer):** Displays the project structure:
 - Root: coba [boot] [devtools]
 - src/main/java
 - com.example.demo
 - com.example.demo.controller
 - PageController.java
 - src/main/resources
 - static
 - templates
 - application.properties
 - hello.html
 - src/test/java
 - JRE System Library [JavaSE-1.8]
 - Maven Dependencies
 - src
 - target
 - mvnw
 - mvnw.cmd
 - pom.xml
 - Example-1 [boot] [devtools]
 - Servers
- Central Area (Editor):** Shows the code for PageController.java:

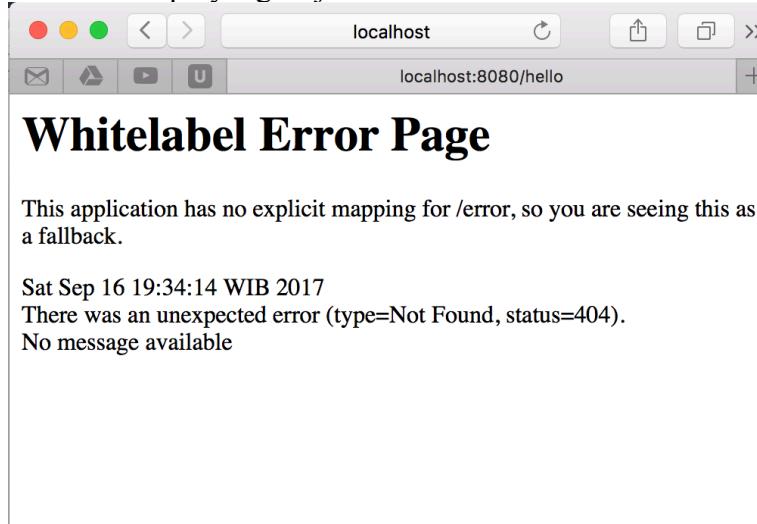
```
package com.example.demo.controller;

import org.springframework.stereotype.Controller;
import org.springframework.web.bind.annotation.RequestMapping;

@Controller
public class PageController {
    @RequestMapping("/hello123")
    public String index()
    {
        return "hello";
    }
}
```
- Bottom Bar (Toolbars):** Includes Console, Progress, Problems, and various system icons.
- Bottom Status Bar:** Shows the command line output for the Coba application, including DEBUG logs for DevTools settings and a Spring Boot banner.
- Bottom Footer:** Shows the Pivotal tc Server Developer Edition v3.2 logo.

Jika tidak, stop Spring Boot yang sedang berjalan, run kembali dan buka localhost:

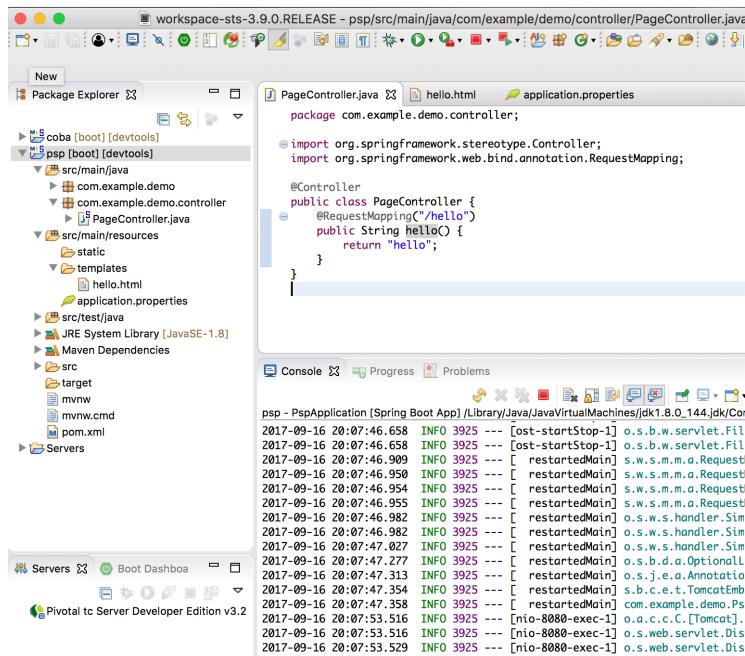
8080/hello apa yang terjadi?



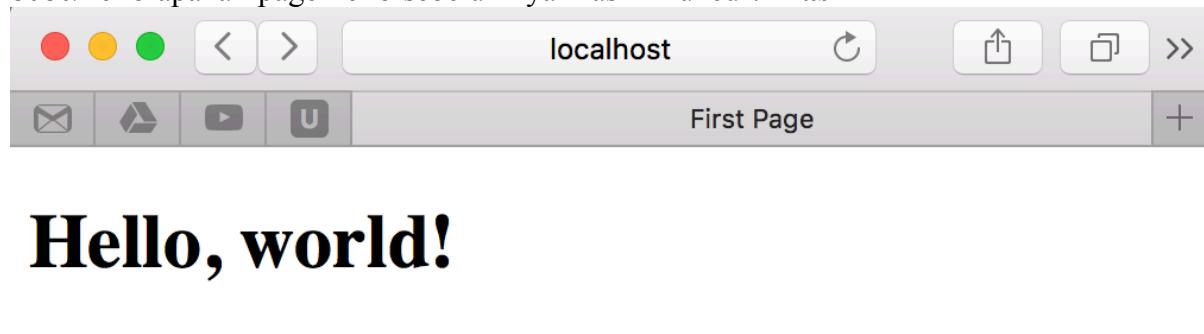
Kembalikan RequestMapping menjadi /hello

