



Putting the View of MVC into a Spring Bean with htmx

JUG Stuttgart – 2024.02.29
Thomas Schühly

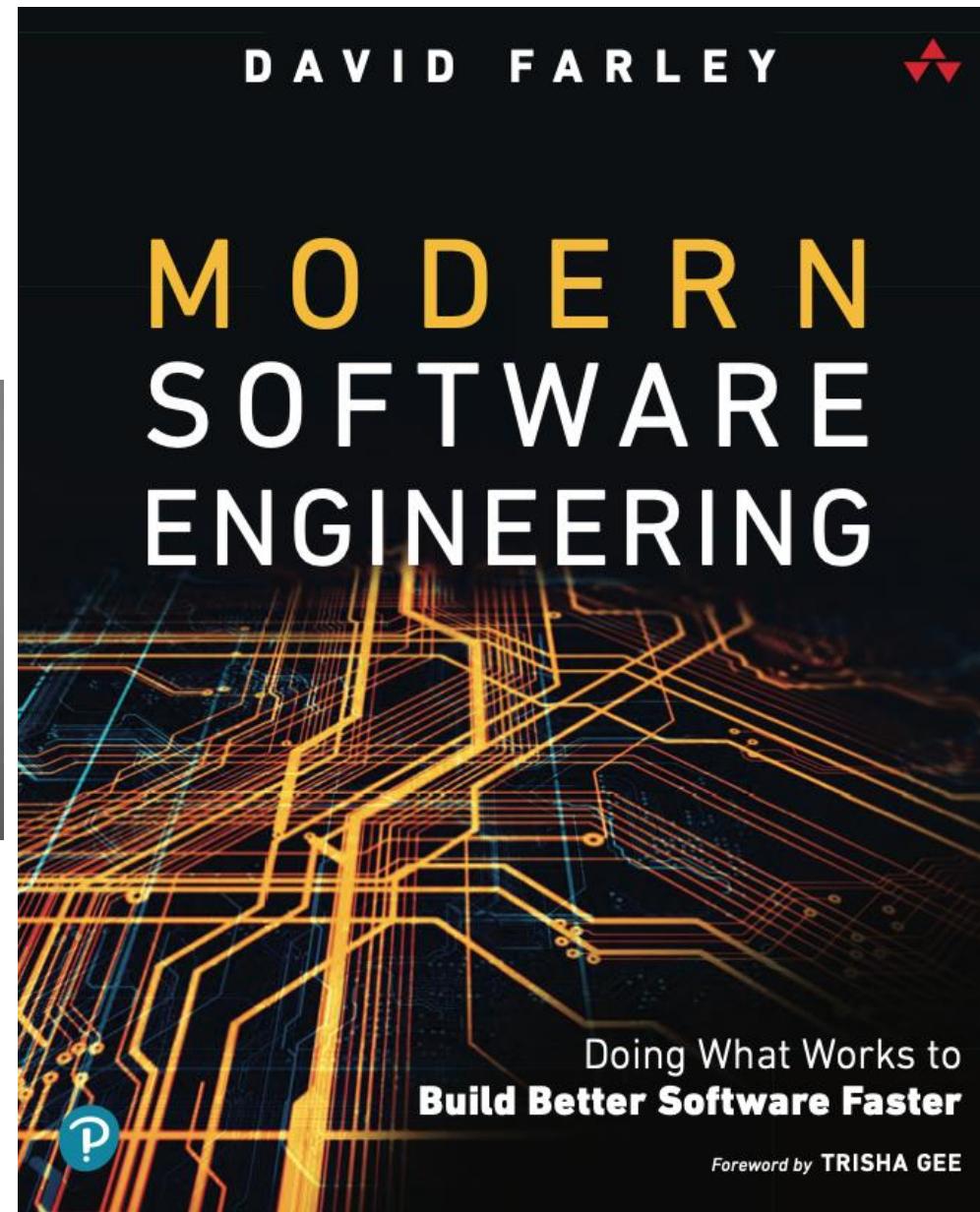
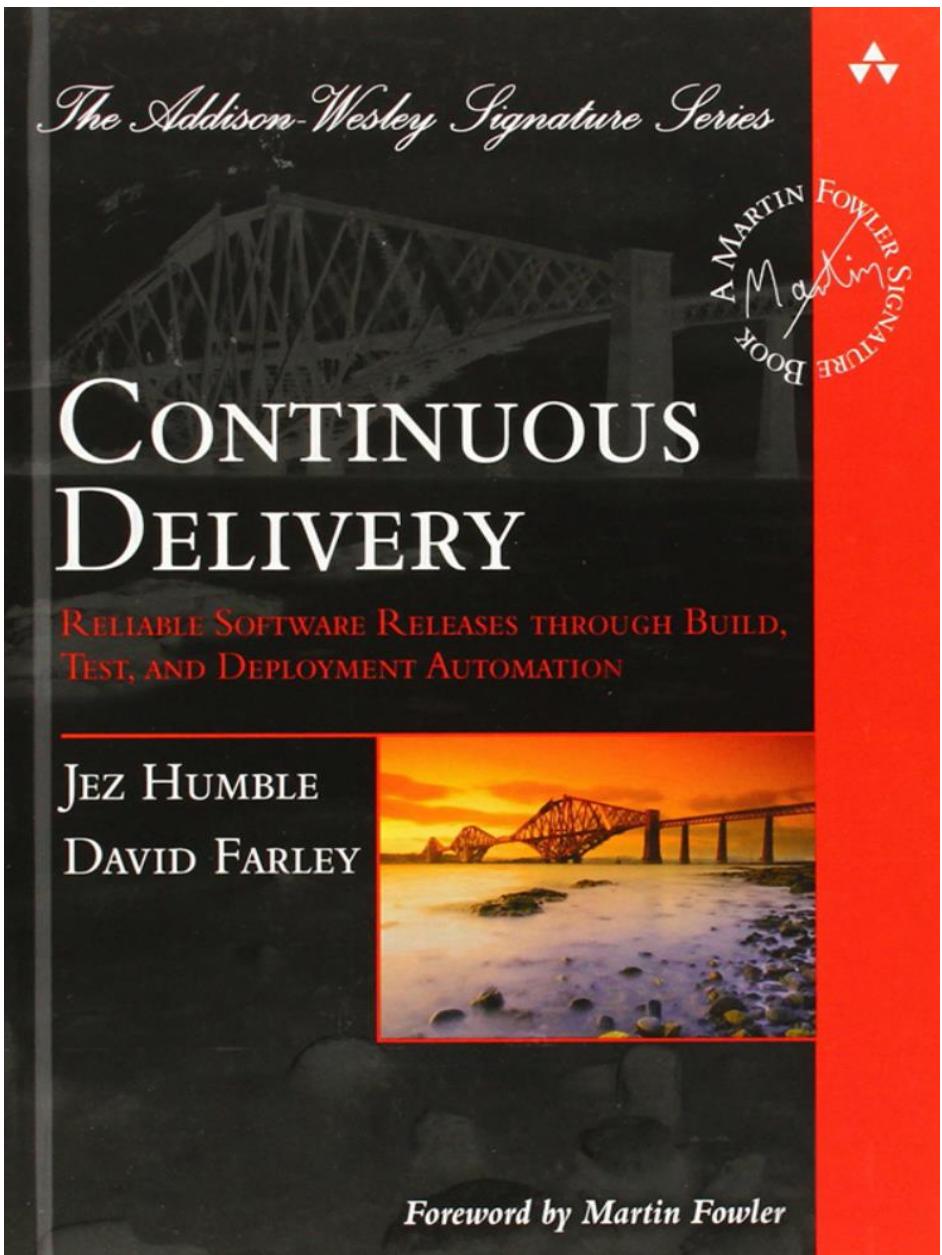
Thomas Schühly



- Spring Boot + Kotlin + HTMX = ❤️
- Blogging @tschuehly.de
- Open-Source Developer:
 - github.com/tschuehly/spring-view-component
 - github.com/tschuehly/htmx-supabase-spring-boot-starter
- Youngest Speaker @Spring I/O
- Software Engineer @alandia

Software Engineering

Software Engineering



Engineering

„Stifling Bureaucracy and
heavy weight process
control“

„Simply writing code
and nothing else“

“In other disciplines, Engineering is simply the stuff that works. It is practical, pragmatic and more, not less, efficient.”

Dave Farley

What is Modern Software Engineering?

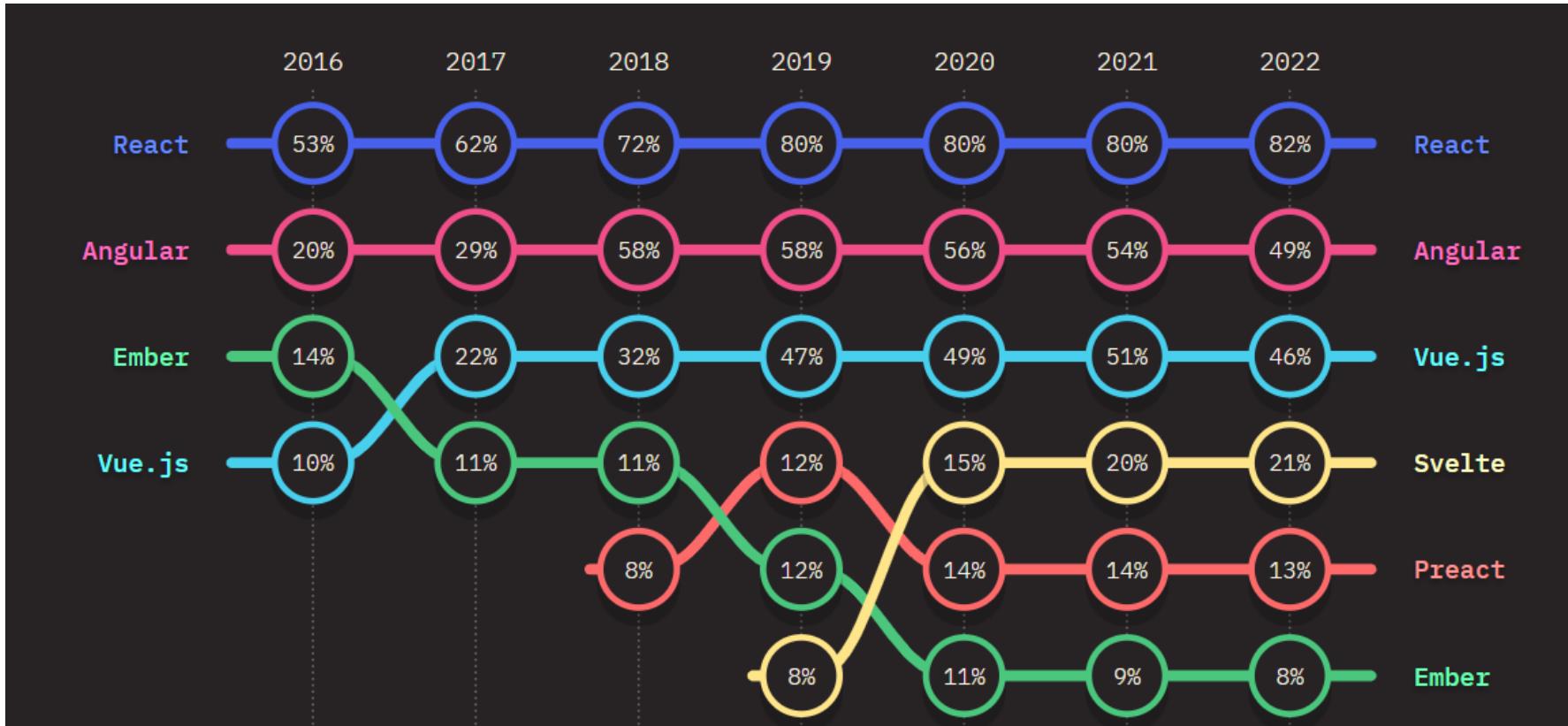
“if an engineering approach to software development doesn’t help us to create better software faster, then it’s wrong and doesn’t qualify as “Engineering”. ”

Dave Farley

What is Modern Software Engineering?

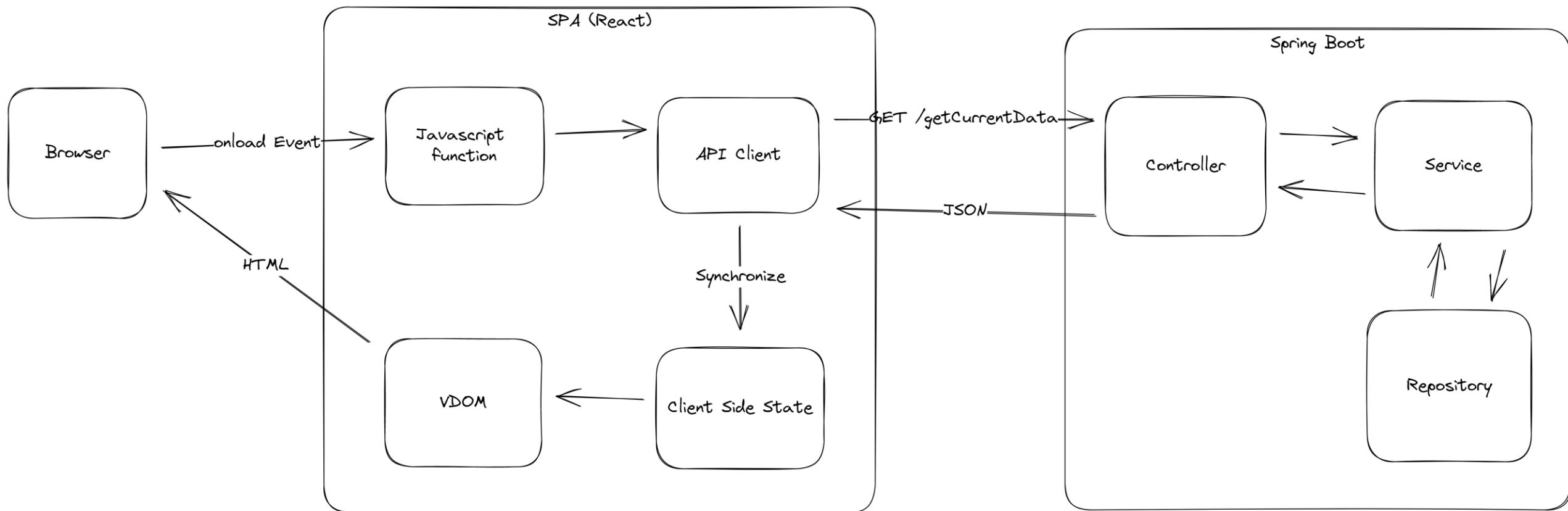


FRONT-END FRAMEWORK USAGE OVER TIME



State of JavaScript Survey 2022

SPA



After years of relative stability, many are now beginning to question the status quo. [...] on the server Astro, Remix and Next.js (among others) are making us reconsider how much code we really need to ship to the client."

