Thymeleaf & Controllers

Thymeleaf Helpers, Validators

SoftUni Team

Technical Trainers

Software University

SoftUni Foundation

Software University

http://softuni.bg

Table of Contents

1. Thymeleaf Helpers
   - Dates
   - Strings
   - Numbers
   - Aggregates
2. Validations

Have a Question?

SoftUni Foundation

sli.do

#java-web

Advanced Thymeleaf

Helpers

Helpers

- Objects that provide built-in functionalities that helps you enhance your view

Thymeleaf

Dates

Strings

List

Numbers

Date – Custom Format

SoftUni Foundation

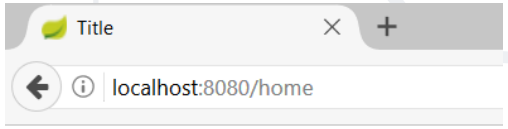
WhiskeyController.java

```
@GetMapping("/home")
public String getHomePage(Model model){
    model.addAttribute("myDate", new Date());
    return "whiskey-home";
}
```

Format Date

whiskey-home.html

```
<div th:text="${#dates.format(myDate,'yyyy-MMM-dd')}"></div>
```



2017-Mar-10

Date – Week Name of Day

SoftUni Foundation

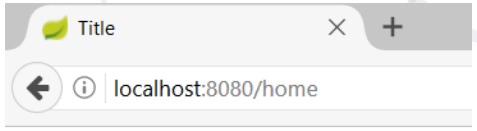
WhiskeyController.java

```
@GetMapping("/home")
public String getHomePage(Model model){
    model.addAttribute("myDate", new Date());
    return "whiskey-home";
}
```

Day Name

whiskey-home.html

```
<div th:text="${#dates.dayOfWeekName(myDate)}"></div>
```



Friday

Date – List Days

SoftUni Foundation

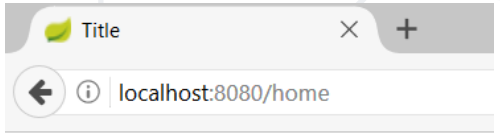
WhiskeyController.java

```
@GetMapping("/home")
  public String getHomePage(Model model){
    model.addAttribute("myDates", myDates);
    //2016-12-12, 2017-04-09 -> yyyy-MM-dd
    return "whiskey-home";
  }
```

List Days

whiskey-home.html

```
<div th:text="${#dates.listDay(myDates)}"></div>
```



[12, 9]

Date – Get Current Date

SoftUni Foundation

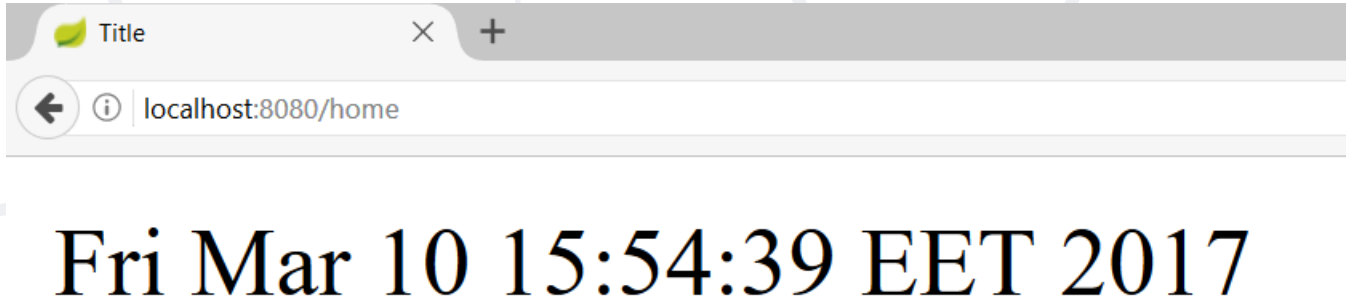
WhiskeyController.java

```
@GetMapping("/home")
public String getHomePage() {
    return "whiskey-home";
}
```

Today's Date

whiskey-home.html

```
<div th:text="${#dates.createNow()}"></div>
```



Strings – Is Empty

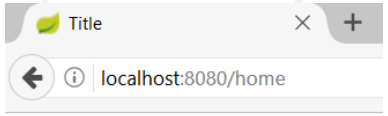
WhiskeyController.java

```
@GetMapping("/home")
public String getHomePage(Model model) {
    String whiskeyNull = null;
    model.addAttribute("whiskey", whiskeyNull);
    return "whiskey-home";
}
```