2. Ganti nama method index() dengan nama method hello()

Pertanyaan: Apakah compile error? Tidak



Jika tidak, Stop Spring Boot yang sedang berjalan, run kembali dan buka localhost: 8080/hello apakah page hello sebelumnya masih muncul? **Masih**



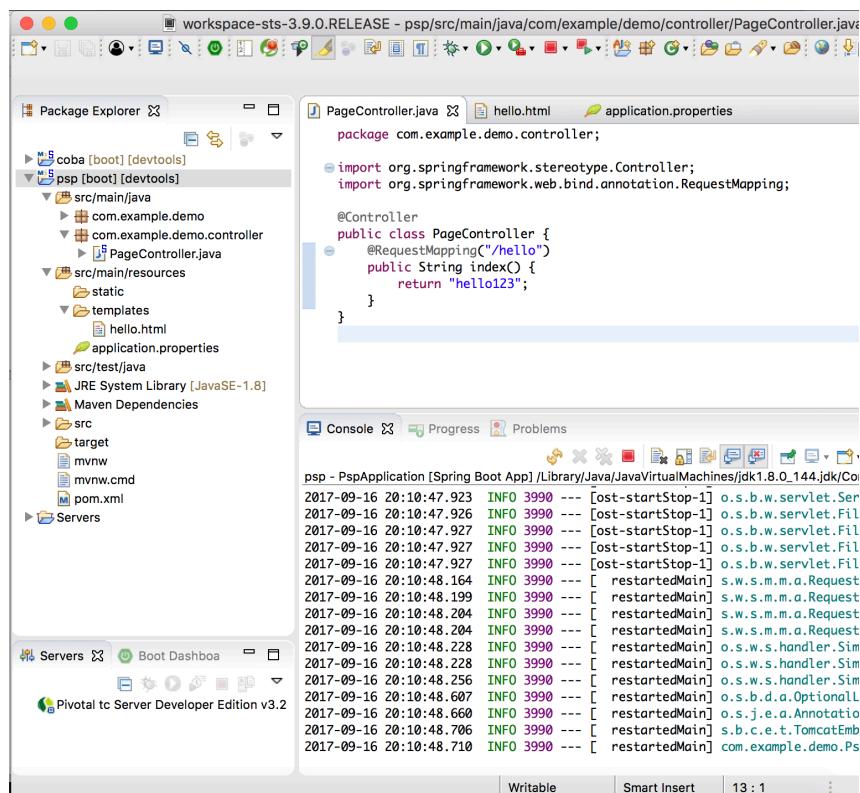
Hello, world!

Kembalikan nama method menjadi index()

- Ganti string return type menjadi return "hello123";

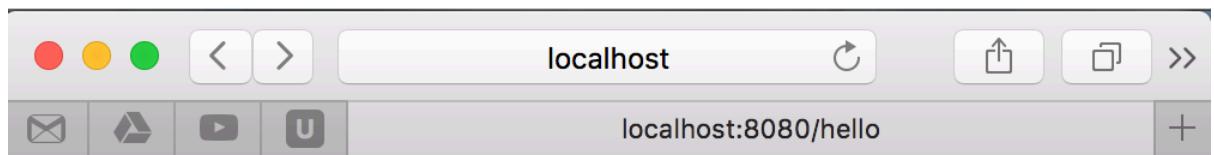
Pertanyaan:

Apakah compile error?**Tidak**



Jika tidak, Stop Spring Boot yang sedang berjalan, run kembali dan buka localhost:

8080/hello apakah page hello sebelumnya masih muncul? **Tidak**



Whitelabel Error Page

This application has no explicit mapping for /error, so you are seeing this as a fallback.

Sat Sep 16 20:11:20 WIB 2017

There was an unexpected error (type=Internal Server Error, status=500).
Error resolving template "hello123", template might not exist or might not be accessible by any of the configured Template Resolvers

Kembalikan return type menjadi "hello"

Pertanyaan:

Menandakan apakah String yang di-return tersebut? Memanggil file html yang terdapat pada src/main/resource >> template