State of JS 2022

<https://2022.stateofjs.com/>

**Do we need the complexity of
“modern” JavaScript frameworks
for building web?**

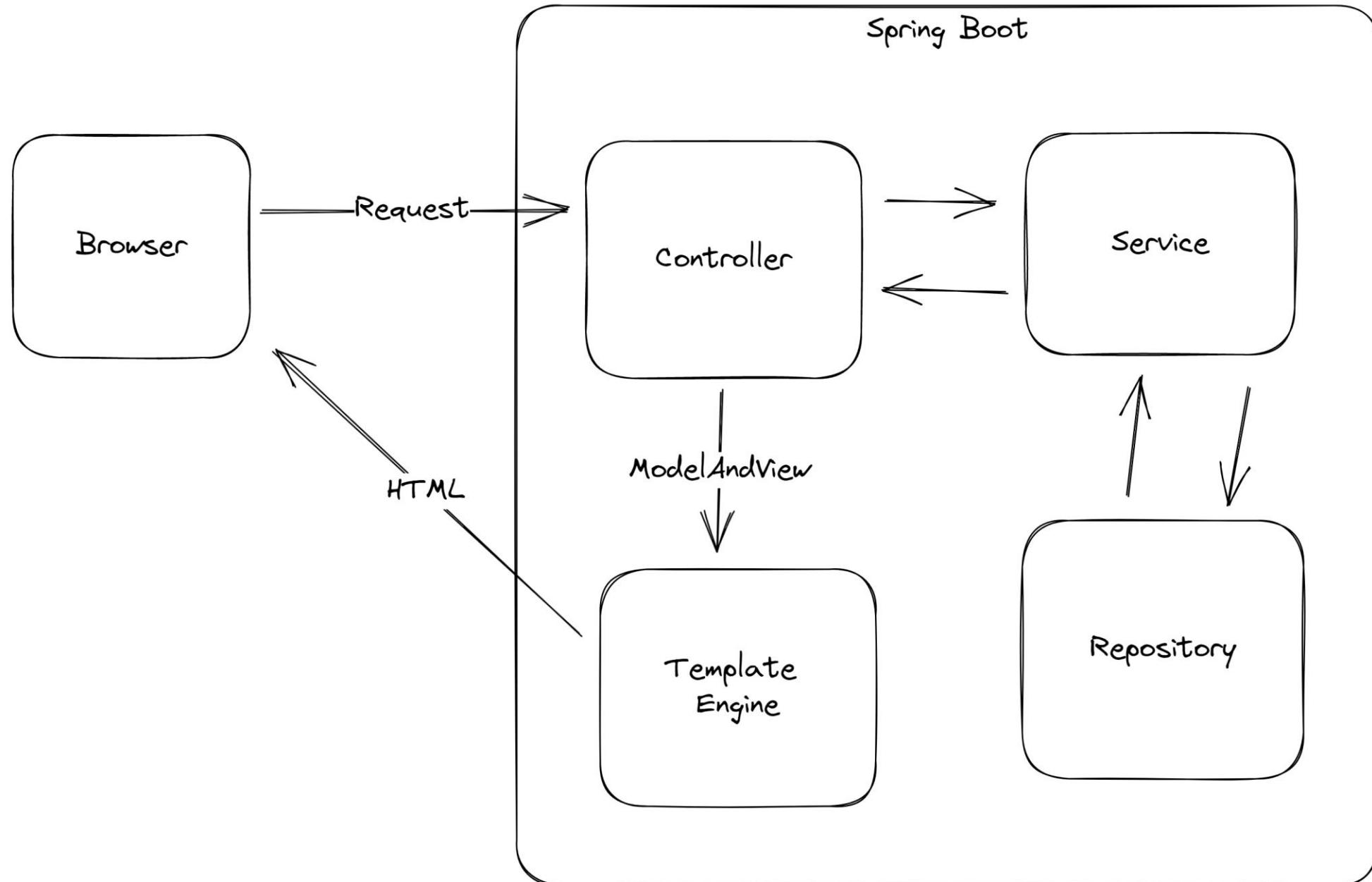


- Single Page Applications are an architectural style, that incurs additional complexity.
- Tradeoffs review is skipped, if requirements need a framework like React

thoughtworks Technology Radar Vol. 27

www.thoughtworks.com/content/dam/thoughtworks/documents/radar/2022/10/tr_technology_radar_vol_27_en.pdf

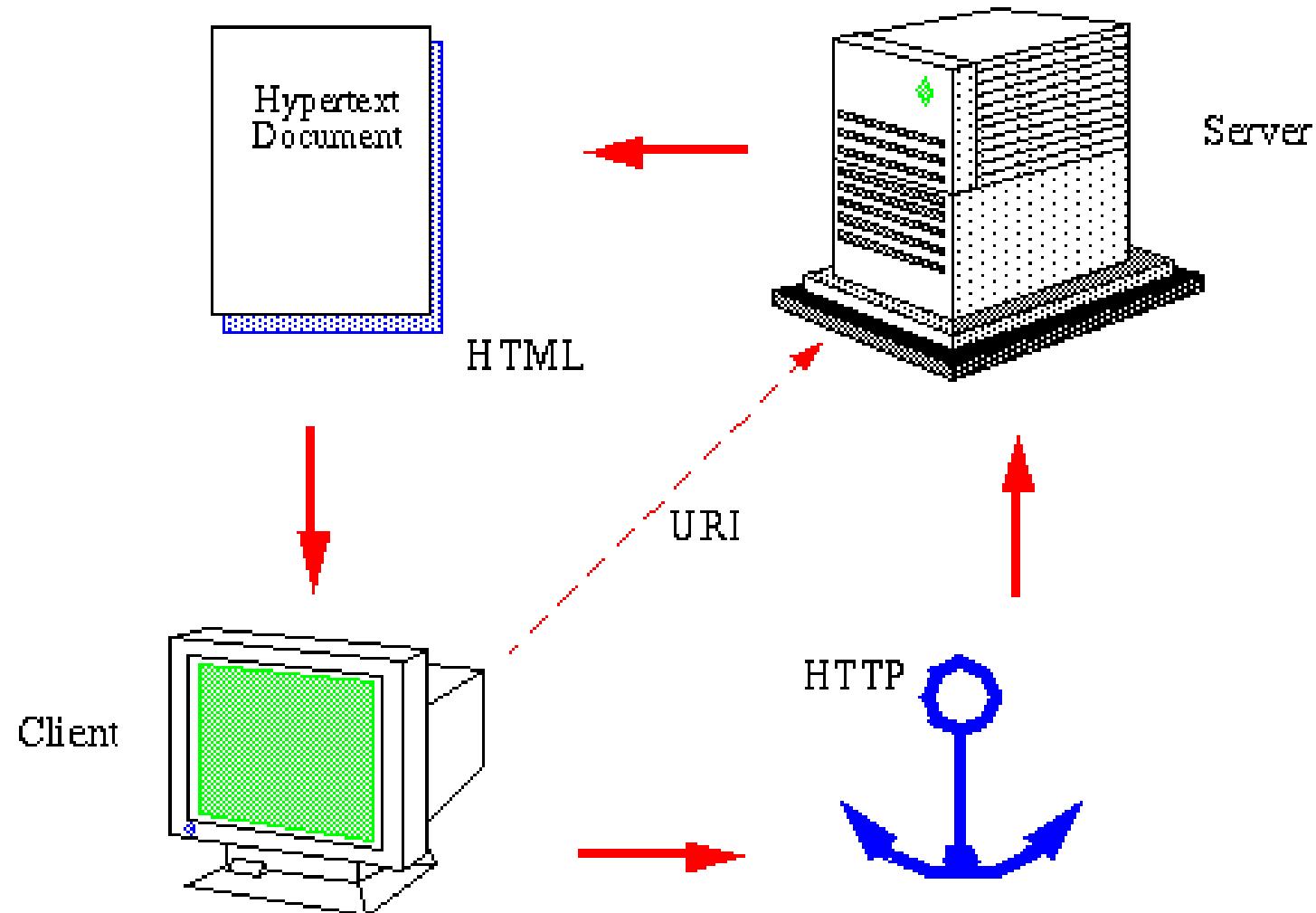
Multi Page Application



**DB TO
JSON TO
JS TO HTML**

**DB
TO HTML**





Hypermedia is defined by the presence of application control information embedded within, or as a layer above, the presentation of information.

Roy Fielding

Architectural Styles and the Design of Network-based Software Architectures



```
<!DOCTYPE html>
<html>
  <head>
    <title>My Website</title>
  </head>
  <body>
    <a href="http://example.com/">Go to example.com</a>
  </body>
</html>
```



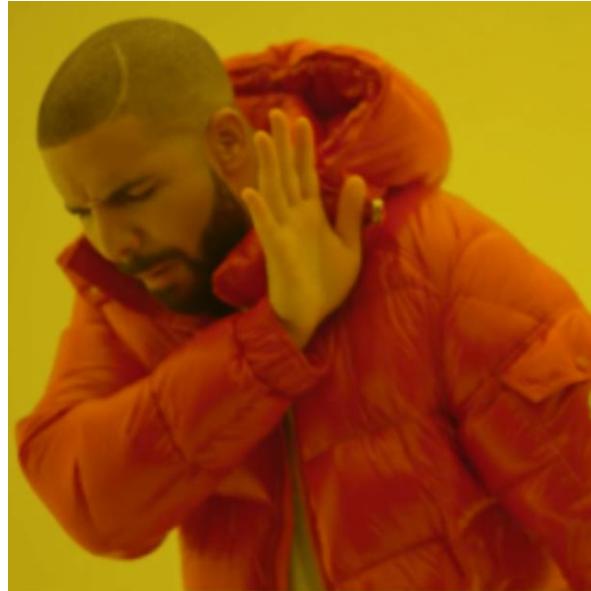
**"I'M GOING TO
CREATE A
RESTFUL API..."**



"USING JSON..."



**"HERE ARE MY
API DOCS"**



Creating
your
own Client

Just use
the Browser
as Client



```
1 {
2   "_embedded": {
3     "orderList": [
4       {
5         "orderId": "001A",
6         "price": 150,
7         "quantity": 25,
8         "_links": {
9           "self": {
10              "href": "http://localhost:8080/spring-security-rest/api/customers/10A/001A"
11            }
12          },
13        {
14          "orderId": "002A",
15          "price": 250,
16          "quantity": 15,
17          "_links": {
18            "self": {
19              "href": "http://localhost:8080/spring-security-rest/api/customers/10A/002A"
20            }
21          }
22        }
23      ],
24      "_links": {
25        "self": {
26          "href": "http://localhost:8080/spring-security-rest/api/customers/10A/orders"
27        }
28      }
29 }
```

8.2.4. Example Form Submission: Questionnaire Form

Consider the following document:

```
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<title>Sample of HTML Form Submission</title>
<H1>Sample Questionnaire</H1>
<P>Please fill out this questionnaire:
<FORM METHOD="POST" ACTION="http://www.w3.org/sample">
<P>Your name: <INPUT NAME="name" size="48">
<P>Male <INPUT NAME="gender" TYPE=RADIO VALUE="male">
<P>Female <INPUT NAME="gender" TYPE=RADIO VALUE="female">
<P>Number in family: <INPUT NAME="family" TYPE=text>
<P>Cities in which you maintain a residence:
<UL>
<LI>Kent <INPUT NAME="city" TYPE=checkbox VALUE="kent">
<LI>Miami <INPUT NAME="city" TYPE=checkbox VALUE="miami">
<LI>Other <TEXTAREA NAME="other" cols=48 rows=4></textarea>
</UL>
Nickname: <INPUT NAME="nickname" SIZE="42">
<P>Thank you for responding to this questionnaire.
<P><INPUT TYPE=SUBMIT> <INPUT TYPE=RESET>
</FORM>
```

Document type

RFC **Historic**

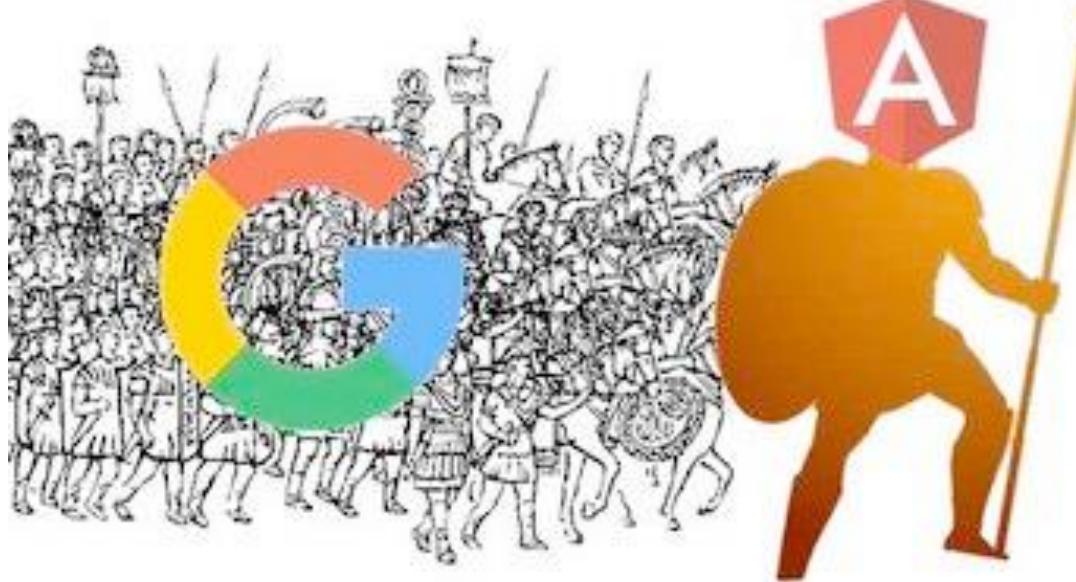
November 1995

[Report errata](#)

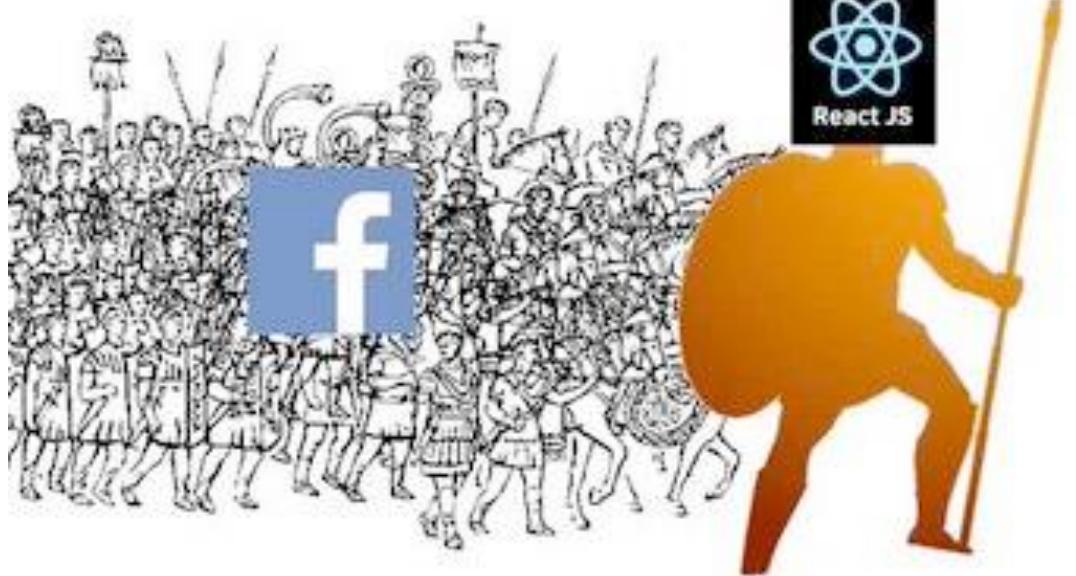
Obsoleted by [RFC 2854](#)

Was [draft-ietf-html-spec](#)

WHO WILL WIN?



