

# Exercise: Context resolution with Tomcat and Spring

This lesson will introduce you to code involved to connect web addresses to the source code of a page.

Do this lesson with: your project! The one you created in [2 - Create Your Project](#)

## Components of a web address

Web addresses follow the format:

`protocol:subdomain.domain_name.top_level_domain/path_components`

Here are some examples of how different URLs follow this pattern.

More about protocols, domains, subdomains can be found [here](#)

<https://www.launchcode.org/impact>

<https://www.launchcode.org/volunteer>

<https://www.launchcode.org/assets/CoderGirl-Info-Summer-2019-8d0db9e1e155dfcf6b920f892bde09df3b915b3d4d88f03bf2588845ceba6ad5.pdf>

In real life the protocol and domain are set with domain name registration and web administration. The path components, everything after the “.org” and “.com” will be decided by source code.

## Running a project that has no path components

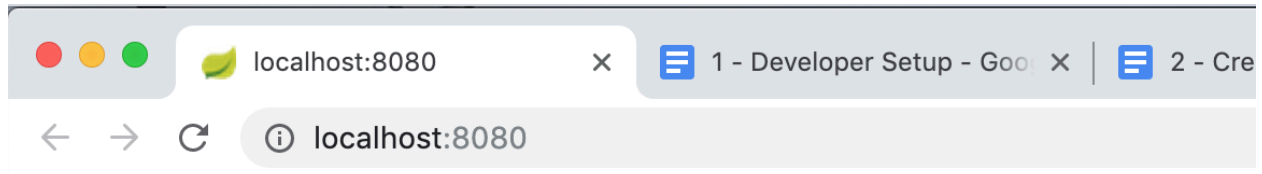
During the developer setup, you learned how to compile and run your project. These were the last two lines of the output. What do they mean?

```
2019-07-12 13:37:11.850 INFO 47883 --- [ restartedMain]
o.s.b.w.embedded.tomcat.TomcatWebServer : Tomcat started on port(s):
8080 (http) with context path ''
```

The second to last line indicates the address of your project on your computer.

```
2019-07-12 13:37:11.854 INFO 47883 --- [ restartedMain]
o.c.java.bookshelf.BookshelfApplication : Started
BookshelfApplication in 2.088 seconds (JVM running for 2.589)
```

Click this link to see what comes up: <http://localhost:8080>



# Whitelabel Error Page

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

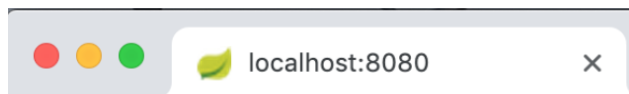
Fri Jul 12 13:50:09 CDT 2019

There was an unexpected error (type=Not Found, status=404).

No message available

Oh no! That looks scary! An error and no indication of how to resolve it. However, this does tell us many good things

1. It did come up with a response. Compare this to the error on the following pages. These are different. There's even less information!
  - a. <http://catswearingfunnyhats.com/>
  - b. localhost:9000
2. This error message was provided by spring. See that leaf in the corner? That tells you that spring provided the error message.

