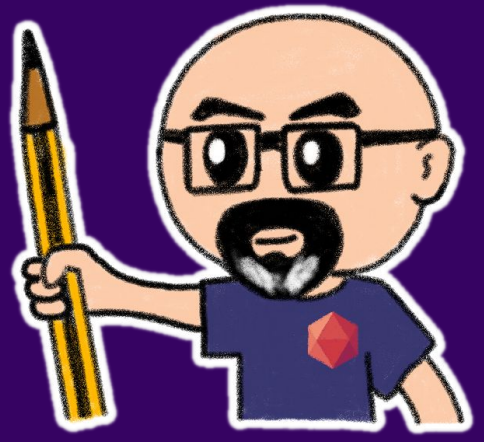
</> htmx 2.0 & Web Components

A Perfect Match for Frontend Development



clever cloud

@LostInBrittany

Dev Quest

NIORT 5 & 6 JUIN

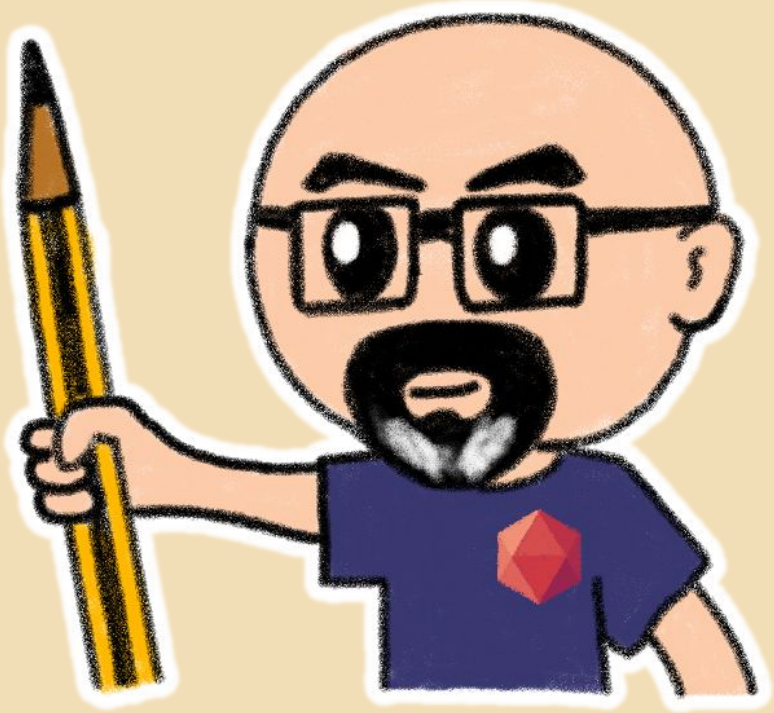
Horacio Gonzalez

@LostInBrittany

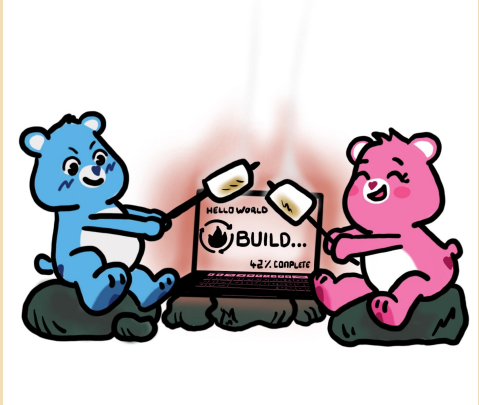
Espagnol Perdu en Bretagne

Head of DevRel

clever cloud

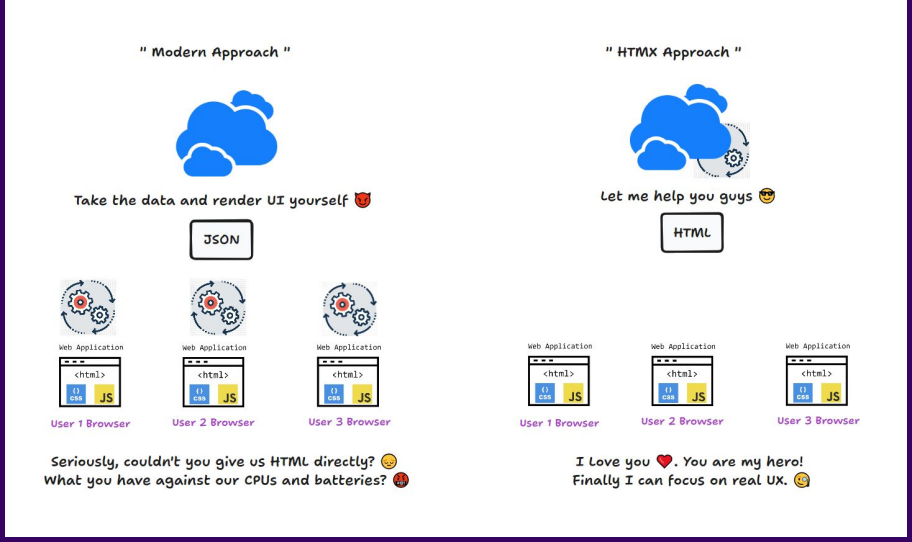


Finist Devs



htmx

Create modern user interfaces with
the simplicity and power of hypertext



Arbitrary Limitations of HTML

- Why can only `<a>` and `<form>` make HTTP(S) requests?
- Why can only click and submit events trigger them?
- Why are only `GET` and `POST` methods available?
- Why do `<a>` and `<form>` force a full page reload?
- Why so many arbitrary constraints in HTML?

Goal: Interactivity in Hypertext

htmx extends HTML capabilities to:

- Perform AJAX requests
- Handle CSS transitions
- Work with WebSockets
- Process server-sent events

All through declarative HTML attributes

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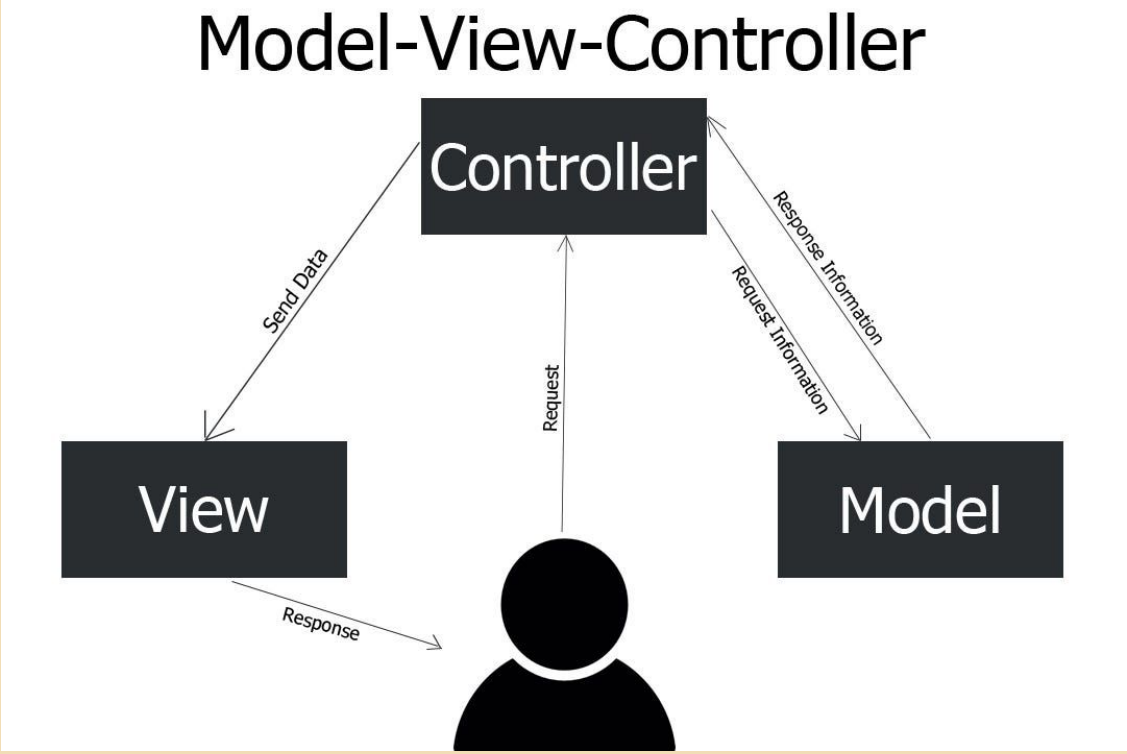
But, what's the point?