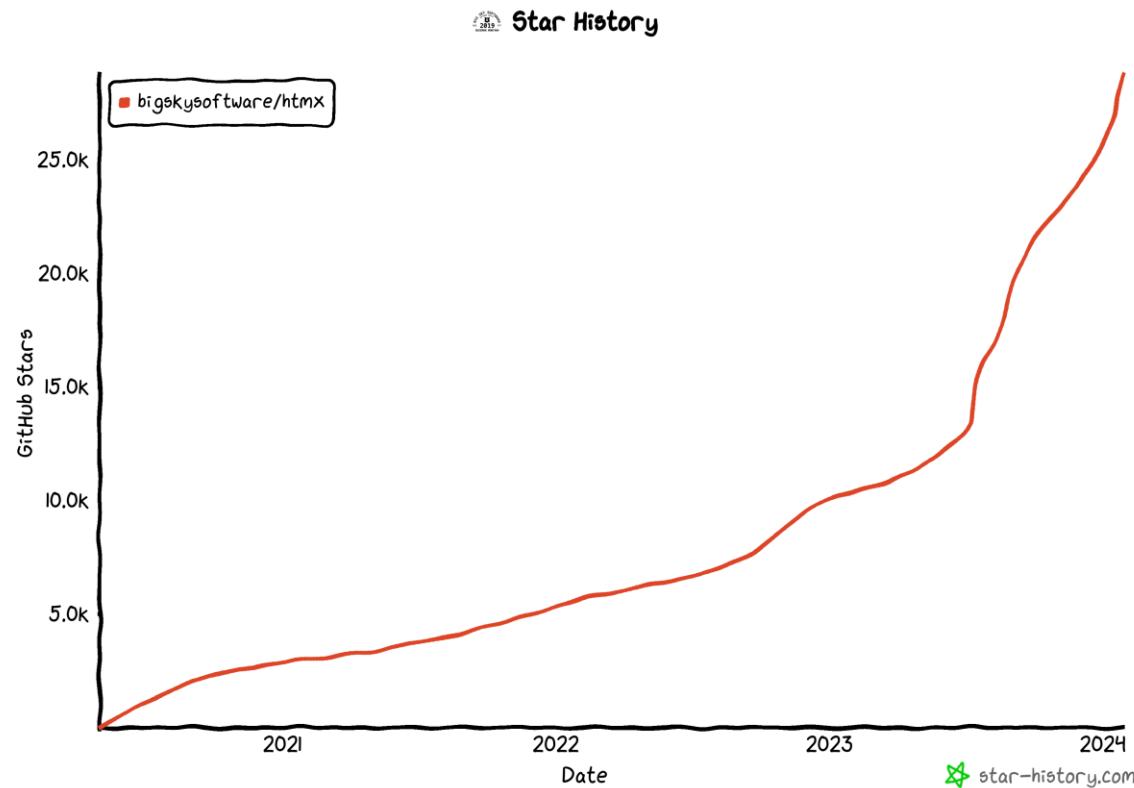
VS.



"u guys should use
hypermedia"



a lunatic in
montana and his
internet friends



< > ⏪ ⏴ https://risingstars.js.org/2023/en#section-framework

Front-end Frameworks

Rank	Framework	Change in Stars
1	React	+16.9k★
2	htmx	+15.6k★
3	Svelte	+10.3k★

The screenshot shows a ranking of front-end frameworks based on star count. React is at the top with 16.9k stars, followed by htmx with 15.6k stars, and Svelte with 10.3k stars. The URL in the browser bar is https://risingstars.js.org/2023/en#section-framework.



```
<a href="/blog">Blog</a>
```



```
<button hx-post="/clicked"
         hx-trigger="click"
         hx-target="#parent-div"
         hx-swap="outerHTML" >
    Click Me!
</button>
```

LOOK AT ME

BACKEND DEV

HTMX

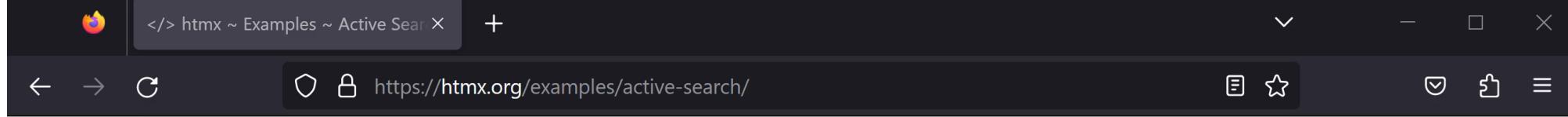
YOU'RE FULLSTACK NOW

haiku

*javascript fatigue:
longing for a hypertext
already in hand*



```
<input type="search"
       name="search"
       placeholder="Begin Typing To Search Users..."
       hx-post="/search"
       hx-trigger="input changed delay:500ms"
       hx-target="#search-results">
```



Server Requests [↓ Hide](#)

Initial State

HTML

```
<h3>
  Search Contacts
  <span class="htmx-indicator">
     Searching...
  </span>
</h3>

<input class="form-control" type="search"
      name="search" placeholder="Begin Typing To Search Users..."
      hx-post="/search"
      hx-trigger="keyup changed delay:500ms, search"
      hx-target="#search-results"
      hx-indicator=".htmx-indicator">
```

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	QR	S	T	U	V																																																																																																																																		
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3	How to use info 1 2				<table border="1"> <tr> <td>1</td><td>#REF! Error</td><td></td><td></td><td></td><td>263</td><td>Absolute Formula</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>318</td><td>Hardcoded Formulas</td><td></td><td></td><td></td><td>4</td><td>Array Formula</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>2</td><td>External Links</td><td></td><td></td><td></td><td>0</td><td>Table Formula</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>36</td><td>Formula Intersheet Links</td><td></td><td></td><td></td><td>4</td><td>User Defined Function</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>796</td><td>Formula with Function</td><td></td><td></td><td></td><td>0</td><td>Formulas with Name</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr> <td>34</td><td>Formula with "Text"</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>																				1	#REF! Error				263	Absolute Formula															318	Hardcoded Formulas				4	Array Formula															2	External Links				0	Table Formula															36	Formula Intersheet Links				4	User Defined Function															796	Formula with Function				0	Formulas with Name															34	Formula with "Text"																			
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11	InconsistentFormula	10	1	=E19/(1+B20)	100	1	E20
11	InconsistentFormula	1		=MONTH(F10)		1	F11:T11
11	InconsistentFormula	2		=IF(OR(F11=\$E\$17,F11=\$E\$18),\$E\$19,0)		1	F22:Q22
11	InconsistentFormula	3		=IF(F9="month",IF(OR(F11=\$E\$17,F11=\$E\$18),\$E\$19,0),\$E\$19*F7)		1	F24:T24
11	InconsistentFormula	4		=F6+1		1	G6:Q6
11	InconsistentFormula	5		=DATE(YEAR(F10),MONTH(F10)+2,0)		1	G10:R10
11	InconsistentFormula	6		=Q6+12		1	R6:T6
11	InconsistentFormula	7		=\$E\$19*R7		1	R22:T22
11	InconsistentFormula	8		=R7		3	S7:T7, G8:Q9, S9:T9
11	InconsistentFormula	9		=DATE(YEAR(R10),MONTH(R10)+13,0)		1	S10:T10
11	InconsistentFormula	10					

12	Inconsistent Formula	13	0		181	
12	Inconsistent Formula	1	=C6-B6		24	1 C10:Z10
12	Inconsistent Formula	2	=MONTH(C11)		24	1 C12:Z12
12	Inconsistent Formula	3	=IF(C6>=\$B\$20,\$B\$19,0)		12	1 C18:N18
12	Inconsistent Formula	4	=IF(C6>=\$B\$26,MIN(C6-\$B\$26+1,C10)*\$B\$25,0)		24	1 C24:Z24
12	Inconsistent Formula	5	=C6+1		29	2 D6:N7, T8:Z8
12	Inconsistent Formula	6	=EOMONTH(C11,1)		11	1 D11:N11
12	Inconsistent Formula	7	=N6+3		4	1 O6:R6
12	Inconsistent Formula	8	=EOMONTH(N11,3)		4	1 O11:R11

C PPL School of Freedom, Equal Op... X +

Discussion in public session (93 amendments filed)

Find a keyword

Authors Articles · 11 Spells

★ Favorites 0

Text order | Latest filed

27 amendments correspond to your criteria - Reset

ART. ADD. BEFORE ARTICLE 1

n ° 82 IS Marco's monique + 11 signatories Withdrawn
Av. art. 1st The school of the Third Republic was born in the context of a military defeat, in order to streng...

ARTICLE 1

n ° 83 IS Marco's monique + 11 signatories 2 identical amendments ●● Rejected
Art. 1st DELETION Article 1 of the bill aims to experiment for a period of 5 years, the possibility of establi...

ART. ADD. AFTER ARTICLE 1

n ° 71 CRCE Pierre Ouzoulias + 2 signatories Adopted
Ap. art. 1st Article L 912-1-1 of the Education Code provides in its first paragraph: « The teaching freedom ...

ART. ADD. AFTER ARTICLE 2

n ° 2 rect. 2 LR Alexandra Borchio Fontimp + 22 signatories Adopted
Ap. art. 2 The law « confirming compliance with the Principles of the Republic » adopted in August 2021 ...

n ° 45 LR Stéphane Piednoir + 26 signatories Adopted
Ap. art. 2 The purpose of monitoring family instruction is to verify that the reason for this home instructio...

Export my selection of amendments in one click and without errors !

Export in .xlsx 27

PPL School of Freedom, Equal Opportunities and Secularity

Follow the folder

Article 10 See the 11 amendments ★ Follow the article

- 1 The education code is thus modified :
- 2 1 ° The third paragraph of article L. 111-1 is supplemented by a sentence thus written: « Persons participating in the public education service are also required to respect these values. » ;
- 3 2 ° After the first paragraph of article L. 141-5-1, a paragraph is inserted as follows :
- 4 « The same prohibition applies to persons who participate, including during school trips, in activities related to teaching in or outside establishments, organized by these schools and local public educational establishments. »

Article 11 See the 9 amendments ★ Follow the article

- 1 After article L. 111-2 of the education code, an article L. 111-2-1 is inserted as follows :
« Art. L. 111-2-1. – Students in primary schools, colleges and high schools wear uniform clothing within their school. The characteristics of this dress, including the choice of a uniform sports outfit, are specified by the internal regulations of each establishment. The obligation mentioned in this paragraph does not apply to shows, including rehearsals, played by students and related events.

Follow the article

SaaS Startup „Contexte“



What happened to the team?

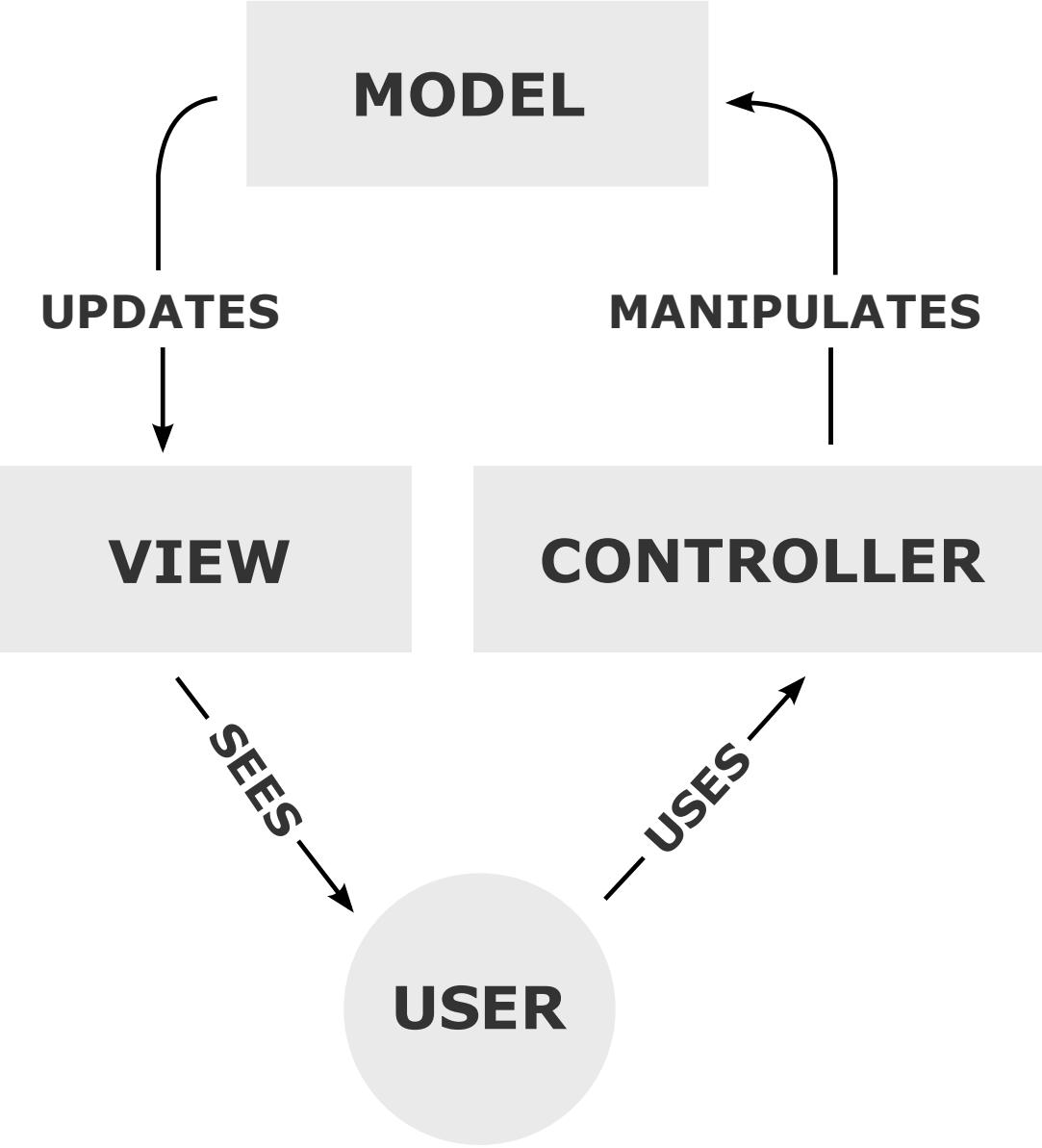
	Django + React	Django + htmx
Browser-only devs	1	0
Server-only devs	2	0
Full-stack devs	1	3