Null/Empty Check

whiskey-home.html

```
<div th:text="${#strings.isEmpty(whiskey)}"></div>
```



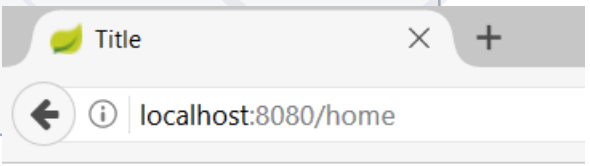
true

Strings – Substring

SoftUni Foundation

WhiskeyController.java

```
@GetMapping("/home")
public String getHomePage(Model model) {
    String whiskey = "Jack Daniels";
    model.addAttribute("whiskey", whiskey);
    return "whiskey-home";
}
```



Jack

Substring

whiskey-home.html

```
<div th:text="${#strings.substring(whiskey,0,4)}"></div>
```

Strings – Join

SoftUni Foundation

WhiskeyController.java

```
@GetMapping("/home")
public String getHomePage(Model model) {
    model.addAttribute("whiskeys", whiskeys);
    // Jack Daniels, Jameson
    return "whiskey-home";
}
```

Join

whiskey-home.html

```
<div th:text="${#strings.listJoin(whiskeys,'-')}"></div>
```

Strings – Capitalize

SoftUni Foundation

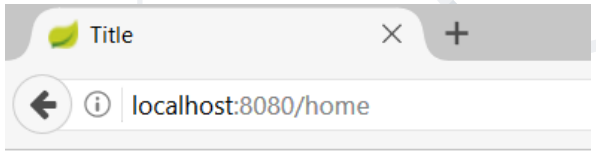
WhiskeyController.java

```
@GetMapping("/home")
public String getHomePage(Model model) {
    String whiskey = “jameson";
    model.addAttribute("whiskey", whiskey);
    return "whiskey-home";
}
```

Capitalize

whiskey-home.html

```
<div th:text="${#strings.capitalize(whiskey)}"></div>
```



Jameson

Numbers - Format

SoftUni Foundation

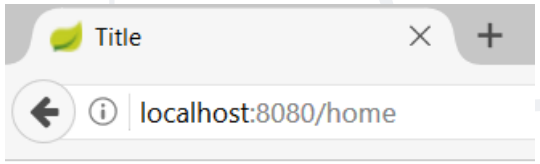
WhiskeyController.java

```
@GetMapping("/home")
    public String getHomePage(Model model) {
         double num = 3.14159;
         model.addAttribute("num", num);
         return "whiskey-home";
     }
```

Format

whiskey-home.html

```
<div th:text="${#numbers.formatDecimal(num,1,2)}"></div>
```



3.14

Numbers - Sequence

SoftUni Foundation

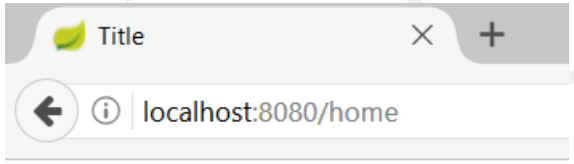
WhiskeyController.java

```
@GetMapping("/home")
public String getHomePage(Model model) {
    return "whiskey-home";
}
```

Sequence

whiskey-home.html

```
<span th:each="number: ${#numbers.sequence(0,2)}">
    <span th:text="${number}"></span>
</span>
```



0 1 2

Aggregates - Sum

SoftUni Foundation

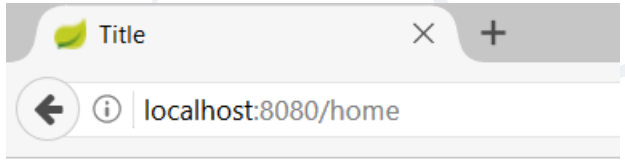
WhiskeyController.java

```
@GetMapping("/home")
public String getHomePage(Model model) {
    double[] whiskeyPrices
        = new double[]{29.23, 21.22,33.50};
    model.addAttribute("whiskeyPrices",whiskeyPrices);
    return "whiskey-home";
}
```

Sum

whiskey-home.html

```
<div th:text="${#aggregates.sum(whiskeyPrices)}
```



83.95

Thymeleaf in JavaScript

SoftUni Foundation

JSController.java

```
@GetMapping("/js")
public String getMapPage(Model model){
    String message = "Hi JS!";
    model.addAttribute("message", message);
    return "page";
}
```

script.js

```
<script th:inline="javascript">
   var message = [[${message}]];
<script>
```

How to validate?