It sounds nice and semantic, but what’s the real benefit?

A Quick Look Back

A time when dinosaurs like me coded with Struts

Remember MVC?

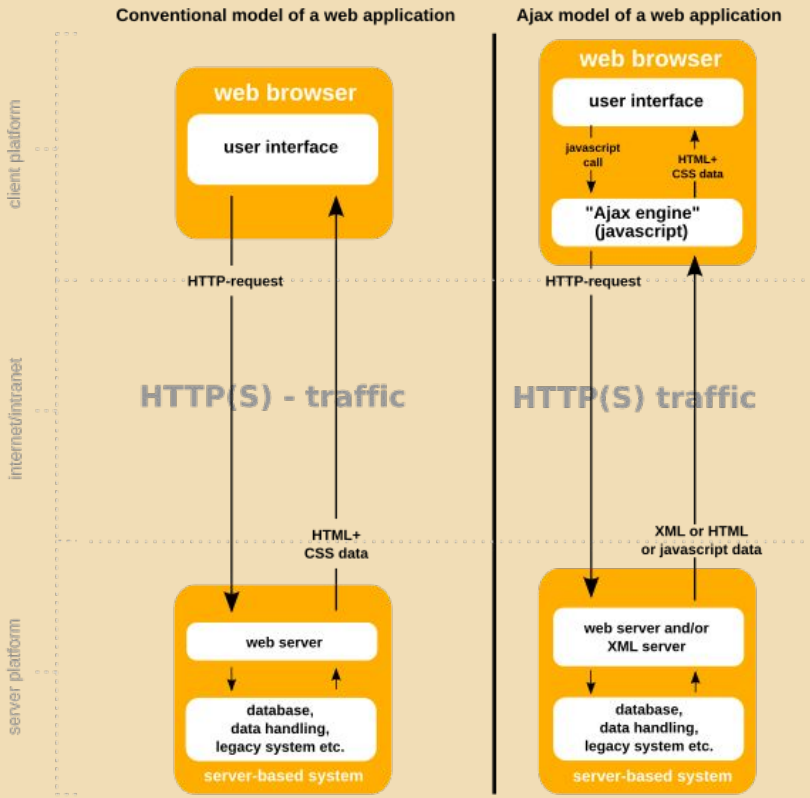


With its page-by-page navigation

The Golden Age of MVC Frameworks

Generating HTML views

2005: The Arrival of AJAX

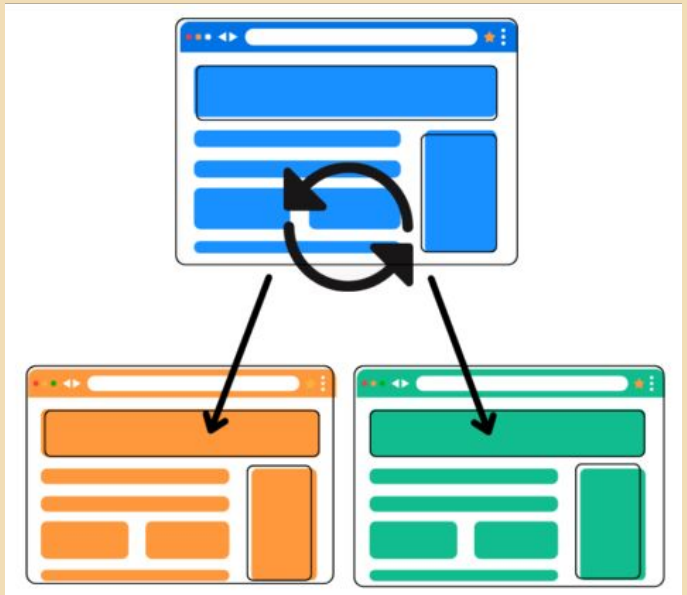


The birth of Web 2.0

Web Pages Become Dynamic Apps

Powered by JavaScript and jQuery

Shift to Single Page Applications (SPA)