spring

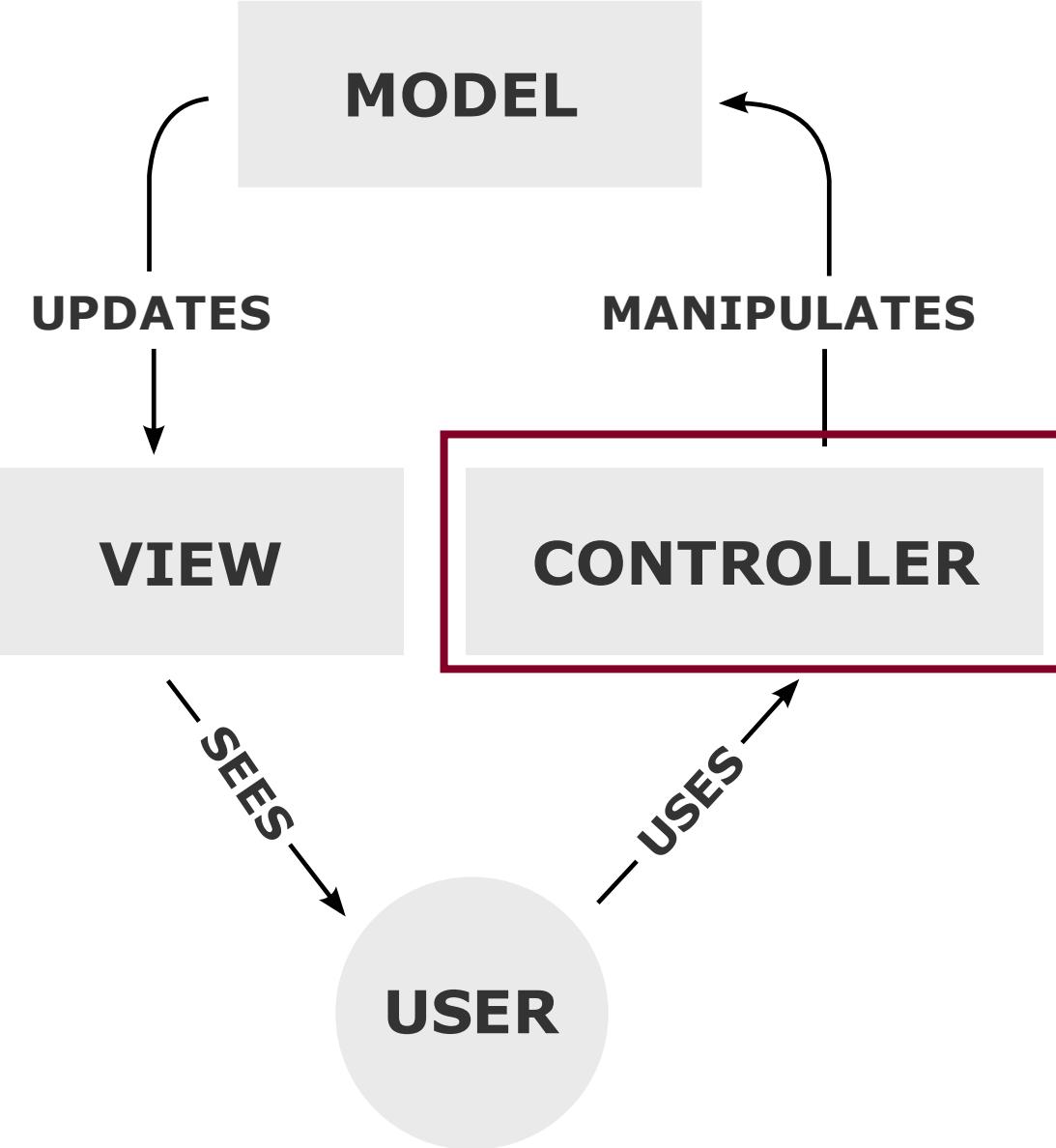


```
1 @Controller
2 class GreetingController {
3
4     @GetMapping("/greeting")
5     fun home(model: Model): String{
6
7         model.addAttribute("name", "SpringIO")
8
9         return "greeting"
10    }
11 }
```



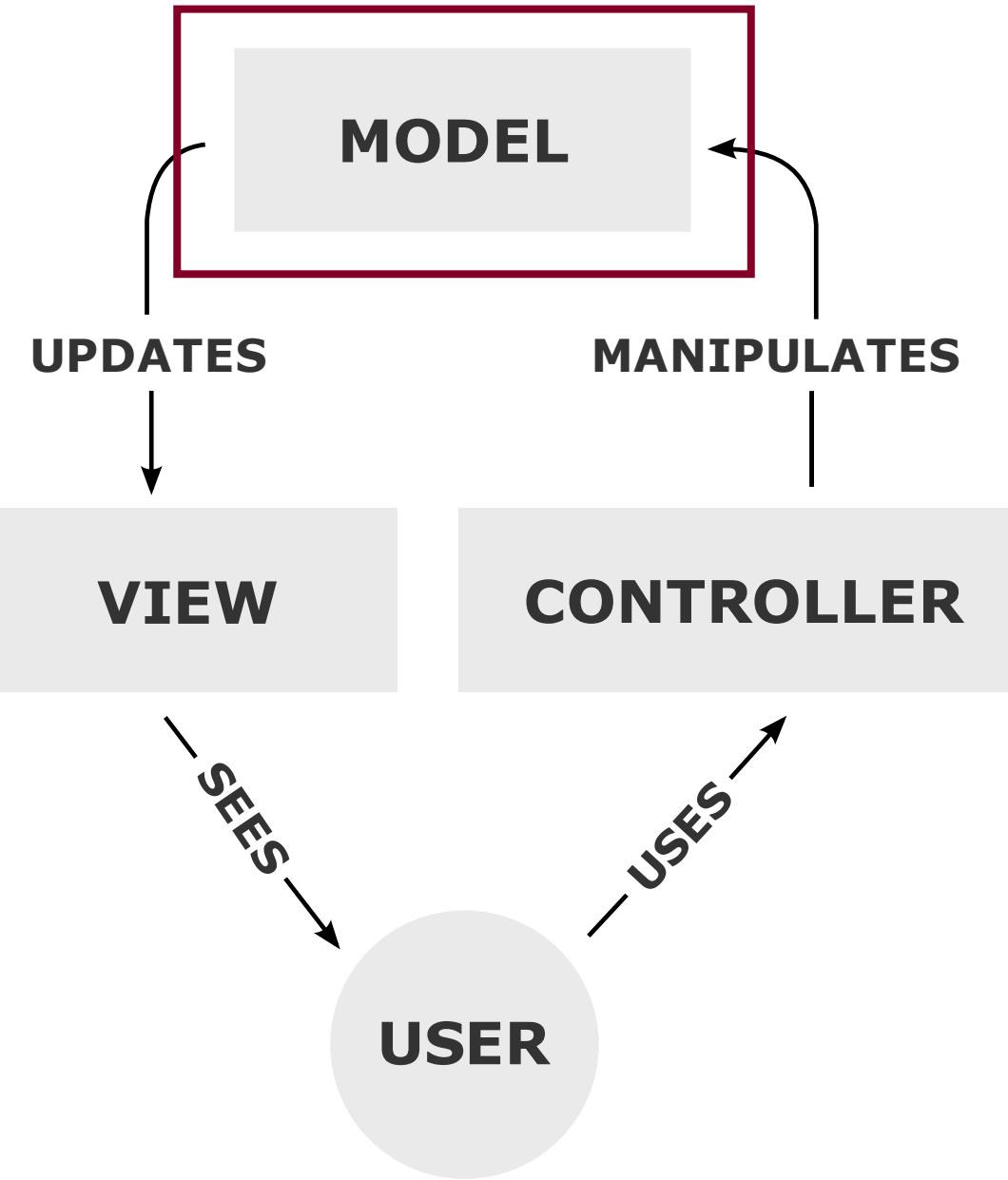


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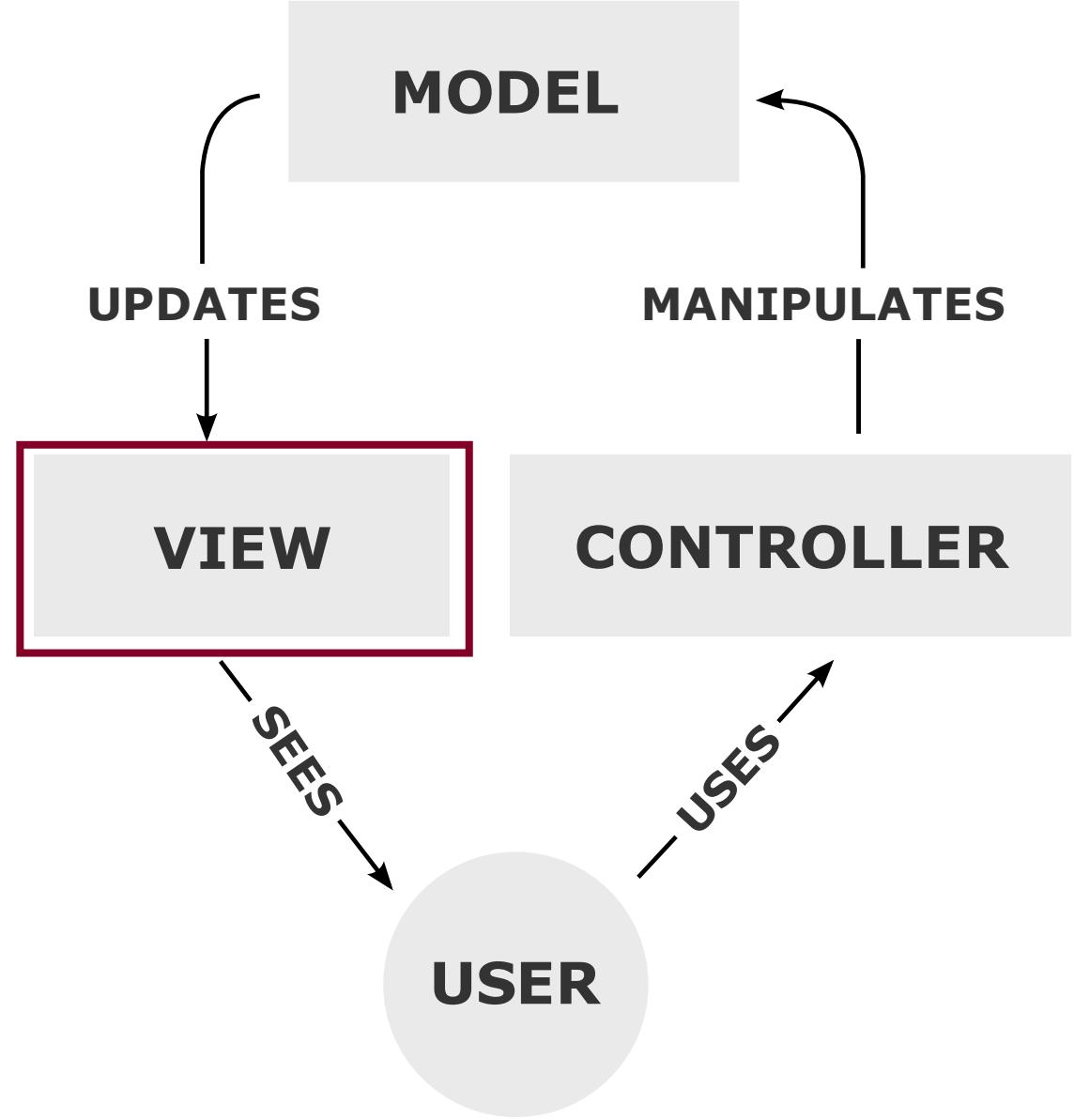


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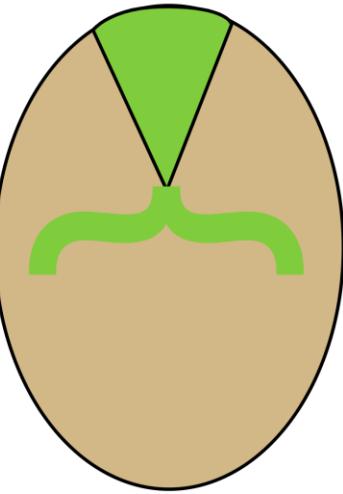




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5     fun home(model: Model): String{
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8
9     } return "greeting"
10 }
11 }
```



jstachio



Logic-less templates.



Thymeleaf

<#FREEMARKER>

jte



Thymeleaf



```
<!DOCTYPE HTML>
<html xmlns:th="http://www.thymeleaf.org">
<head>
    <title>Getting Started: Serving Web Content</title>
</head>
<body>
    <p th:text="'Hello, ' + ${name} + '!' ">
</body>
</html>
```



```
<!DOCTYPE HTML>
<html xmlns:th="http://www.thymeleaf.org">
<head>
    <title>Getting Started: Serving Web Content</title>
</head>
<body>
    <p th:text="'Hello, ' + ${name} + '!''" />
</body>
</html>
```



```
<h1>Product list</h1>
<table>
  <tr>
    <th>NAME</th>
    <th>PRICE</th>
    <th>IN STOCK</th>
  </tr>
  <tr th:each="prod : ${products}">
    <td th:text="${prod.name}">Onions</td>
    <td th:text="${prod.price}">2.41</td>
    <td th:text="${prod.inStock}? ${inStock} : ${notInStock}">yes</td>
  </tr>
</table>
```



```
<h1>Product list</h1>
<table>
  <tr>
    <th>NAME</th>
    <th>PRICE</th>
    <th>IN STOCK</th>
  </tr>
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    <td th:text="${prod.price}">2.41</td>
    <td th:text="${prod.inStock}? ${inStock} : ${notInStock}">yes</td>
  </tr>
</table>
```



jte