Latihan Request Parameter

1. Ubah nilai anotasi RequestMapping dari "/greeting" menjadi "/hello/greeting"

```

workspace-sts-3.9.0.RELEASE - psp/src/main/java/com/example/demo/controller/PageController.java - Spring Tool Suite [psp]
Package Explorer PageController.java hello.html application.propr greeting.html
src/main/java
  com.example.demo
    PageController.java
src/main/resources
  static
  templates
    greeting.html
    hello.html
    application.properties
src/test/java
JRE System Library [JavaSE-1.8]
Maven Dependencies
src
  target
  mvnw
  mvnw.cmd
  pom.xml
Servers

PageController.java
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestParam;

@Controller
public class PageController {
    @RequestMapping("/hello")
    public String index() {
        return "hello";
    }

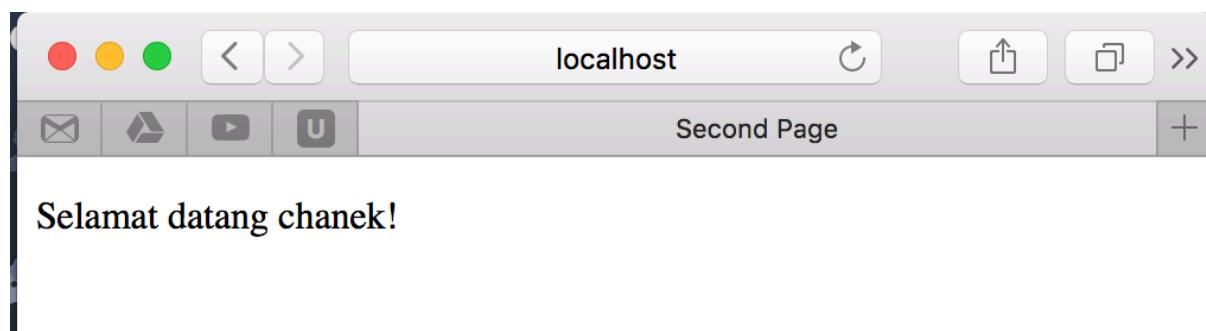
    @RequestMapping (" /hello/greeting")
    public String greeting (@RequestParam(value="name") String name, Model mode {
        mode.addAttribute("name", name);
        return"greeting";
    }
}

Console
psp - PspApplication [Spring Boot App] /Library/Java/JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Hom
2017-09-16 20:18:38.740 INFO 4131 --- [ost-startStop-1] o.s.b.w.servlet.FilterRegist
2017-09-16 20:18:38.740 INFO 4131 --- [ost-startStop-1] o.s.b.w.servlet.FilterRegist
2017-09-16 20:18:38.741 INFO 4131 --- [ost-startStop-1] o.s.b.w.servlet.FilterRegist
2017-09-16 20:18:38.741 INFO 4131 --- [ost-startStop-1] o.s.b.w.servlet.FilterRegist
2017-09-16 20:18:38.742 INFO 4131 --- [ost-startStop-1] o.s.b.w.servlet.FilterRegist
2017-09-16 20:18:38.964 INFO 4131 --- [ restartedMain] s.w.s.m.m.a.RequestMappingHa
2017-09-16 20:18:39.000 INFO 4131 --- [ restartedMain] s.w.s.m.m.a.RequestMappingHa
2017-09-16 20:18:39.002 INFO 4131 --- [ restartedMain] s.w.s.m.m.a.RequestMappingHa
2017-09-16 20:18:39.005 INFO 4131 --- [ restartedMain] s.w.s.m.m.a.RequestMappingHa
2017-09-16 20:18:39.005 INFO 4131 --- [ restartedMain] s.w.s.m.m.a.RequestMappingHa
2017-09-16 20:18:39.031 INFO 4131 --- [ restartedMain] o.s.w.s.handler.SimpleUrlHan
2017-09-16 20:18:39.031 INFO 4131 --- [ restartedMain] o.s.w.s.handler.SimpleUrlHan
2017-09-16 20:18:39.061 INFO 4131 --- [ restartedMain] o.s.w.s.handler.SimpleUrlHan
2017-09-16 20:18:39.347 INFO 4131 --- [ restartedMain] o.s.b.d.a.OptionalLiveReload
2017-09-16 20:18:39.383 INFO 4131 --- [ restartedMain] o.s.j.e.a.AnnotationMBeanExp
2017-09-16 20:18:39.424 INFO 4131 --- [ restartedMain] s.b.c.e.t.TomcatEmbeddedServ
2017-09-16 20:18:39.428 INFO 4131 --- [ restartedMain] com.example.demo.PspApplicat

Servers
Pivotl tc Server Developer Edition v3.2

```

Buka **localhost: 8080/hello/greeting?name=chanek** Pertanyaan: apakah hasilnya?
Menampilkan is dari page greeting



Kembalikan request map menjadi `@RequestMapping("/greeting")`

```

import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestParam;

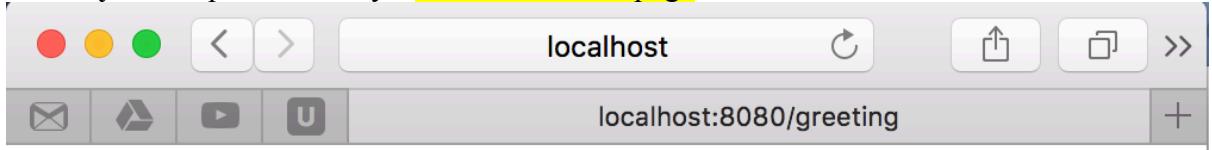
@Controller
public class PageController {
    @RequestMapping("/hello")
    public String index() {
        return "hello";
    }

    @RequestMapping("/greeting")
    public String greeting(@RequestParam(value="name") String name, Model model) {
        model.addAttribute("name", name);
        return "greeting";
    }
}

```

2. Akses localhost: 8080/greeting

Pertanyaan: Apakah hasilnya? Whitelabel error page



Whitelabel Error Page

This application has no explicit mapping for /error, so you are seeing this as a fallback.