MPA

Multi-page app

SPA

Single-page app

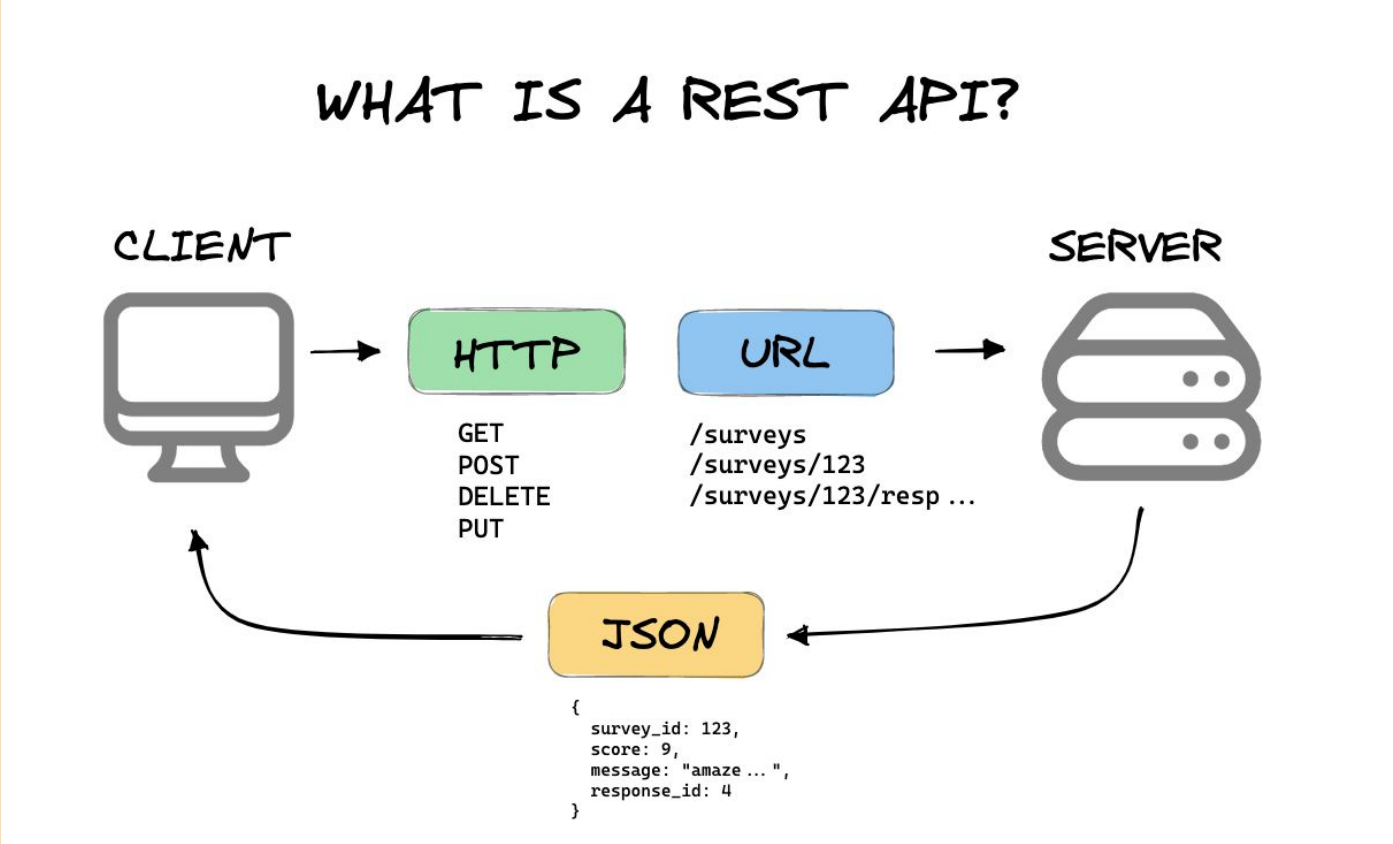
clever cloud

@LostInBrittany

Increasing Complexity

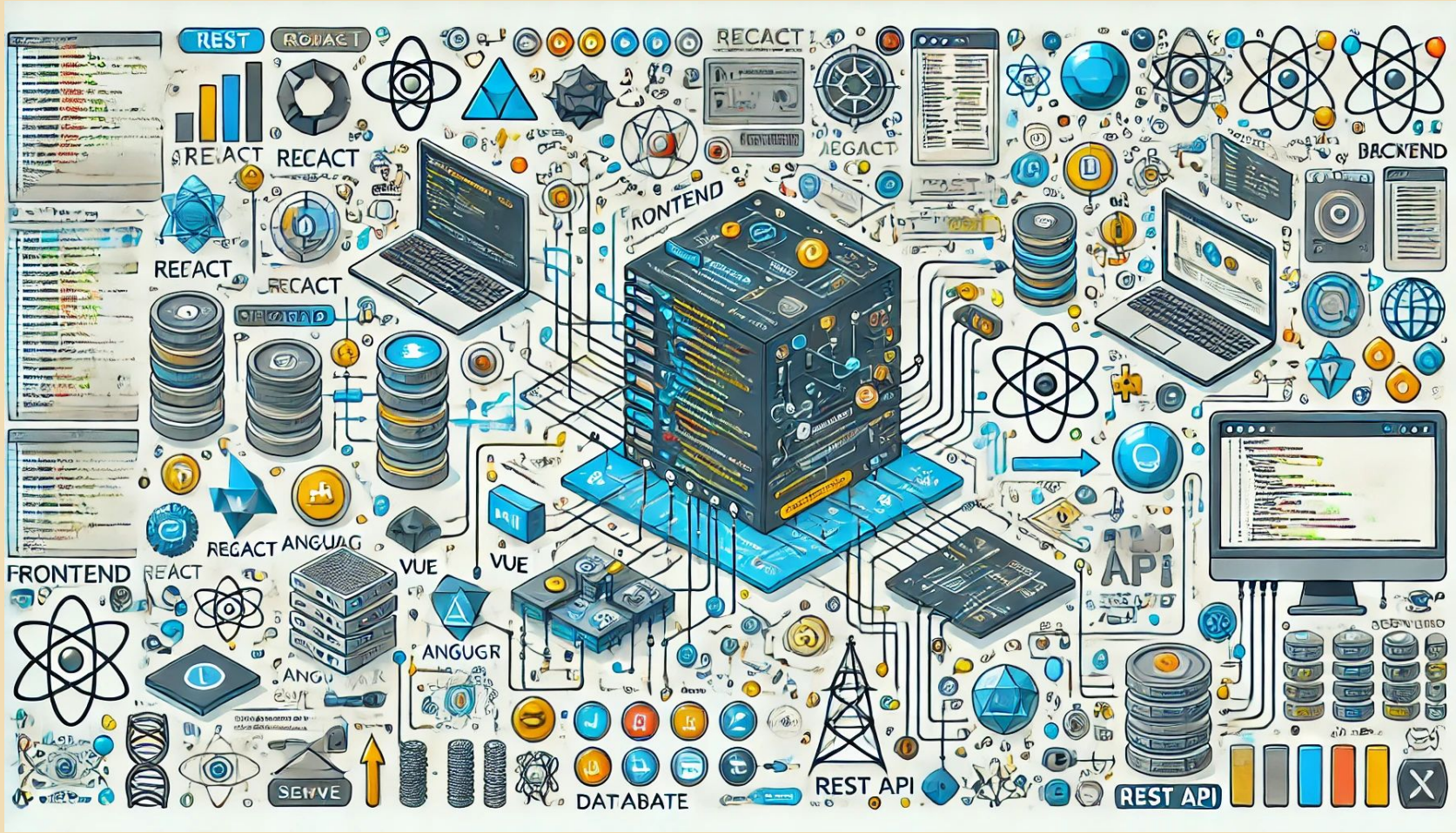
The rise of JavaScript frameworks

Backend Becomes a REST API



Serving JSON

We Gained Functionality



But lost simplicity and semantics

Overkill for Many Applications

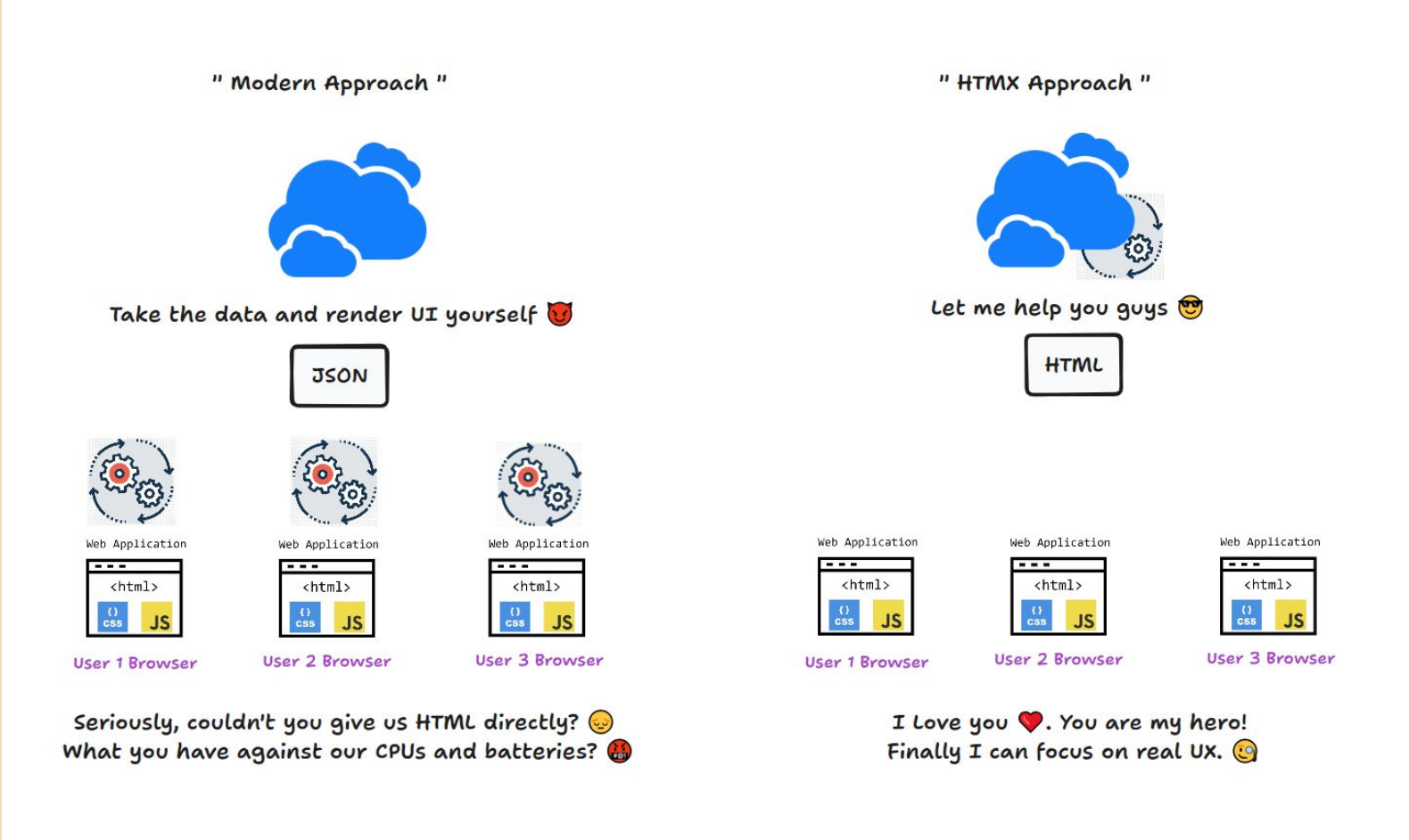
Sometimes we just need a simple web page
with a bit of interactivity

</> htmx Might Be the Right Solution

</> htmx

It's extended HTML

- Simplicity
- Semantics
- Interactivity



Too much theory, show us a demo!

Examples, examples, examples!

example-01.html

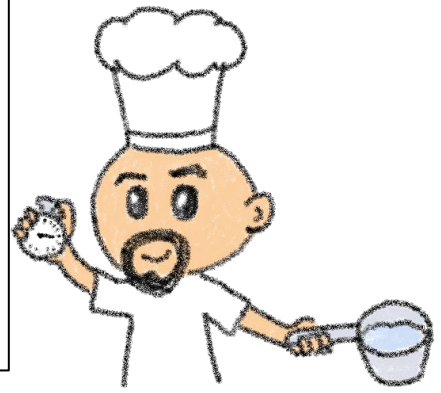
```
<script src="https://unpkg.com/htmx.org@2.0.2"></script>