```
@import org.example.Page  
@param Page page
```

```
<head>  
    <meta name="description"  
          content="${page.getDescription( )}">  
    <title>${page.getTitle( )}</title>  
</head>
```



```
@import org.example.Page
@param Page page

<head>
    <meta name="description"
          content="${page.getDescription( )}">
    <title>${page.getTitle( )}</title>
</head>
```



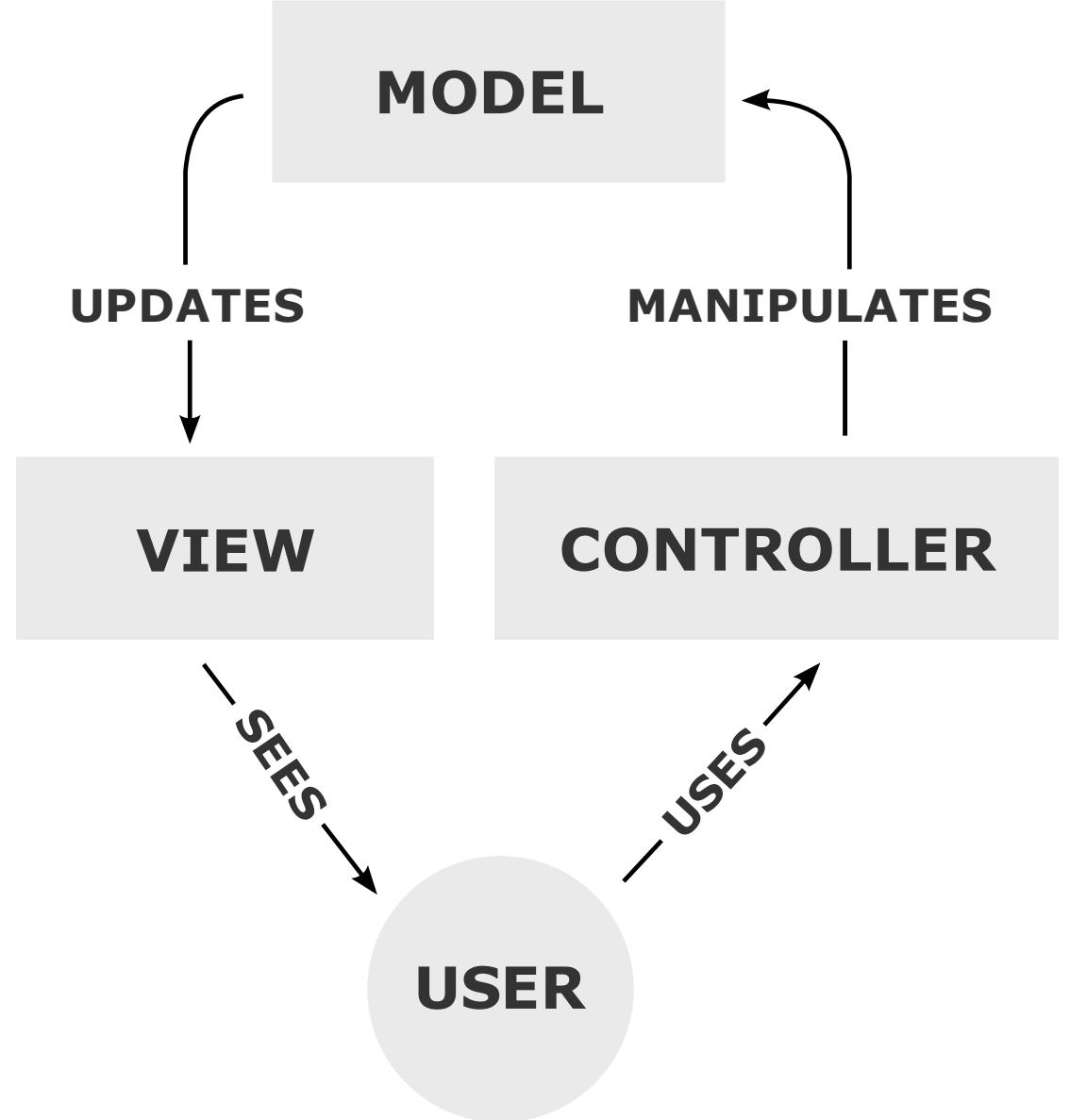
```
@import org.example.Page
@param Page page

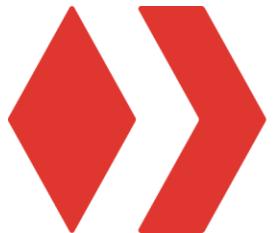
<head>
    @if(page.getDescription( ) != null)
        <meta name="description" content="${page.getDescription( )}">
    @endif
    <title>${page.getTitle( )}</title>
</head>
<body>
    <h1>${page.getTitle( )}</h1>
    <p>Welcome to my example page!</p>
</body>
```



personlist.jte

```
1 @import de.tschuehly.jteviewcomponentdemo.core.Person
2 @import java.util.List
3 @param List<Person> personList
4
5 <table>
6   <thead>
7     <tr>
8       <td>Id</td>
9       <td>Name</td>
10      <td>LastName</td>
11    </tr>
12  </thead>
13  <tbody>
14    @for(Person person : personList)
15      <tr>
16        <th>${person.getId( )}</th>
17        <th>${person.getName( )}</th>
18        <th>${person.getLastname( )}</th>
19      </tr>
20    @endfor
21  </tbody>
22 </table>
```



The logo icon is composed of three red diamond shapes pointing to the right. The first two diamonds are smaller and stacked vertically, while the third diamond is larger and positioned to the right of the second one.

ViewComponent



github.com/tschuehly/spring-view-component



```
@Controller  
public class SimpleController {  
  
    @GetMapping("/simple")  
    public String simple(Model model) {  
        model.addAttribute("greeting", "Hello JUG Stuttgart");  
        return "greeting";  
    }  
}
```





SimpleViewComponent.java

```
@ViewComponent
public class SimpleViewComponent {
    @Autowired
    final ExampleService exampleService;

    public SimpleView render() {
        return new SimpleView(exampleService.getHelloWorld());
    }

    public record SimpleView(String helloWorld) implements ViewContext {}
}
```



SimpleViewComponent.java

```
@ViewComponent
public class SimpleViewComponent {
    @Autowired
    final ExampleService exampleService;

    public SimpleView render() {
        return new SimpleView(exampleService.getHelloWorld());
    }

    public record SimpleView(String helloWorld) implements ViewContext {}
}
```



SimpleViewComponent.html

```
<!--/*@thymesVar id="simpleView"
  type="de.tschuehly.example.thymeleafjava.web.simple.SimpleViewComponent.SimpleView"-->
<div th:text="${simpleView.helloWorld()}"></div>
```



SimpleViewComponent.java

```
@ViewComponent
public class SimpleViewComponent {
    @Autowired
    final ExampleService exampleService;

    public SimpleView render() {
        return new SimpleView(exampleService.getHelloWorld());
    }

    public record SimpleView(String helloWorld) implements ViewContext {}
}
```



SimpleViewComponent.jte

```
@param de.tschuehly.example.jte.web.simple.SimpleViewComponent.SimpleView simpleView
<div>${simpleView.helloWorld()}</div>
```



SimpleController.java

```
@Controller
public class SimpleController {
    @Autowired
    private final SimpleViewComponent simpleViewComponent;

    @GetMapping("/simple")
    ViewContext simple() {
        return simpleViewComponent.render();
    }
}
```



Hello JUG Stuttgart



```
@ViewComponent
public class ParameterViewComponent {

    public record ParameterView(String message) implements ViewContext {}

    public String render(String message) {
        return new ParameterView(message)
    }
}
```



LayoutViewComponent.java

```
@ViewComponent
public class LayoutViewComponent {

    public ViewContext render(ViewContext nestedViewComponent) {
        return new LayoutView(nestedViewComponent);
    }

    public record LayoutView(ViewContext nestedViewComponent) implements ViewContext {}
}
```



LayoutViewComponent.java

```
@ViewComponent
public class LayoutViewComponent {

    public ViewContext render(ViewContext nestedViewComponent) {
        return new LayoutView(nestedViewComponent);
    }

    public record LayoutView(ViewContext nestedViewComponent) implements ViewContext {}
}
```



LayoutViewComponent.html

```
<nav></nav>
<!--/*@thymesVar id="layoutView"
    type="de.tschuehly.example.thymeleafjava.web.layout.LayoutViewComponent.LayoutView"-->
<div view:component="${layoutView.nestedViewComponent()}"></div>
<footer></footer>
```



LayoutViewComponent.java

```
@ViewComponent
public class LayoutViewComponent {

    public ViewContext render(ViewContext nestedViewComponent) {
        return new LayoutView(nestedViewComponent);
    }

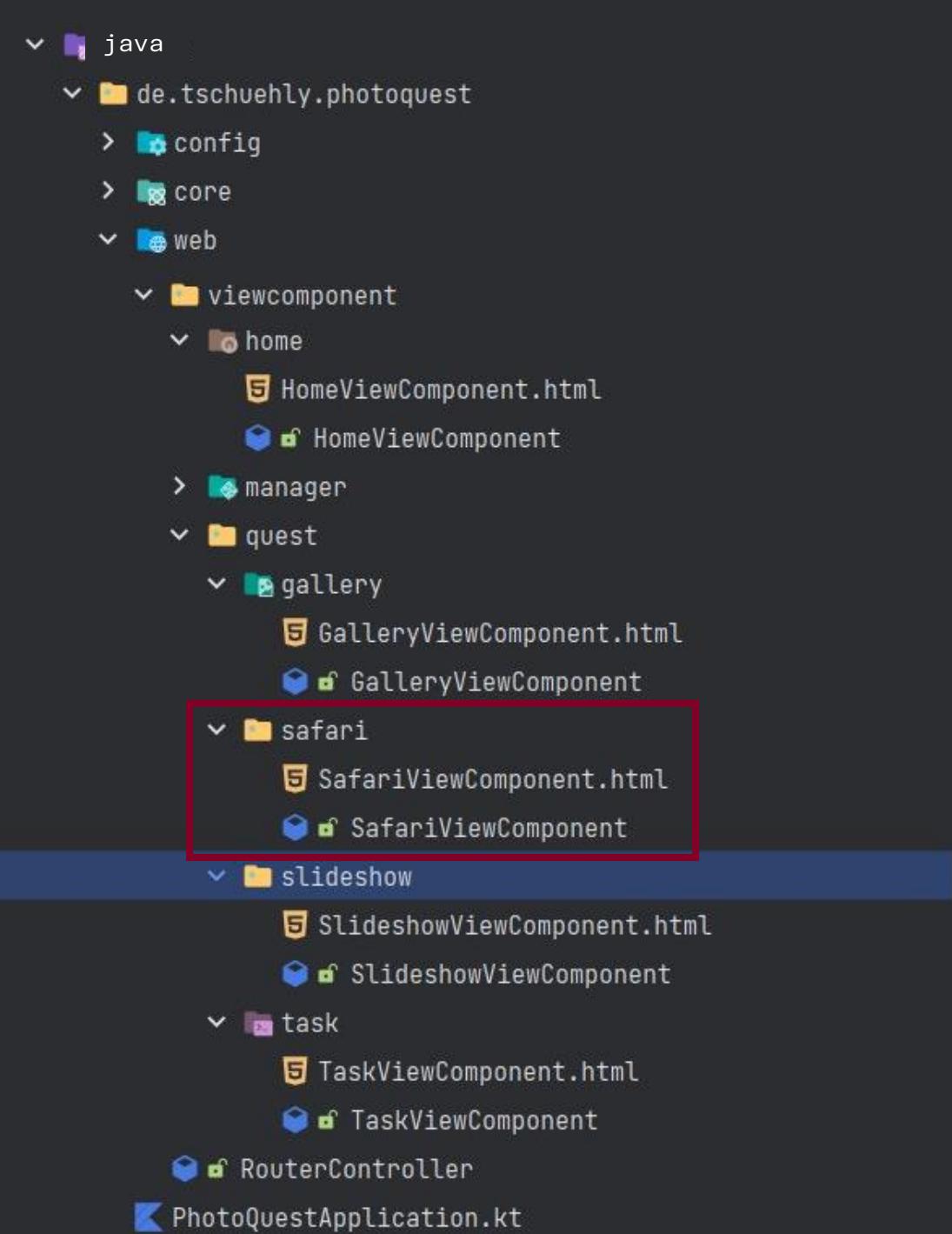
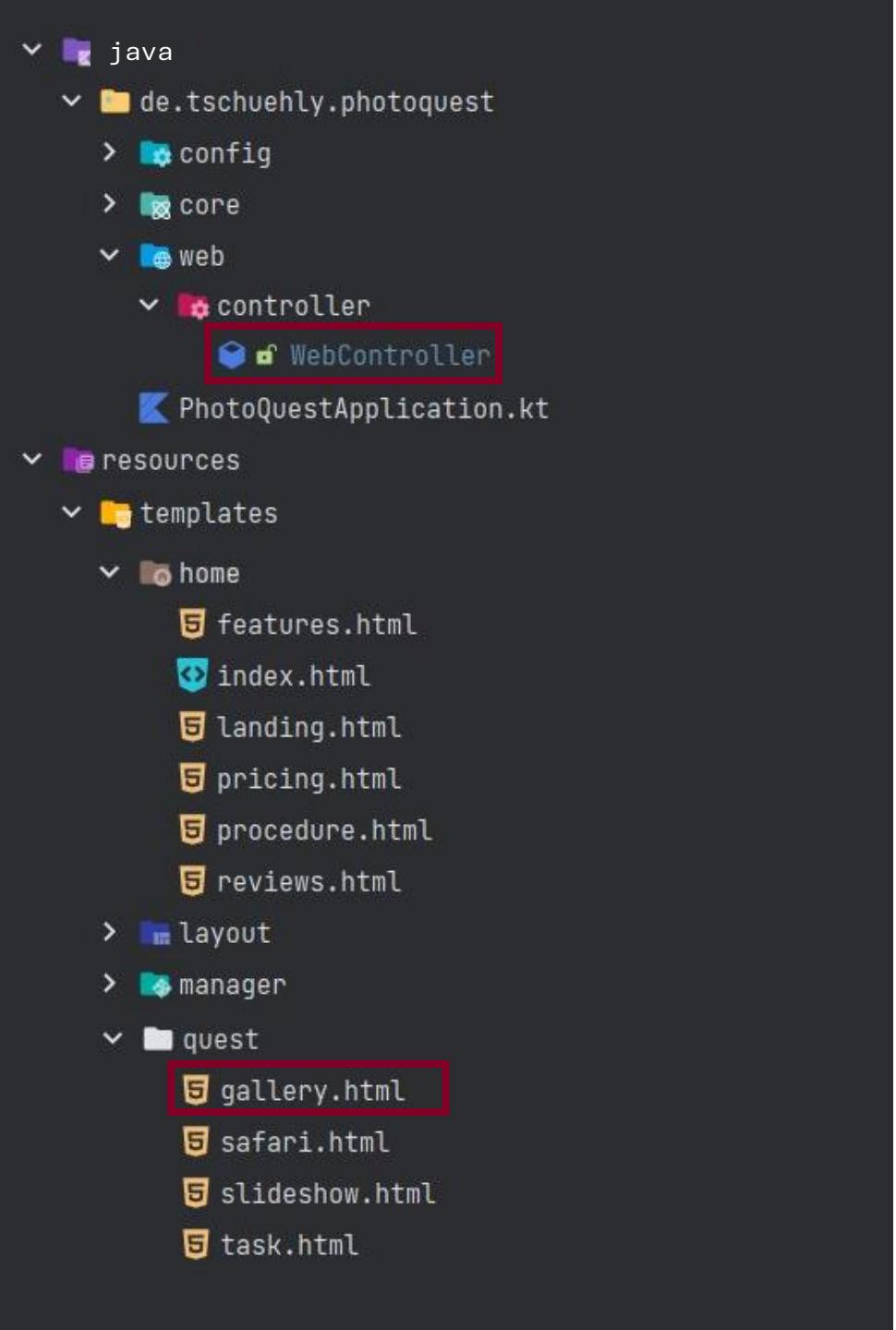
    public record LayoutView(ViewContext nestedViewComponent) implements ViewContext {}
}
```



LayoutViewComponent.jte