Sat Sep 16 20:21:57 WIB 2017

There was an unexpected error (type=Bad Request, status=400).
Required String parameter 'name' is not present

Ubah header method greeting menjadi seperti berikut

```

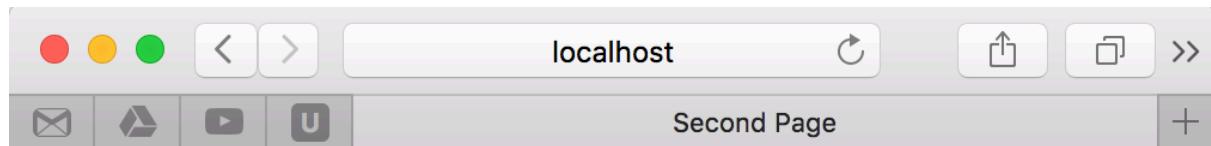
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RequestParam;

@Controller
public class PageController {
    @RequestMapping("/")
    public String index() {
        return "hello";
    }

    @RequestMapping("/greeting")
    public String greeting(@RequestParam(value="name", required = false) String name, Model model) {
        model.addAttribute("name", name);
        return "greeting";
    }
}

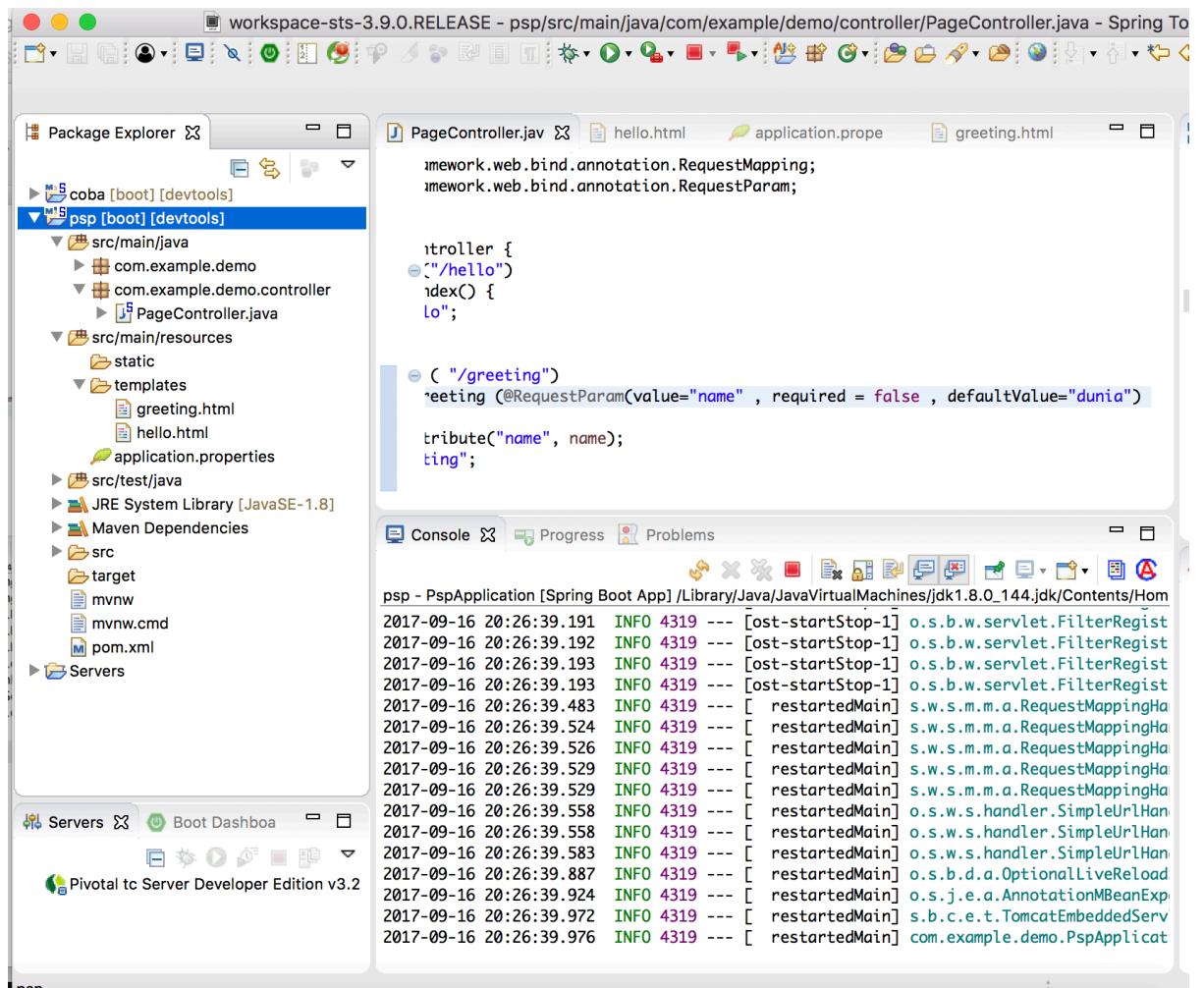
```

Stop Spring Boot yang sedang berjalan, run kembali, buka **localhost: 8080/greeting**
Pertanyaan: Apakah hasilnya?