<!-- have a button that POST on a click via AJAX
    and replace the content of #status div
    with the response -->

<button hx-post="/clicked" hx-target="#status">
   Click Me
</button>

<div id="status">Not yet clicked</div>
```

</> htmx



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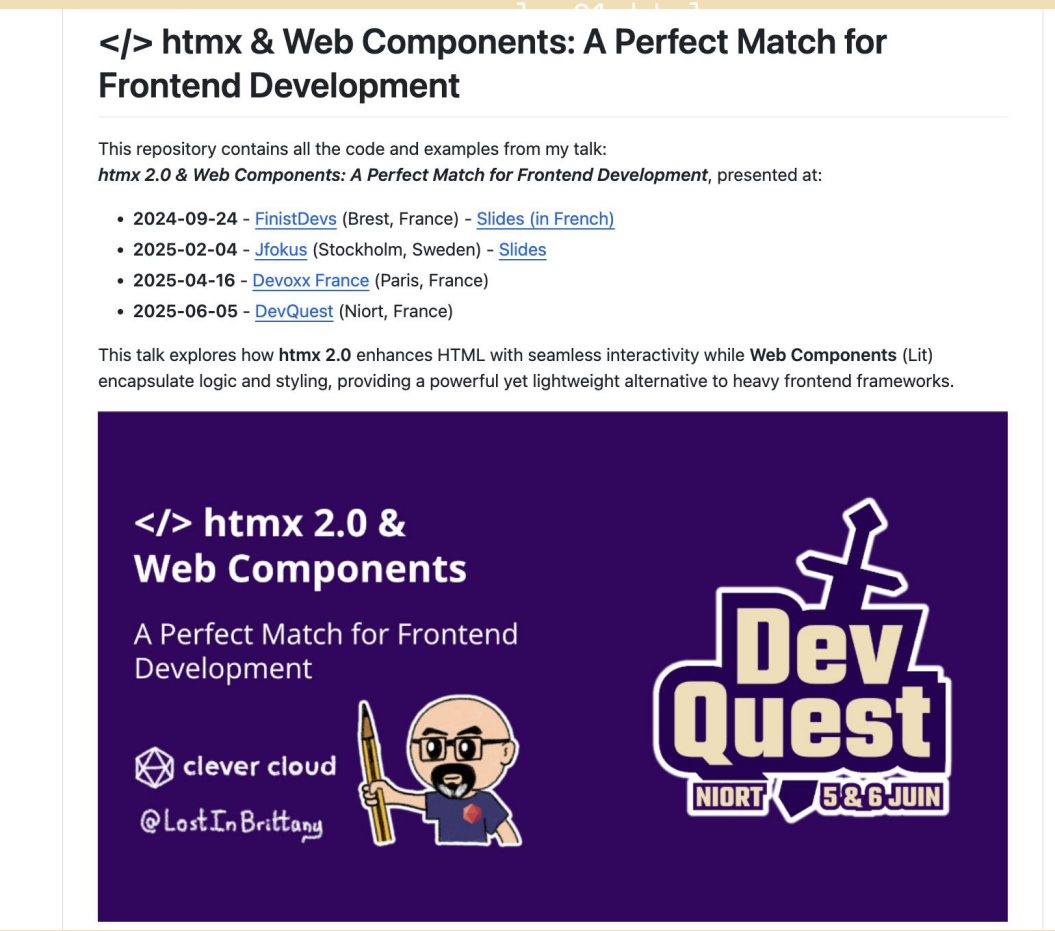

https://github.com/LostInBrittany/introduction-to-htmx-and-lit

Sending POST on a button click

./html-examples/html-example-01.html

```
<script src="https://unpkg.com/htmx.org@2.0.2"></script>

<!-- have a button that POST on a click via AJAX
    and replace the content of #status div
    with the response -->

<button hx-post="/clicked" hx-target="#status">
   Click Me
</button>

<div id="status">Not yet clicked</div>
```

</> htmx

GET, POST, PUT, DELETE...