```
@param de.tschuehly.example.jte.web.layout.LayoutViewComponent.LayoutView layoutView
<nav></nav>
${layoutView.nestedViewComponent( )}
<footer></footer>
```

```
java
  de.tschuehly.photoquest
    config
    core
    web
      controller
        WebController
      PhotoQuestApplication.kt
resources
  templates
    home
      features.html
      index.html
      landing.html
      pricing.html
      procedure.html
      reviews.html
    layout
    manager
    quest
      gallery.html
      safari.html
      slideshow.html
      task.html
```



✓ Component Rendertime

DashboardViewComponent

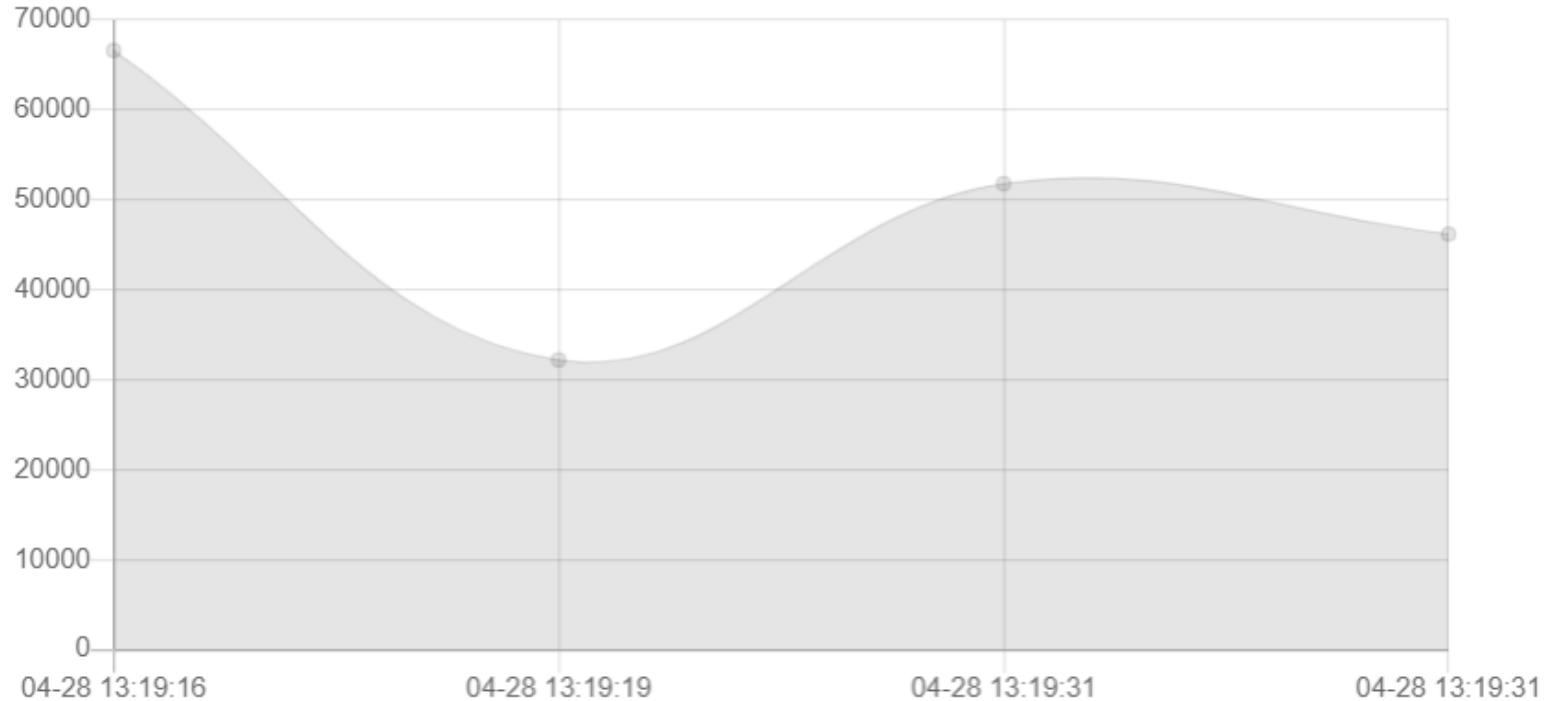
SidebarViewComponent

HeaderViewComponent

ChartViewComponent

TableViewComponent

SidebarViewComponent



```
● ● ●

@Around(
    "execution(de.tschuehly.spring.viewcomponent.core.IViewContext+ *(..)) && " +
        "@within(de.tschuehly.spring.viewcomponent.core.component.ViewComponent)"
)
fun aroundComponent(joinPoint: ProceedingJoinPoint): Any? {
    var returnValue: Any?
    val elapsedTime = measureNanoTime {
        returnValue = joinPoint.proceed()
    }
    val componentName = joinPoint.`this`.javaClass.simpleName.substringBefore("$$")
    analyticsService.saveAnalyticsDataFor(componentName, elapsedTime)
    return returnValue
}
```



AnalyticsChartViewComponent

```
@ViewComponent  
class AnalyticsChartViewComponent(  
) {  
}
```



AnalyticsChartViewComponent

```
@ViewComponent  
class AnalyticsChartViewComponent(  
) {  
}
```



AnalyticsChartViewComponent

```
@ViewComponent  
class AnalyticsChartViewComponent(  
) {  
}
```



AnalyticsChartViewComponent

```
@ViewComponent  
class AnalyticsChartViewComponent(  
) {  
}
```



DashboardViewComponent.kt

DashboardViewComponent.html

```
1 @ViewComponent
2 class DashboardViewComponent(
3     private val analyticsService: AnalyticsService
4 ) {
5
6 }
```



DashboardViewComponent.kt

DashboardViewComponent.html

```
1 @ViewComponent
2 class DashboardViewComponent(
3     private val analyticsService: AnalyticsService
4 ) {
5
6 }
```



DashboardViewComponent.kt

DashboardViewComponent.html

```
1 @ViewComponent
2 class DashboardViewComponent(
3     private val analyticsService: AnalyticsService
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DashboardViewComponent.kt

DashboardViewComponent.html

```
1 @ViewComponent
2 class DashboardViewComponent(
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4 ) {
5
6 }
```



DashboardViewComponent.kt

DashboardViewComponent.html

```
1 @ViewComponent
2 class DashboardViewComponent(
3     private val analyticsService: AnalyticsService
4 ) {
5
6 }
```



DashboardViewComponent.kt

DashboardViewComponent.html

```
1 @ViewComponent
2 class DashboardViewComponent(
3     private val analyticsService: AnalyticsService
4 ) {
5
6 }
```



DashboardViewComponent.kt

DashboardViewComponent.html

```
1 @ViewComponent
2 class DashboardViewComponent(
3     private val analyticsService: AnalyticsService
4 ) {
5
6 }
```



```
1 @Controller
2 class ComponentController(
3     private val analyticsChartViewComponent: AnalyticsChartViewComponent
4 ) {
5     @GetMapping("/lineChartComponent")
6     fun chartComponent(
7         @RequestParam name: String
8     ) = analyticsChartViewComponent.render(name)
9 }
```



ADMIN

+ New Report

⌚ Dashboard

☷ Tables

☰ Forms

📱 Tabbed Content

📅 Calendar

✓ Component Rendertime

DashboardViewComponent

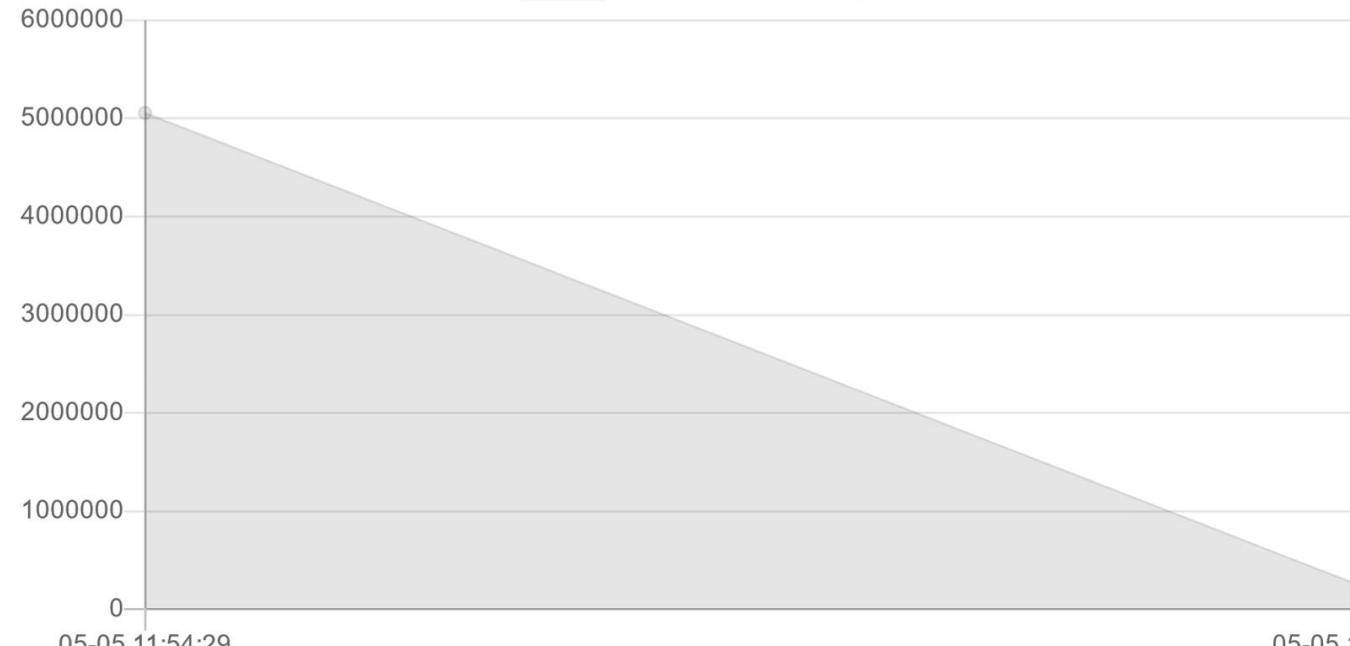
SidebarViewComponent

HeaderViewComponent

ChartViewComponent

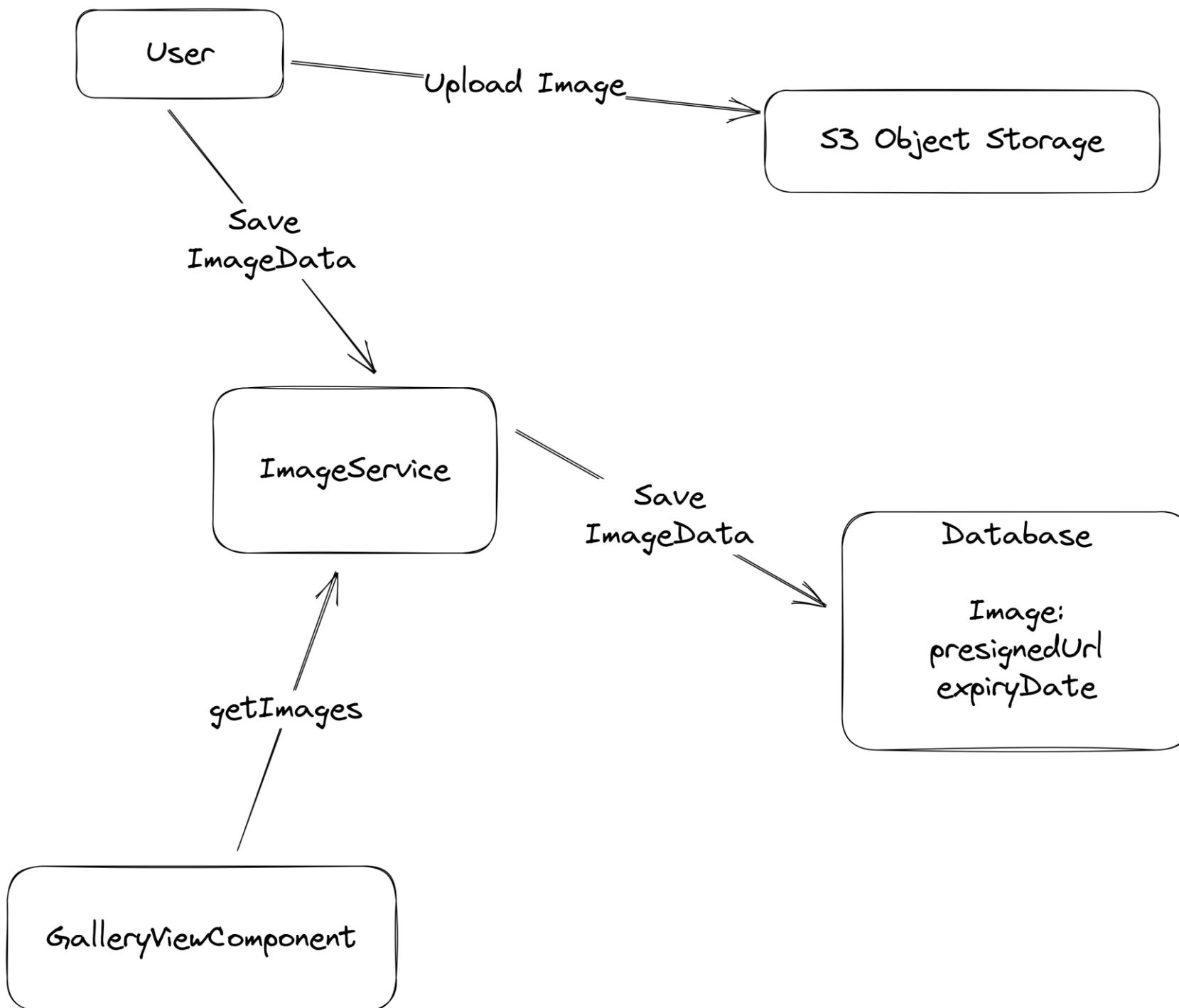
TableViewComponent

DashboardViewComponent



Bildergalerie





ImagePreviewComponent

Bildergalerie





ImagePreviewComponent.html

ImagePreviewComponent.kt

```
1 <div th:id="|imagePreview-${imagePreviewContext.id}|">  
2 </div>
```