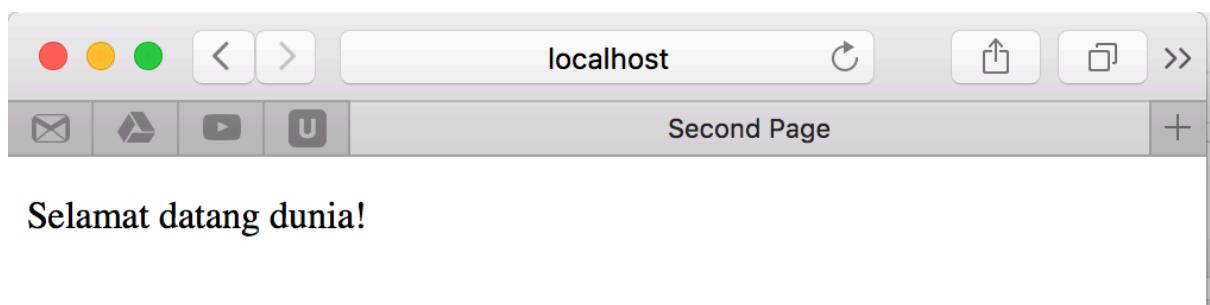
Selamat datang null!

3. Ubah header method greeting menjadi seperti berikut



Stop Spring Boot yang sedang berjalan, run kembali, dan buka **localhost:8080/greeting**.

Pertanyaan: apakah hasilnya?



Pertanyaan: Mengapa tulisan “Sapaan untuk user” tidak pernah muncul?

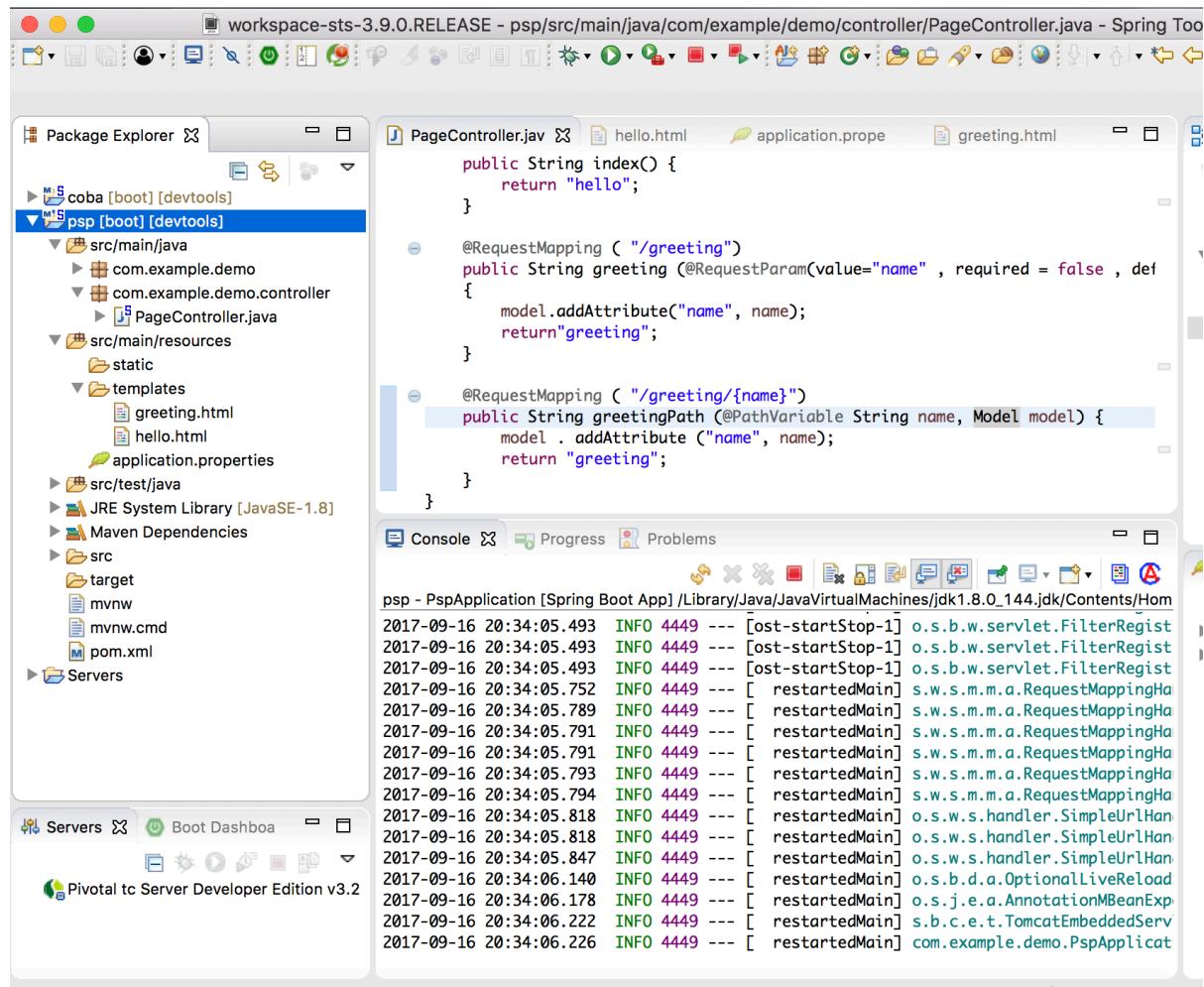
Hal ini dikarenakan kita menggunakan thymeleaf, sehingga perasi yyang terbaa hanyalah yg terdapat pada syntax th:text saja