./html-examples/html-example-02.html

```
<script src="https://unpkg.com/htmx.org@2.0.2"></script>

<div>
 <button hx-get="/test-methods" hx-target="#status">Send GET</button>
 <button hx-post="/test-methods" hx-target="#status">Send POST</button>
 <button hx-put="/test-methods" hx-target="#status">Send PUT</button>
 <button hx-delete="/test-methods" hx-target="#status">Send DELETE</button>
</div>

<div id="status">No request sent</div>
```

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Using response to replace elements

./html-examples/html-example-03.html

```
<script src="https://unpkg.com/htmx.org@2.0.2"></script>

<div id="test-replace">
  <button hx-get="/test-replace/innerHTML">
    If you click, this message will be replaced
  </button>
  <button hx-get="/test-replace/outerHTML" hx-swap="outerHTML">
    If you click, this button will become a div
  </button>
  <button hx-get="/test-replace/delete" hx-swap="delete">
    If you click, this button will disappear when the response is received
  </button>
  <button hx-get="/test-replace/none" hx-swap="none">
    If you click, nothing changes, the response is ignored
  </button>
</div>
```

</> htmx

Choosing when to send requests

./html-examples/html-example-04.html

```
<script src="https://unpkg.com/htmx.org@2.0.2"></script>

<!-- By default, AJAX requests are triggered by the “natural” event of an element: -->
<div id="test-triggers">
  <button hx-get="/trigger/natural" hx-target="#status">
    In a button the natural event is a click
  </button>
  <button hx-trigger="mouseover" hx-get="/trigger/mouseover" hx-target="#status">
    This button triggers on mouseover
  </button>
  <button hx-trigger="mouseenter" hx-get="/trigger/mouseenter" hx-target="#status">
    This button triggers on mouseenter
  </button>
  <button hx-trigger="mouseleave" hx-get="/trigger/mouseleave" hx-target="#status">
    This button triggers on mouseleave
  </button>
</div>

<div id="status">No AJAX request sent yet</div>
```

</> htmx

More triggering options

./html-examples/html-example-05.html

```
<script src="https://unpkg.com/htmx.org@2.0.2"></script>

<!-- By default, AJAX requests are triggered by the “natural” event of an element: -->
<div id="test-triggers">
 <button hx-trigger="every 5s" hx-get="/trigger/5seconds" hx-target="#status">
   Sends request every 5 seconds, no event needed
 </button>
 <button hx-trigger="click[ctrlKey]" hx-get="/trigger/ctrlclick" hx-target="#status">
   Sends request on click while pressing Ctrl
 </button>
 <button hx-trigger="click[ctrlKey] once" hx-get="/trigger/ctrlclickonce" hx-target="#status">
   Sends request on the first click while pressing Ctrl
 </button>
</div>

<div id="status">No AJAX request sent yet</div>
```

</> htmx

A spinner to ease you wait

./html-examples/html-example-06.html

```
<script src="https://unpkg.com/htmx.org@2.0.2"></script>

<!-- By default, AJAX requests are triggered by the “natural” event of an element: -->
<div id="test-triggers">
 <button hx-trigger="every 5s" hx-get="/trigger/5seconds" hx-target="#status">
   Sends request every 5 seconds, no event needed
 </button>
 <button hx-trigger="click[ctrlKey]" hx-get="/trigger/ctrlclick" hx-target="#status">
   Sends request on click while pressing Ctrl
 </button>
 <button hx-trigger="click[ctrlKey] once" hx-get="/trigger/ctrlclickonce" hx-target="#status">
   Sends request on the first click while pressing Ctrl
 </button>
</div>

<div id="status">No AJAX request sent yet</div>
```

</> htmx

Des extensions presque à l'infini

</> htmx

extensions

This site is a searchable collection of extensions for htmx 2.0. They are not guaranteed to work with the htmx 1.x codebase.

Core extensions are actively maintained by the htmx team.

Community extensions are contributed by the community or rarely touched by the htmx team (although they still work!)