ImagePreviewComponent.html

ImagePreviewComponent.kt

```
1 <div th:id="|imagePreview-${imagePreviewContext.id}|">  
2 </div>
```



ImagePreviewComponent.html

ImagePreviewComponent.kt

```
1 <div th:id="|imagePreview-${imagePreviewContext.id}|">  
2 </div>
```



ImagePreviewComponent.html

ImagePreviewComponent.kt

```
1 <div th:id="|imagePreview-${imagePreviewContext.id}|">  
2 </div>
```



ImagePreviewComponent.html

ImagePreviewComponent.kt

```
1 <div th:id="|imagePreview-${imagePreviewContext.id}|">  
2 </div>
```



ImagePreviewComponent.html

ImagePreviewComponent.kt

```
1 <div th:id="|imagePreview-${imagePreviewContext.id}|">  
2 </div>
```



ImagePreviewComponent.html

ImagePreviewComponent.kt

```
1 <div th:id="|imagePreview-${imagePreviewContext.id}|">  
2 </div>
```



ImagePreviewComponent.html

ImagePreviewComponent.kt

```
1 <div th:id="|imagePreview-${imagePreviewContext.id}|">  
2 </div>
```



ImagePreviewComponent.html



ImagePreviewComponent.kt

```
1 <div th:id="|imagePreview-${imagePreviewContext.id}|">  
2 </div>
```

Bildergalerie





GalleryViewComponent.kt

GalleryViewComponent.html

```
1 @ViewComponent
2 class GalleryViewComponent(
3     private val imageService: ImageService,
4     private val imagePreviewComponent: ImagePreviewComponent
5 ) {
6 }
```



GalleryViewComponent.kt

GalleryViewComponent.html

```
1 @ViewComponent
2 class GalleryViewComponent(
3     private val imageService: ImageService,
4     private val imagePreviewComponent: ImagePreviewComponent
5 ) {
6 }
```



GalleryViewComponent.kt

GalleryViewComponent.html

```
1 @ViewComponent
2 class GalleryViewComponent(
3     private val imageService: ImageService,
4     private val imagePreviewComponent: ImagePreviewComponent
5 ) {
6 }
```



GalleryViewComponent.kt

GalleryViewComponent.html

```
1 @ViewComponent
2 class GalleryViewComponent(
3     private val imageService: ImageService,
4     private val imagePreviewComponent: ImagePreviewComponent
5 ) {
6 }
```



GalleryViewComponent.kt

GalleryViewComponent.html

```
1 @ViewComponent
2 class GalleryViewComponent(
3     private val imageService: ImageService,
4     private val imagePreviewComponent: ImagePreviewComponent
5 ) {
6 }
```



GalleryViewComponent.kt

GalleryViewComponent.html

```
1 @ViewComponent
2 class GalleryViewComponent(
3     private val imageService: ImageService,
4     private val imagePreviewComponent: ImagePreviewComponent
5 ) {
6 }
```



```
1 @Controller
2 class QuestPageController(
3     private val galleryViewComponent: GalleryViewComponent
4 ) {
5
6 }
```



```
1 @Controller
2 class QuestPageController(
3     private val galleryViewComponent: GalleryViewComponent
4 ) {
5
6 }
```



```
1 @Controller
2 class QuestPageController(
3     private val galleryViewComponent: GalleryViewComponent
4 ) {
5
6 }
```

Bildergalerie



Elements Console Sources Network Performance Memory Application > ⚠ 1

Preserve log Disable cache No throttling Invert Hide data URLs All Fetch/XHR JS CSS Img Media Font Doc WS Wasm

Has blocked cookies Blocked Requests 3rd-party requests

Use large request rows Group by frame

Show overview Capture screenshots

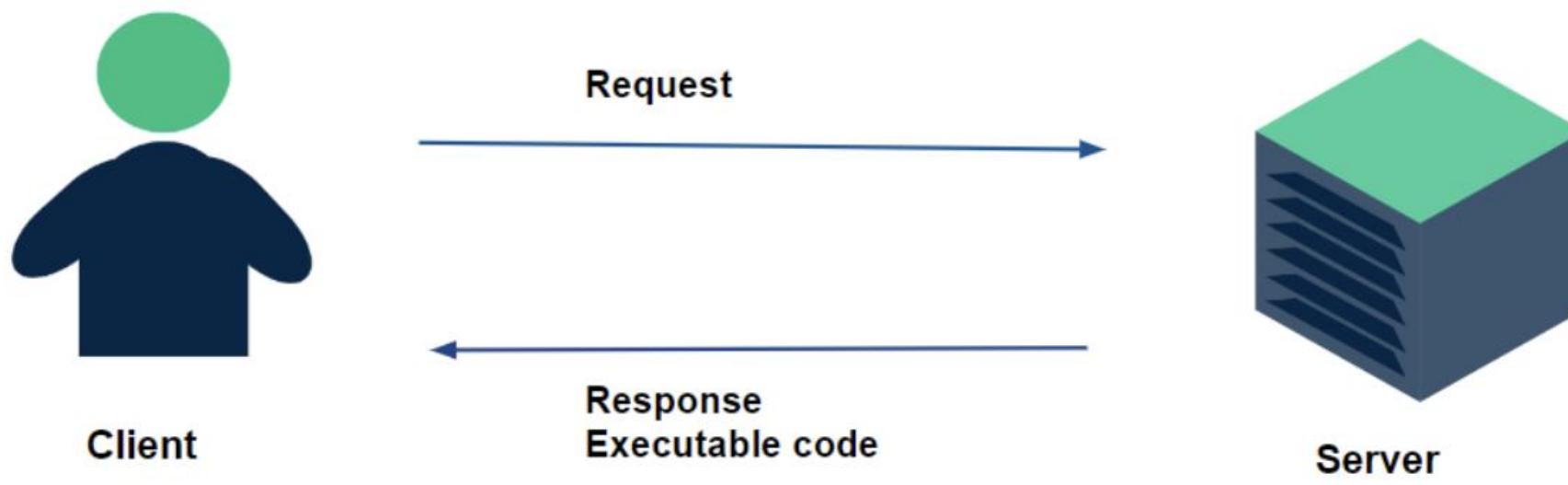
10 ms 20 ms 30 ms 40 ms 50 ms 60 ms 70 ms 80 ms 90 ms

Recording network activity...
Perform a request or hit **Ctrl + R** to record the reload.
[Learn more](#)

Console Issues Network conditions

	Headers	Preview	Response	Initiator	Timing	Cookies
General						
Request URL:						
Request URL:			http://demo.photoquest.local/galerie/refresh-preview/959			
Request Method:			GET			
Status Code:			200			
Remote Address:			127.0.0.1:80			
Referrer Policy:			strict-origin-when-cross-origin			

Name	Header	Preview	Response	Initiator	Timing	Cookies
download.svg						
7228_photo-15297788...						
photoQuestThumbnail...						
957						
x-circle.svg						
loading-spinner.svg						
download.svg						
3653_00100PORTRAIT...						
photoQuestThumbnail...						
959						
x-circle.svg						
loading-spinner.svg						
download.svg						
1388_02016_1201_Hun...						
photoQuestThumbnail...						
971						
x-circle.svg						
loading-spinner.svg						
download.svg						
7162_-SeneddSwansea...						
photoQuestThumbnail...						
42 requests 8.1 MB transfer						
⋮	Console	Issues	Network conditions			





<> ToastViewComponent.html

```
1 <div id="toast-element">
2   <script th:inline="javascript" >
3     </script>
4 </div>
```



<> ToastViewComponent.html }

```
1 <div id="toast-element">
2   <script th:inline="javascript" >
3     </script>
4 </div>
```



<> ToastViewComponent.html }

```
1 <div id="toast-element">
2   <script th:inline="javascript" >
3     </script>
4 </div>
```



<> ToastViewComponent.html }

```
1 <div id="toast-element">
2   <script th:inline="javascript" >
3     </script>
4 </div>
```



<> ToastViewComponent.html }

```
1 <div id="toast-element">
2   <script th:inline="javascript" >
3     </script>
4 </div>
```



Alpine.js



New Report

Alpine Tabs Content

 Dashboard

Tables

Forms

Tabbed Content

 Calendar

AlpineTab1

AlpineTab2

Consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua.



AlpineTabViewComponent.kt

AlpineTabViewComponent.html

```
1 @ViewComponent
2 class AlpineTabViewComponent {
3     fun render(tabs: List<Tab>){
4
5
6         class Tab( val tabHeader: String, val tabContent: String )
7 }
```



AlpineTabViewComponent.kt

AlpineTabViewComponent.html

```
1 @ViewComponent
2 class AlpineTabViewComponent {
3     fun render(tabs: List<Tab>){
4     }
5
6     class Tab( val tabHeader: String, val tabContent: String )
7 }
```



AlpineTabViewComponent.kt

AlpineTabViewComponent.html

```
1 @ViewComponent
2 class AlpineTabViewComponent {
3     fun render(tabs: List<Tab>){
4     }
5
6     class Tab( val tabHeader: String, val tabContent: String )
7 }
```



AlpineTabViewComponent.kt

AlpineTabViewComponent.html

```
1 @ViewComponent
2 class AlpineTabViewComponent {
3     fun render(tabs: List<Tab>){
4     }
5
6     class Tab( val tabHeader: String, val tabContent: String )
7 }
```



AlpineTabViewComponent.kt

AlpineTabViewComponent.html

```
1 @ViewComponent
2 class AlpineTabViewComponent {
3     fun render(tabs: List<Tab>){
4     }
5
6     class Tab( val tabHeader: String, val tabContent: String )
7 }
```



AlpineTabViewComponent.kt

AlpineTabViewComponent.html

```
1 @ViewComponent
2 class AlpineTabViewComponent {
3     fun render(tabs: List<Tab>){
4     }
5
6     class Tab( val tabHeader: String, val tabContent: String )
7 }
```



AlpineTabViewComponent.kt

AlpineTabViewComponent.html

```
1 @ViewComponent
2 class AlpineTabViewComponent {
3     fun render(tabs: List<Tab>){
4     }
5
6     class Tab( val tabHeader: String, val tabContent: String )
7 }
```



AlpineTabViewComponent.kt

AlpineTabViewComponent.html

```
1 @ViewComponent
2 class AlpineTabViewComponent {
3     fun render(tabs: List<Tab>){
4     }
5
6     class Tab( val tabHeader: String, val tabContent: String )
7 }
```



```
<div x-data="{ openTab: 0 }">
  <ul>
    <li x-on:click="openTab = 0">
      <button>AlpineTab1</button>
    </li>
    <li x-on:click="openTab = 1">
      <button>AlpineTab2</button>
    </li>
  </ul>
  <div>
    <div x-show="openTab === 0">
      Lorem ipsum dolor sit amet, consetetur sadipscing
    </div>
    <div x-show="openTab === 1" style="display: none;">
      At vero eos et accusam et justo duo dolores
    </div>
  </div>
</div>
```

A wide-angle photograph of a rural landscape. In the foreground, there are rolling green hills covered with small trees and shrubs. A tall metal telecommunications tower stands prominently on the left side. In the middle ground, there is a large field with a grid pattern, likely a crop like corn. In the background, a range of mountains is visible under a clear blue sky.