Path Variable

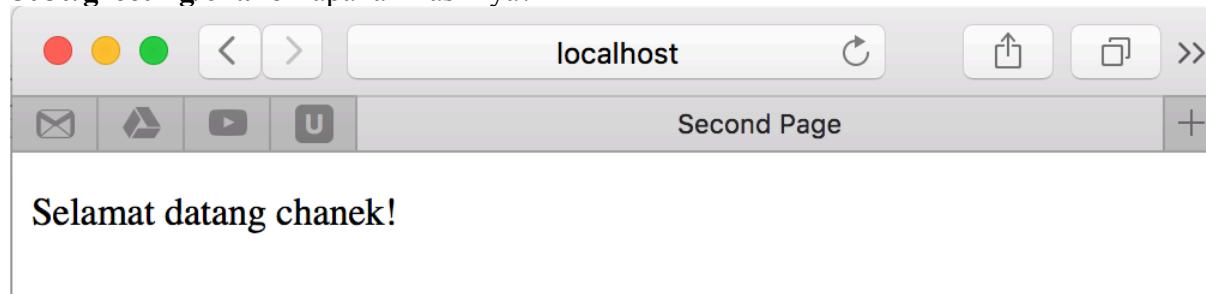
Cara lain untuk passing suatu data dari URL adalah menggunakan path variable. Contoh dari penggunaan path variable misalkan “/user/delete/:id” dimana id merupakan path variable. Anda dapat mengirim data melalui path variable ke server pada Spring Boot.

Langkah:

1. Tambahkan method greetingPath pada **PageController**



2. Stop Spring Boot yang sedang berjalan, run kembali, dan buka **localhost:8080/greeting/chanek** apakah hasilnya?

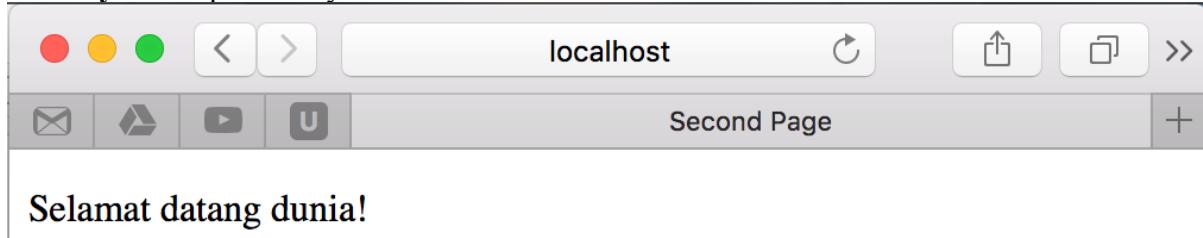


Dalam Spring Boot, {name} merupakan path variable yang dapat diolah oleh controller.

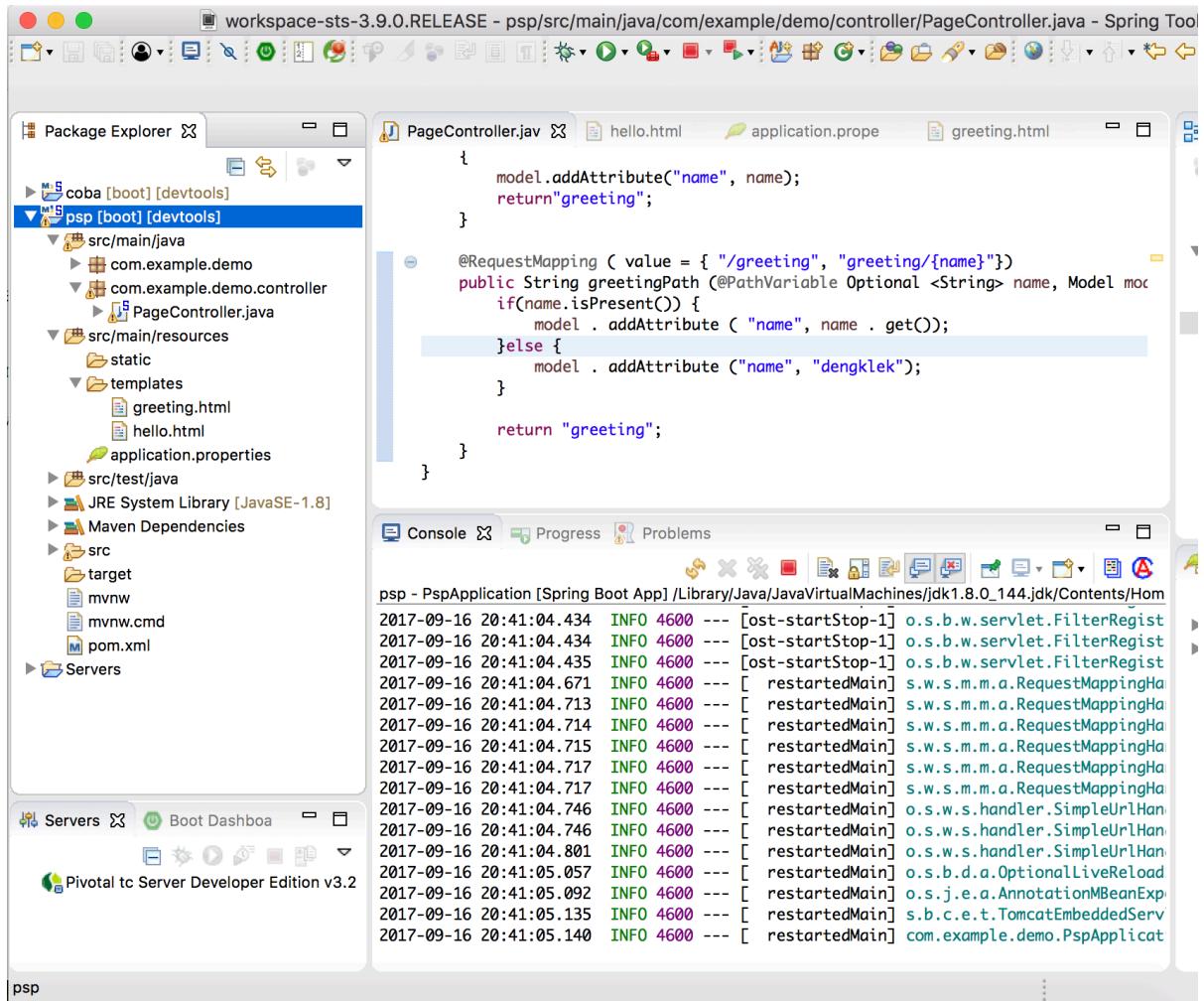
Latihan Path Variable:

1. Akses **localhost:8080/greeting/**

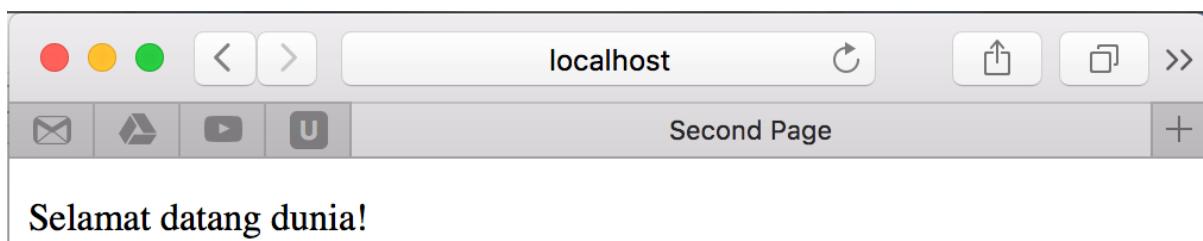
Pertanyaan: Apa hasilnya?



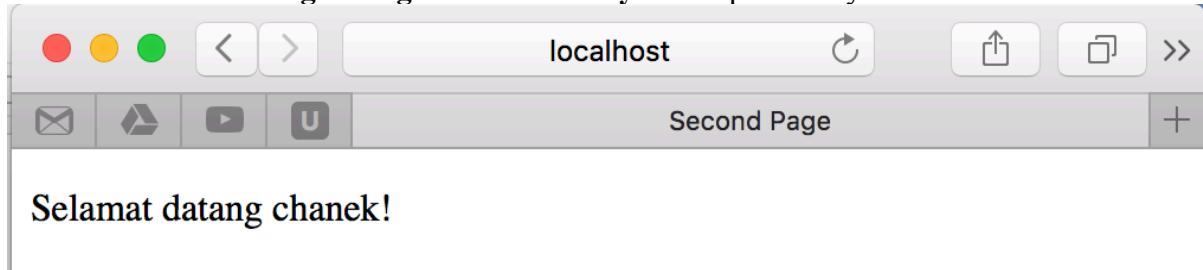
Ubah method greetingPath menjadi seperti berikut



Akses **localhost:8080/greeting/** Pertanyaan: Apa hasilnya? **Whitelabel**



Akses **localhost:8080/greeting/chanek** Pertanyaan: Apa hasilnya?



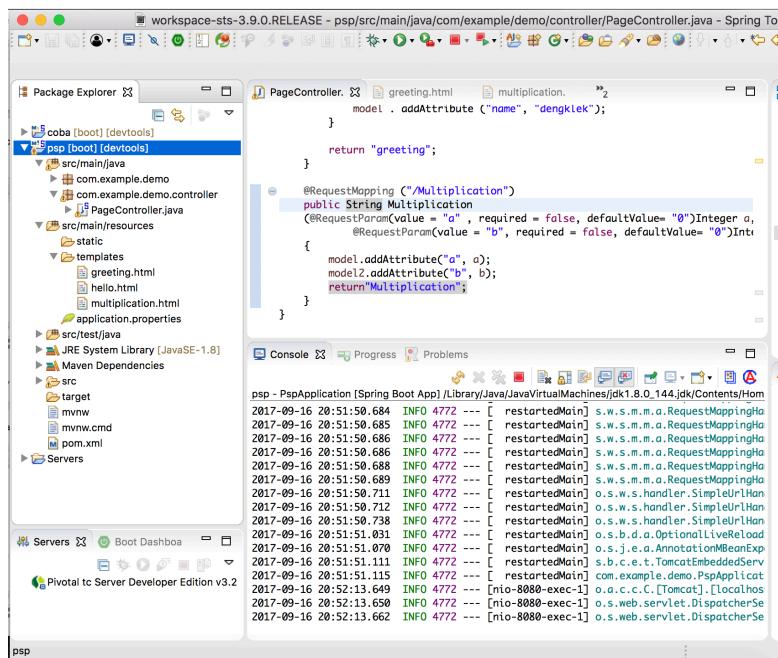
Path variable dan request parameter (query string) akan sering digunakan kedepannya dalam membuat request. Pastikan Anda memahami fungsi dan penggunaan kedua hal tersebut. Hal lain seputar penggunaan Spring Boot dapat Anda lihat pada dokumentasi Spring Boot pada tautan berikut <https://docs.spring.io/spring-boot/docs/current/reference/htmlsingle/>. Untuk dokumentasi Thymeleaf silakan ke tautan <http://www.thymeleaf.org/documentation.html>. Materi Thymeleaf lebih detail akan dibahas pada perkuliahan.