▶ **Contributing**

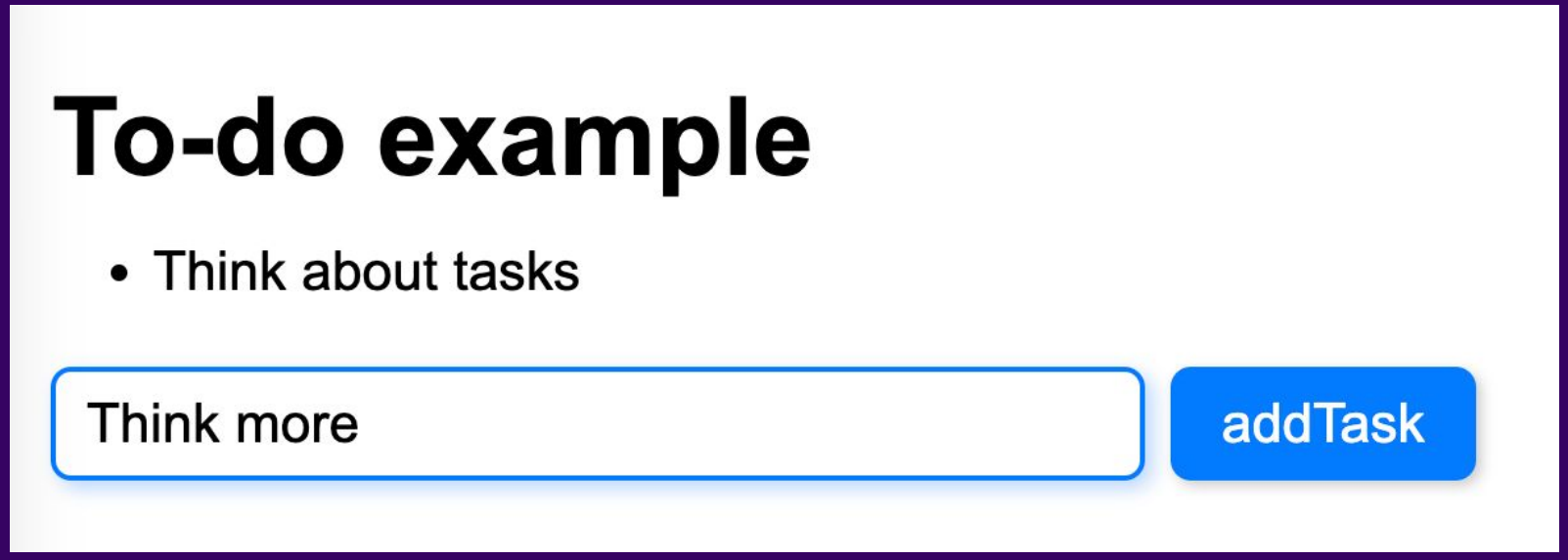
Core

search core extensions

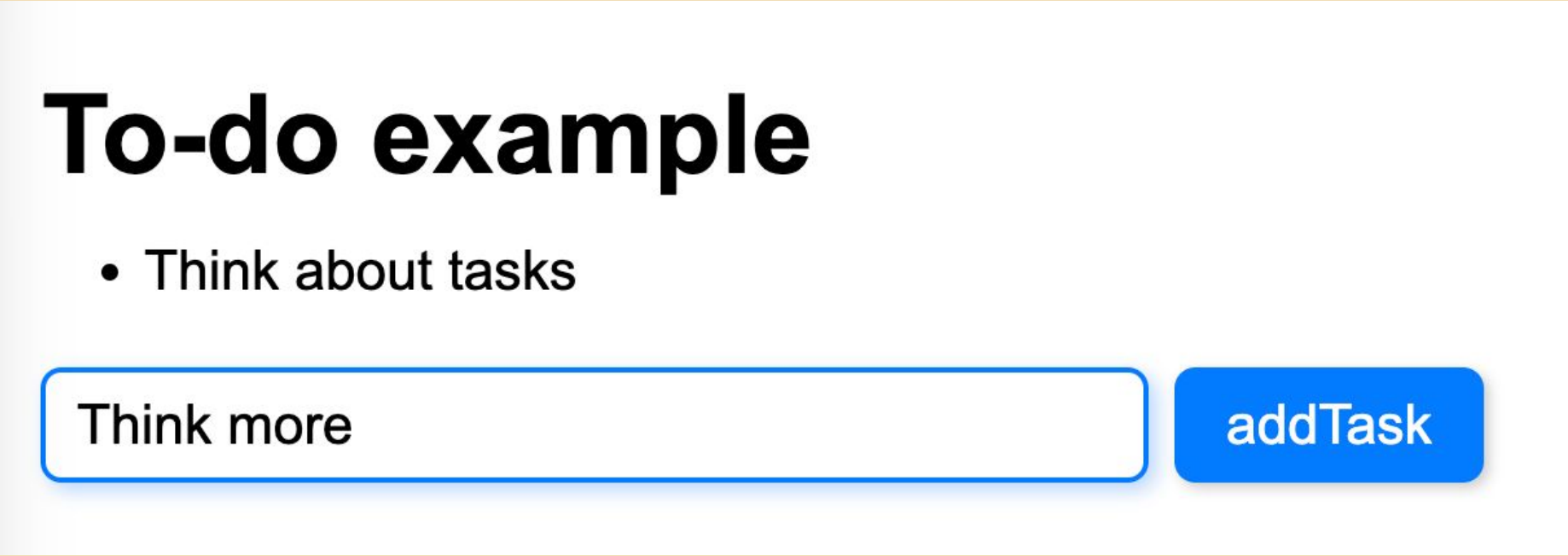
Name	Description
sse	Provides support for Server Sent Events directly from HTML.

Time for More Code!

Let's see a complete example

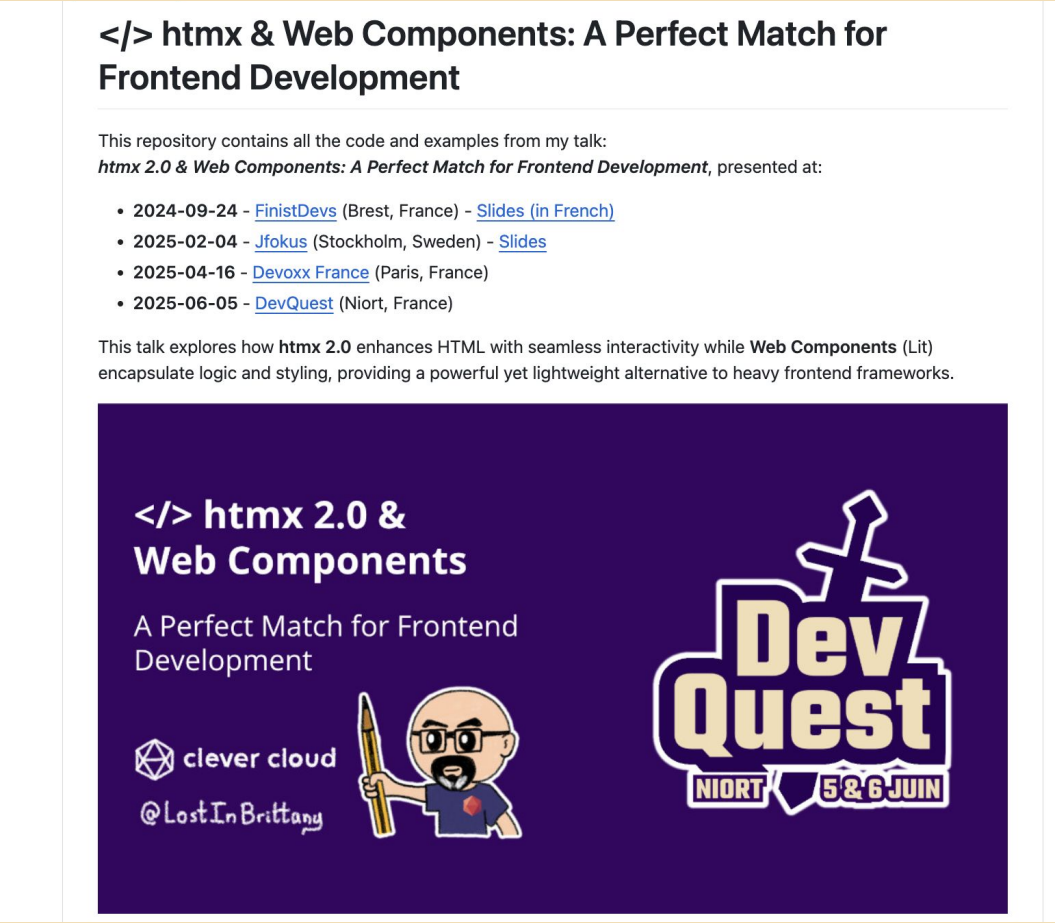


Let's do a to-do list



From `Hello World` to a `To-do List`

Too much theory, show us a demo!



</> htmx & Web Components: A Perfect Match for Frontend Development

This repository contains all the code and examples from my talk:
htmx 2.0 & Web Components: A Perfect Match for Frontend Development, presented at:

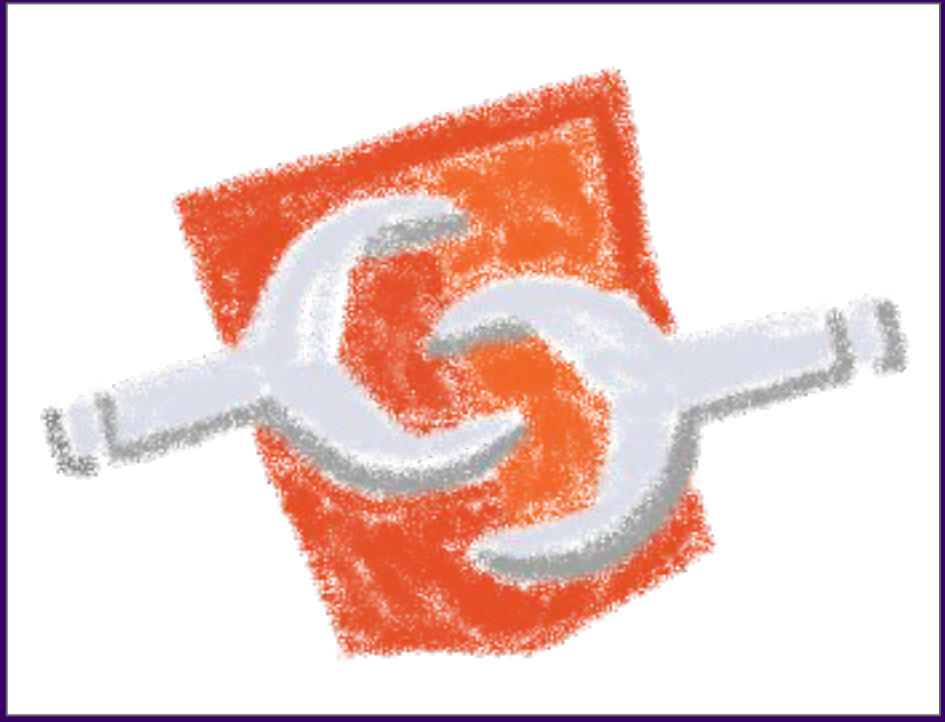
- **2024-09-24** - FinistDevs (Brest, France) - Slides (in French)
- **2025-02-04** - Jfokus (Stockholm, Sweden) - Slides
- **2025-04-16** - Devoxx France (Paris, France)
- **2025-06-05** - DevQuest (Niort, France)

This talk explores how **htmx 2.0** enhances HTML with seamless interactivity while **Web Components** (Lit) encapsulate logic and styling, providing a powerful yet lightweight alternative to heavy frontend frameworks.