aland

Function*

Mustermann

Authority*

Landratsamt Musterstadt



Firstname*

Max



Lastname*

Mustermann

E-Mail Address*

max.mustermann@example.co

Phone Number*

+491234567890

⌚ Address

Street Name*

Musterstraße

Street Number*

1

Unit Number*

12345

Postal Code*

98765

City*

Musterstadt

State*

Musterstaat

Country*

Musterland

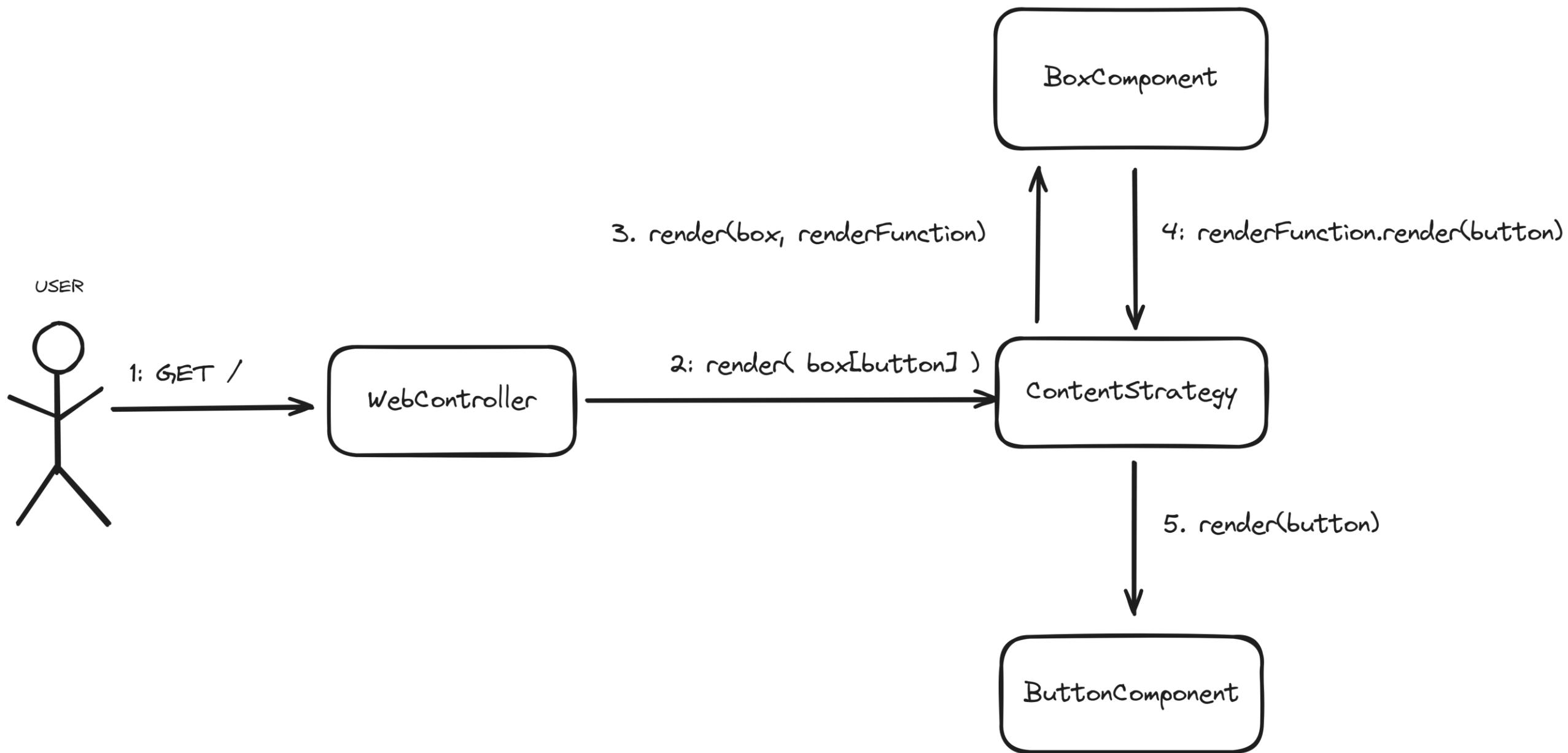
Complete

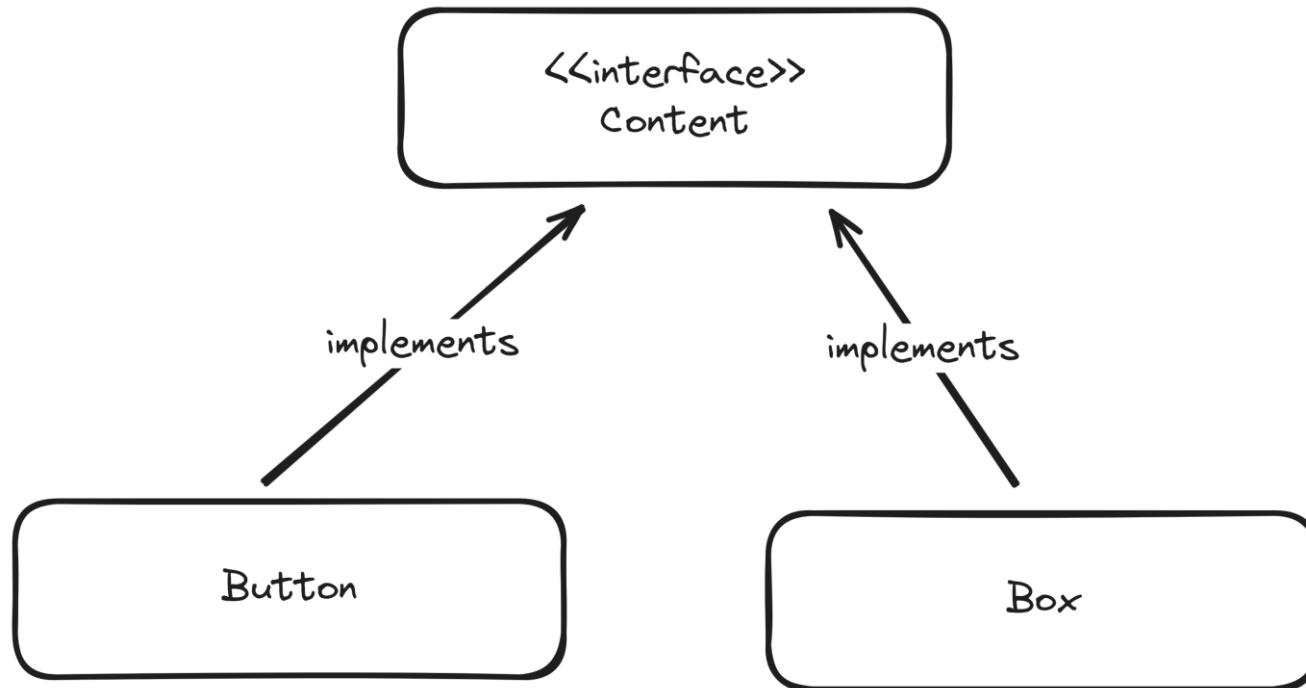


```
@Controller
public class WebController {

    @Autowired
    private ContentStrategy contentStrategy;

    @GetMapping("/")
    ViewContext index(){
        return contentStrategy.render(
            new Box(
                new Button("Hello World")
            )
        );
    }
}
```





```
public record Button(String label) implements Content {  
}
```

<<interface>>
ContentComponent

Boolean canHandle(Content)
ViewContext render(Content,RenderFunction)

implements

implements

ButtonComponent

BoxComponent



```
@ViewComponent
public class ButtonComponent implements ContentComponent {

    @Override
    public Boolean canHandle(Content content) {
        return content instanceof Button;
    }

    @Override
    public ViewContext render(
        Content content,
        RenderFunction renderFunction
    ) {
        return new ButtonContext((Button) content);
    }

    public record ButtonContext(Button button)
        implements ViewContext {}
}
```



```
@param de.tschuehly.svc.ui.field.button.ButtonComponent.ButtonContext buttonContext

<button>
    ${buttonContext.button().label()}
</button>
```



```
@Service
public class ContentStrategy {

    @Autowired
    private final List<ContentComponent> contentComponents;

    public ViewContext render(Content content) {
        ContentComponent contentComponent = contentComponents.stream()
            .filter(it -> it.canHandle(content))
            .findFirst()
            .orElseThrow(() -> new RuntimeException("FormNotImplementedException"));
        return contentComponent.render(content, this::render);
    }
}
```



```
public record Box(  
    List<Content> boxContentList  
) implements Content {  
    public Box(Content... contents){  
        this( Arrays.stream(contents).toList() );  
    }  
}
```



```
@ViewComponent
public class BoxComponent implements ContentComponent {
    @Override
    public Boolean canHandle(Content content) {
        return content instanceof Box;
    }

    @Override
    public ViewContext render(Content content, RenderFunction renderFunction) {
        return new BoxContext((Box) content, renderFunction);
    }
    public record BoxContext(Box content, RenderFunction renderFunction) implements ViewContext {}
}
```

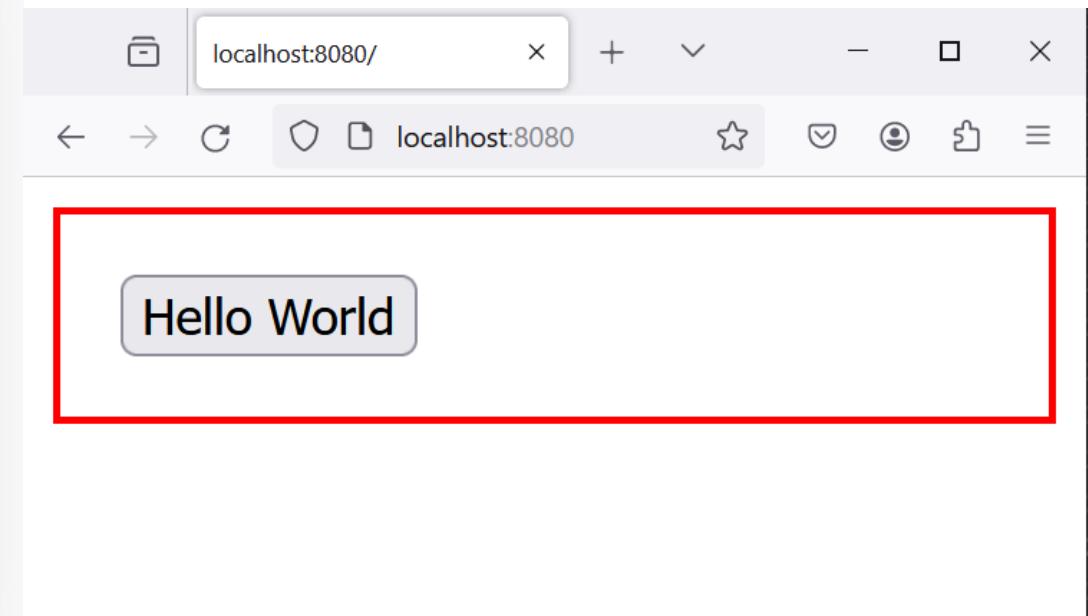


```
@param de.tschuehly.svc.ui.layout.box.BoxComponent.BoxContext boxContext

<div>
    @for(var content: boxContext.content( ).boxContentList( ))
        ${boxContext.renderFunction( ).render(content)}
    @endfor
</div>
```



```
@Controller  
public class WebController {  
  
    @Autowired  
    private ContentStrategy contentStrategy;  
  
    @GetMapping("/")  
    ViewContext index(){  
        return contentStrategy.render(  
            new Box(  
                new Button("Hello World")  
            )  
        );  
    }  
}
```





htmx

high power tools for HTML



spring® ViewComponent



Alpine.js



```
@ViewComponent
class ActionViewComponent {
    var counter = 0
    fun render() = ViewContext(
        "counter" toProperty counter,
    )
    @GetViewAction
    fun countUp(): ViewContext {
        counter += 1
        return render()
    }
}
```



```
@ViewComponent
class ActionViewComponent {
    var counter = 0
    fun render() = ViewContext(
        "counter" toProperty counter,
    )
    @GetViewAction
    fun countUp(): ViewContext {
        counter += 1
        return render()
    }
}
```



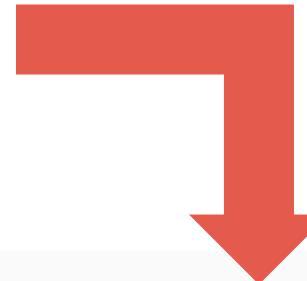
ActionViewComponent.html

```
<div>
    <button view:action="countUp">
        Default ViewAction [GET]
    </button>
    <h3 th:text="${counter}"></h3>
</div>
```



ActionViewComponent.html

```
<div>  
  <button view:action="countUp">  
    Default ViewAction [GET]  
  </button>  
  <h3 th:text="${counter}"></h3>  
</div>
```



```
<div id="actionviewcomponent">  
  <h2>ViewAction Get CountUp</h2>  
  <button hx-get="/actionviewcomponent/countup"  
         hx-target="#actionviewcomponent"  
         hx-swap="outerHTML">  
    Default ViewAction [GET]  
  </button>  
</div>
```



TodoViewComponent.kt

```
1 @ViewComponent
2 public class TodoViewComponent{
3     @Autowired
4     private final ExampleService exampleService;
5 }
```



TodoViewComponent.kt

```
1 @ViewComponent
2 public class TodoViewComponent{
3     @Autowired
4     private final ExampleService exampleService;
5 }
```



TodoViewComponent.html

```
1 <!--/*@thymesVar id="todoViewContext"
2 type="de.tschuehly.example.thymeleafjava.web.action.TodoViewComponent.TodoViewContext"-->
3 <table>
4   <tr>
5     <th>Item</th>
6     <th>Action</th>
7   </tr>
8 </table>
```



TodoViewComponent.html

```
1 <!--/*@thymesVar id="todoViewContext"
2 type="de.tschuehly.example.thymeleafjava.web.action.TodoViewComponent.TodoViewContext"-->
3 <table>
4   <tr>
5     <th>Item</th>
6     <th>Action</th>
7   </tr>
8 </table>
```



TodoViewComponent.kt

```
1 @ViewComponent
2 public class TodoViewComponent{
3     @Autowired
4     private final ExampleService exampleService;
5 }
```



TodoViewComponent.html

```
1 <!--/*@thymesVar id="todoViewContext"
2 type="de.tschuehly.example.thymeleafjava.web.action.TodoViewComponent.TodoViewContext"-->
3 <table>
4   <tr>
5     <th>Item</th>
6     <th>Action</th>
7   </tr>
8 </table>
```



TodoViewComponent.html

```
1 <!--/*@thymesVar id="todoViewContext"
2 type="de.tschuehly.example.thymeleafjava.web.action.TodoViewComponent.TodoViewContext"-->
3 <table>
4   <tr>
5     <th>Item</th>
6     <th>Action</th>
7   </tr>
8 </table>
```

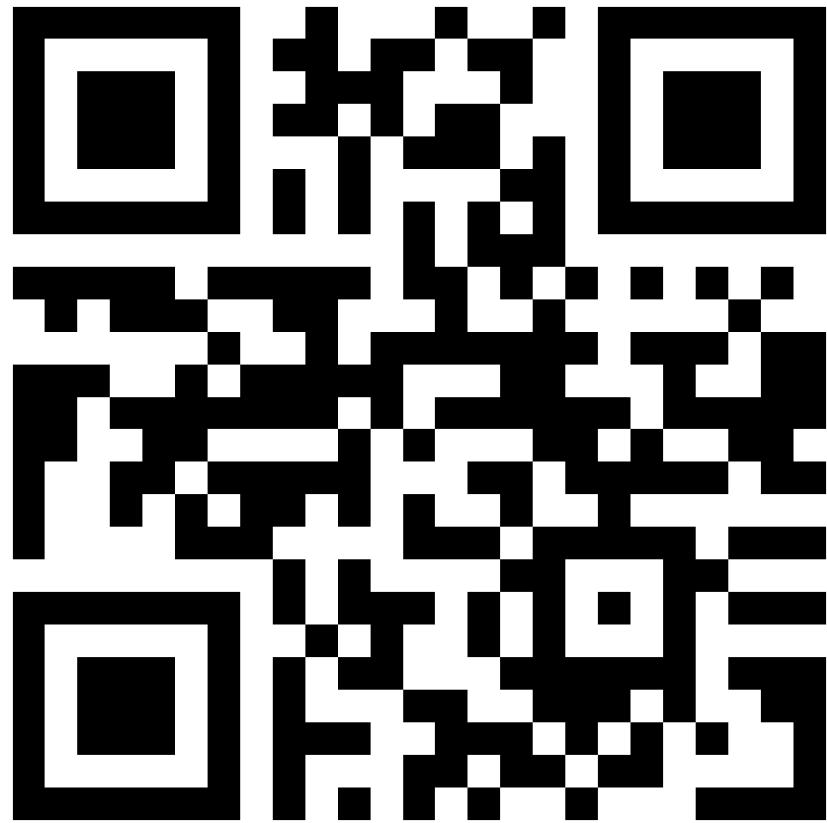


TodoViewComponent.kt

```
1 @ViewComponent
2 public class TodoViewComponent{
3     @Autowired
4     private final ExampleService exampleService;
5 }
```

DEMO

fullstack.tschuehly.de





**I WANT YOU
TO CONTRIBUTE
AND CONNECT**

TSCHUEHLY.DE