Latihan

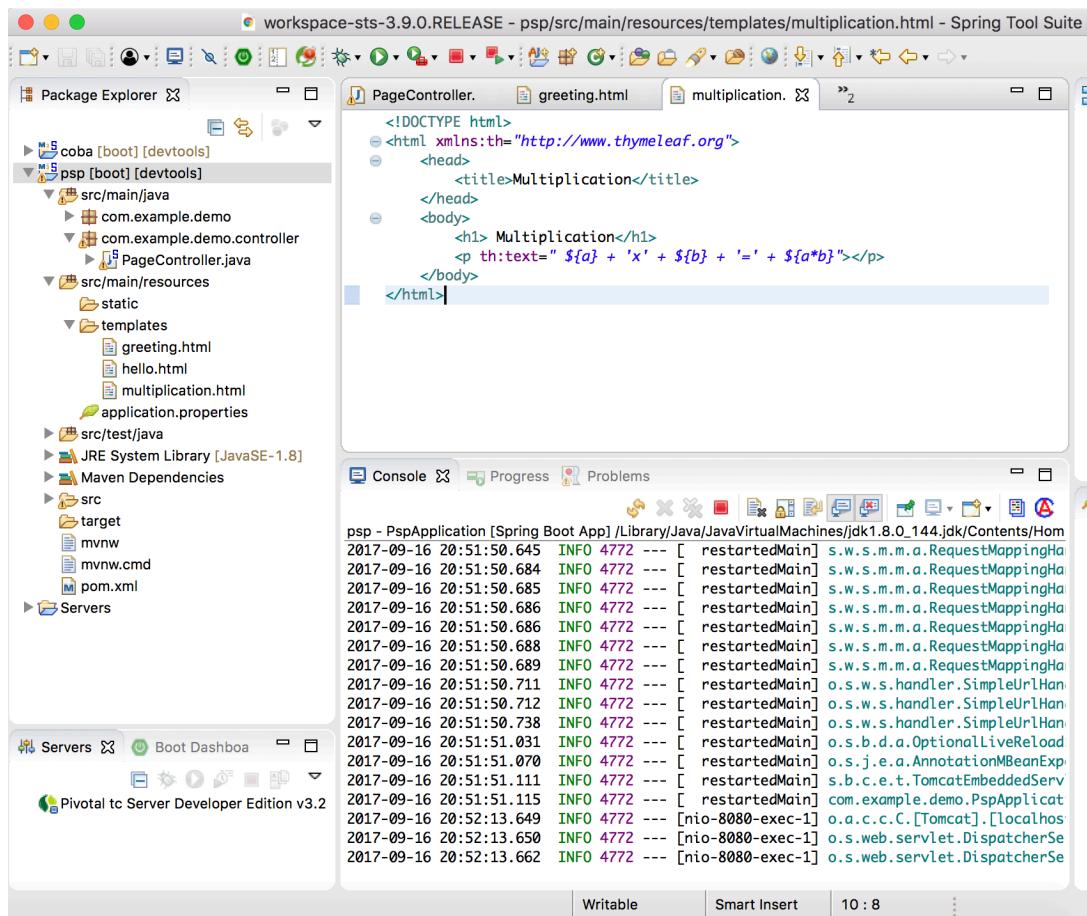
- Buatlah satu halaman baru untuk melakukan operasi perkalian.

Berikut saya membuat sebuah file baru bernama multiplication.html guna untuk mengoperasikan perkalian. Halaman ini menerima **2 buah** parameter dari query string yaitu a dan b yang dioperasikan perkalian dengan \${a*b}.

Saya menambahkan Request Mapping untuk /Multiplication pada file controller seperti berikut ini:



Sedangkan saya membuat sebuah file baru bernama multiplication seperti dibawah ini.

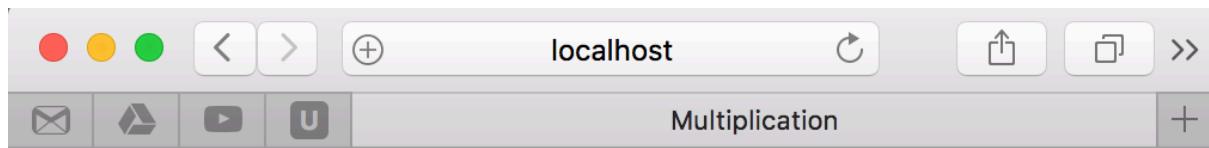


Berikut ialah hasil perkaliannya:

1. Akses <http://localhost:8080/Multiplication?a=10>



2. Akses : <http://localhost:8080/Multiplication?b=15>



Multiplication

0x5=0

3. Akses localhost:8080/Multiplication?a=10&b=5

A screenshot of a web browser window showing the result of a multiplication query. The address bar shows 'localhost'. The title bar says 'Multiplication'. The content area of the browser displays the text '10x5=50'. The browser interface is identical to the one in the first screenshot, with Mac OS X window controls and a toolbar.

Multiplication

10x5=50