Implementing simple Error rendering

Spring Validation & Thymeleaf

SoftUni Foundation

- Making a simple **Model validation** and **Error rendering**

SomeModel.java

```
public class SomeModel {

    @NotNull
    @Size(min = 3, max = 10, message = "Invalid name")
    private String name;
}
```

Not Null

Size

Error Message

SomeController.java

```
@Controller
public class SomeController {

    @GetMapping("/add")
    public String getPage
            (@ModelAttribute SomeModel someModel) {
        return "add";
    }
}
```

Sending a model to the view

Spring Validation & Thymeleaf

SoftUni Foundation

- Making a simple **Model validation** and **Error rendering**

SomeController.java

```
    @PostMapping("/add")
    public String add (@Valid @ModelAttribute SomeModel someModel, BindingResult
bindingResult) {
        if(bindingResult.hasErrors()){
            return "add";
        }

        this.someService.save(someModel);

        return "redirect:/home";
    }
```

Validate the model

Validation Result

Spring Validation & Thymeleaf

SoftUni Foundation

- Making a simple **Model validation** and **Error rendering**

add.html

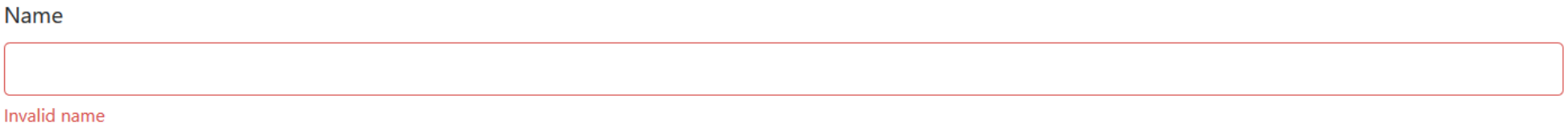
```
<form method="post" th:object="${someModel}">
  <div class="form-group" th:classappend="${#fields.hasErrors('name')}? 'has-danger'">
    <label for="nameId">Name</label>
    <input type="text" th:field="*{name}"/>
    <small id="nameHelp"
    th:each="error : ${#fields.errors('name')}" th:text="${error}“
      Error Message
    </small>
  </div>
</form>
```

Get Object

Append Class

Access Field

Render Error



List All Errors

SoftUni Foundation

add.html

```
<ul th:if="${#fields.hasErrors('*')}">
  <li th:each="err : ${#fields.errors('*')}" th:text="${err}">
    Input is incorrect
  </li>
</ul>
```

- Invalid creator
- Invalid name
- Mutation cannot be null
- Invalid description
- Invalid hours
- You must select capitals

add.html

```
<ul th:if="${#fields.hasErrors('${someModel.*}')}">
  <li th:each="err : ${#fields.errors('${someModel.*}')}" th:text="${err}">
    Input is incorrect
  </li>
</ul>
```

Custom Annotations (1)

- You can also implement **custom validation** annotations
  - Sometimes it is necessary due to complex validation functionality

PresentOrFuture.java

```
@Retention(RetentionPolicy.RUNTIME)
@Target(ElementType.FIELD)
@Constraint(validatedBy = PresentOrFutureValidator.class)
public @interface PresentOrFuture {

    String message() default "Invalid Date";

    Class<?>[] groups() default {};

    Class<? extends Payload>[] payload() default {};
}
```

Custom Annotations (2)

- You will have to implement a **custom validator** too

add.html

```
public class PresentOrFutureValidator implements ConstraintValidator<PresentOrFuture, Date>
{
    @Override
    public boolean isValid(Date date,
                           ConstraintValidatorContext constraintValidatorContext) {
        Date today = new Date();
        return date.after(today);
    }
}
```

Annotation

Field Type

True = No Error;
False = Error

Summary

- Objects that provide built-in functionalities that helps you enhance your view
- Thymeleaf provides helpers and validations
- Making a simple **Model validation** and **Error rendering**

Questions?

SoftUni

Software University

SoftUni Svetlina

SoftUni Creative

SoftUni Digital

SoftUni Foundation

SoftUni Kids

SoftUni Diamond Partners

SoftUni Foundation

XSsoftware

SBTech
we know sports

telenor

SoftwareGroup
doing it right

NETPEAK

SmartIT

SUPER HOSTING .BG

INDEAVR
Serving the high achievers

INFRAGISTICS

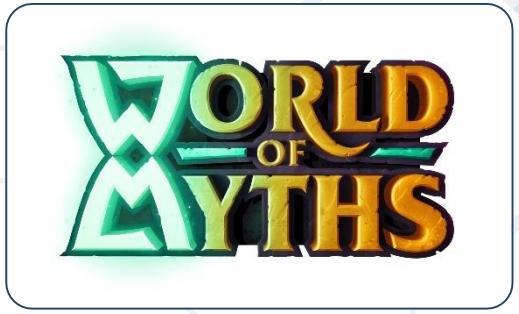
LIEBHERR

æternity

codeXio

SoftUni Organizational Partners

SoftUni Foundation



Trainings @ Software University (SoftUni)

SoftUni Foundation

- Software University – High-Quality Education and Employment Opportunities
  - softuni.bg
- Software University Foundation
  - http://softuni.foundation/
- Software University @ Facebook
  - facebook.com/SoftwareUniversity
- Software University Forums
  - forum.softuni.bg

License

- This course (slides, examples, demos, videos, homework, etc.) is licensed under the "Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International" license