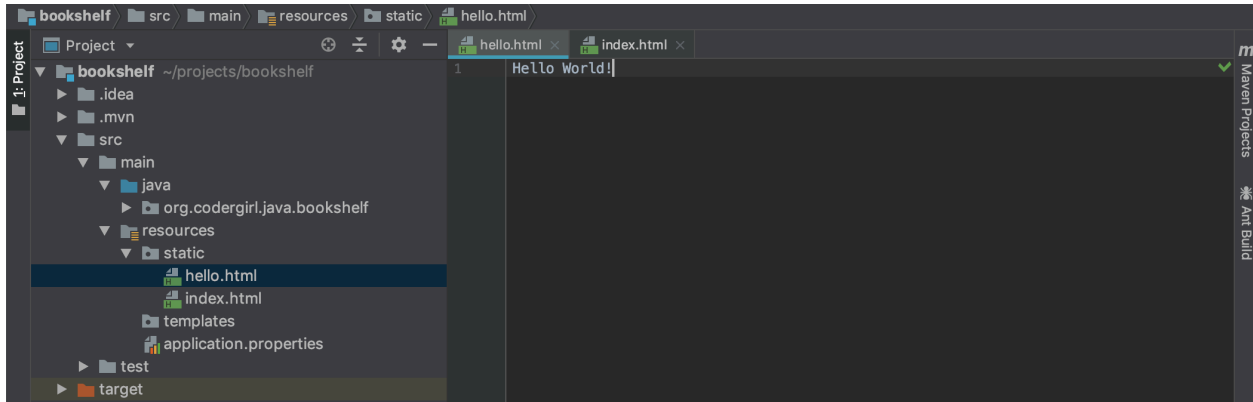


In this case, an error tells us that the server IS running, but it doesn't know what localhost:8080/ means. And to make matters worse, it doesn't know what to do when it doesn't find an error.

## Adding your first path

Using spring, you can add static html pages that render by themselves, or html templates that render using data calculated by a program. We'll introduce templates later, for now we'll create a path with your first static page.

Use IntelliJ to create hello.txt under the src/main/resources/static folder. Open the file and add some text.



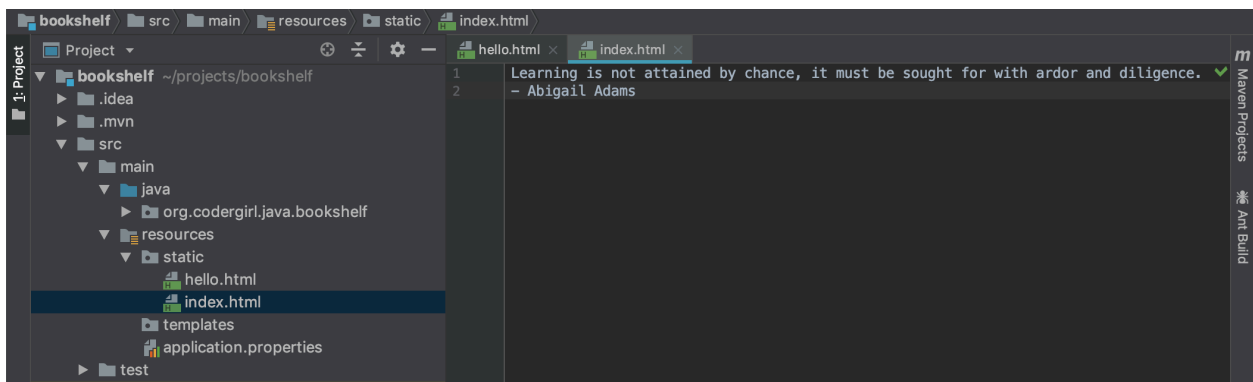
Then, start (or restart) your server and go to <http://localhost:8080/hello.html>

Your message appears! You've placed a path element in the source code, where spring and tomcat were able to find and register it. Don't worry about how it found it for now, except to know that elements under **src/main/resources/static** and **src/main/resources/templates** are discoverable as paths.

## Index: When the address has no path

But <http://localhost:8080> still doesn't work!

Repeat the same process as above, but this time name the file `index.html`. Add a greeting to this page as well. I've used one of my favorite quotes about learning from the US' second first lady.



Just like before, start (or restart) your server and go to <http://localhost:8080/index.html>.

If it worked, now go to <http://localhost:8080>. They're the same! And more importantly, no more error at <http://localhost:8080>.

This is a good point to check check your project back into GitHub. You should sync your work up to GitHub early and often to get in the habit.

The index is a special path element. One file called index.html, index.jsp, index.php, etc. should always be in the root of your web sources so that if a path is not provided.

## Lesson Complete!

At this point, check your project back into GitHub. You should sync your work up to GitHub early and often.

## Getting Help on this Lesson

Ask questions in slack

A solution to this exercise available [in this repo](#)