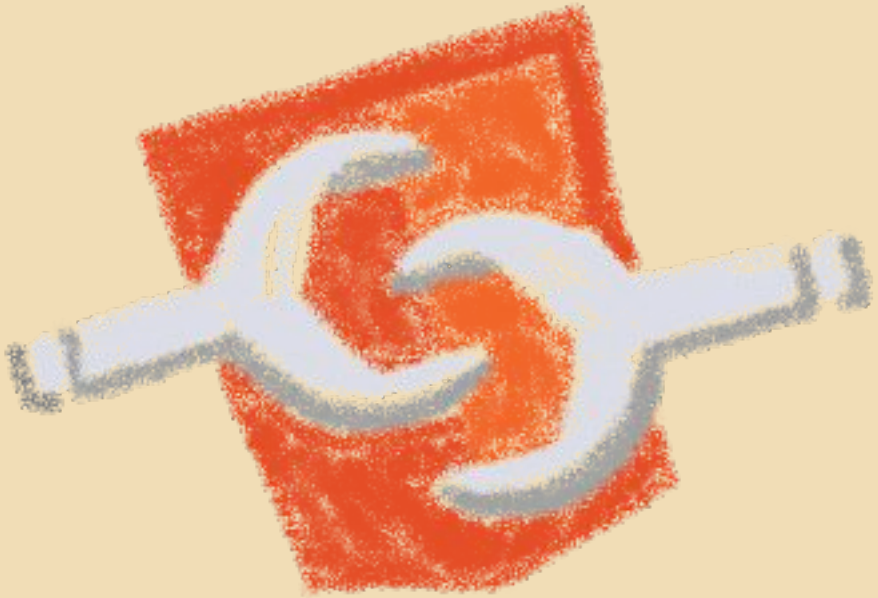
https://github.com/LostInBrittany/introduction-to-htmx-and-lit

What the heck are web component?

The 3 minutes context

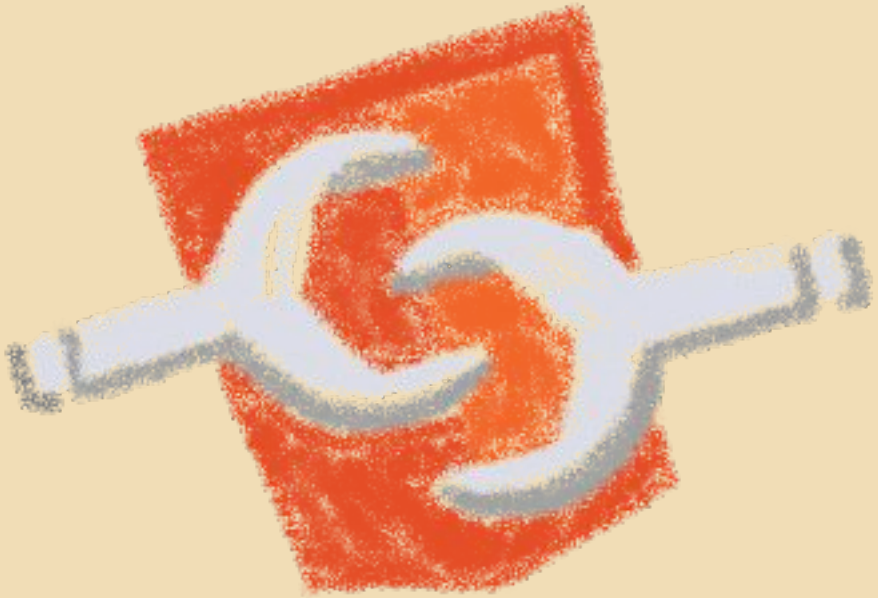


Web Components



Web standard W3C

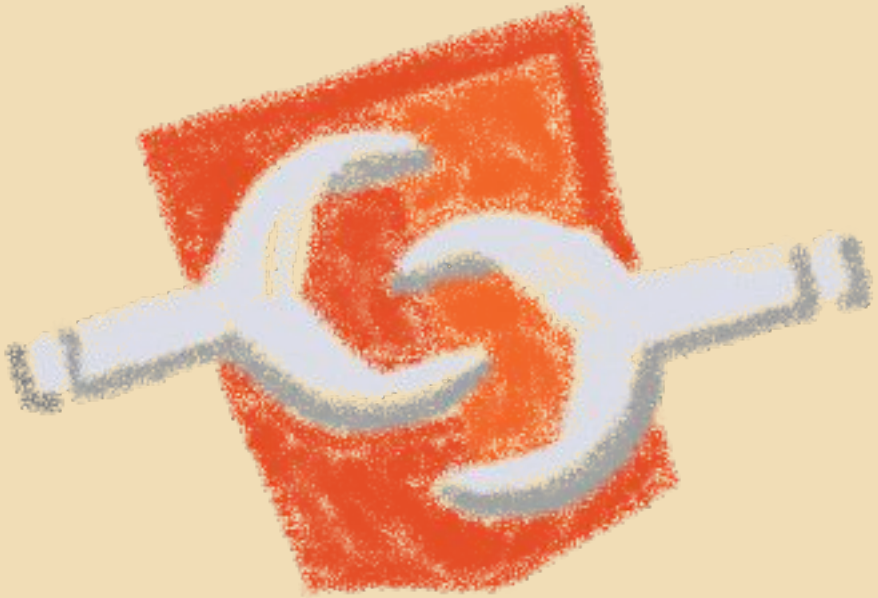
Web Components



Available in all modern browsers:

Firefox, Safari, Chrome

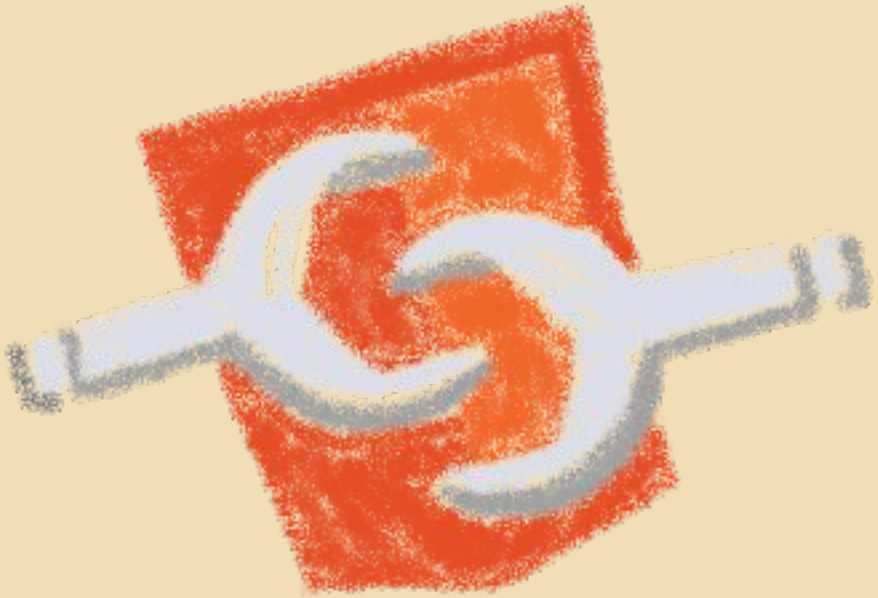
Web Components



Create your own HTML tags

Encapsulating look and behavior

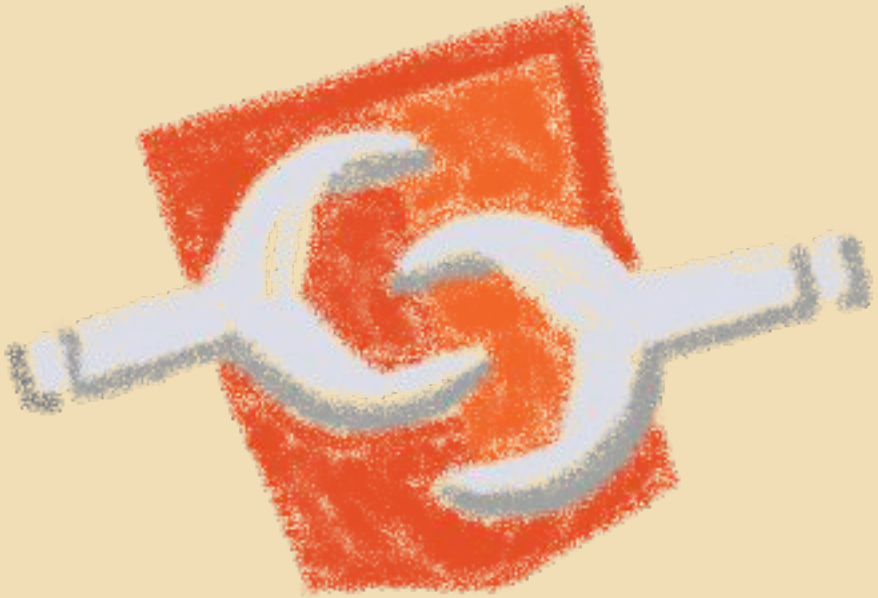
Web Components



Fully interoperable

With other web components, with any framework

Web Components



CUSTOM ELEMENTS

SHADOW DOM

TEMPLATES

Custom Element

</> To define your own HTML tag

```
<body>
  ...
  <script>
    window.customElements.define('my-element',
      class extends HTMLElement {...});
  </script>
  <my-element></my-element>
</body>
```

Shadow DOM

To encapsulate subtree and style in an element


```
<button>Hello, world!</button>
<script>
var host = document.querySelector('button');
const shadowRoot = host.attachShadow({mode:'open'});
shadowRoot.textContent = 'こんにちは、影の世界!';
</script>
```

Template

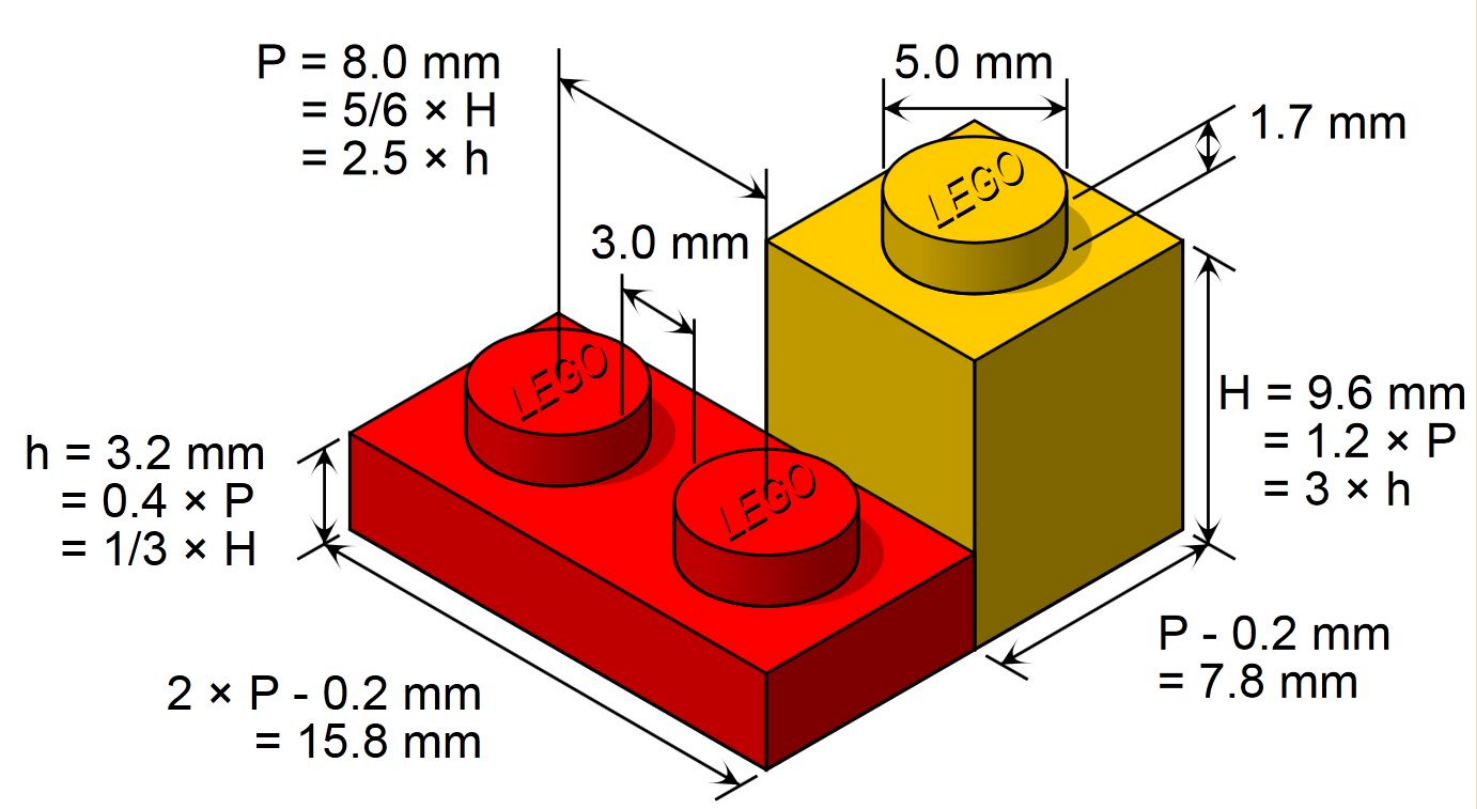
To have clonable document template

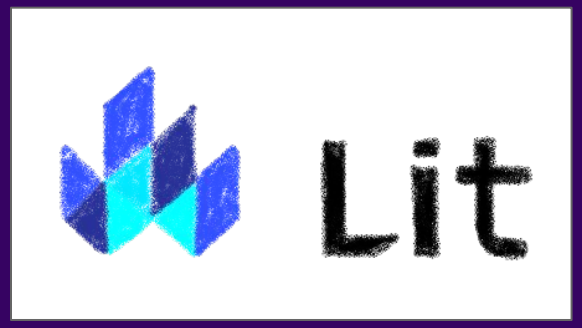
```
<template id="mytemplate">
  <img src="" alt="great image">
  <div class="comment"></div>
</template>

var t = document.querySelector('#mytemplate');
// Populate the src at runtime.
t.content.querySelector('img').src = 'logo.png';
var clone = document.importNode(t.content, true);
document.body.appendChild(clone);
```

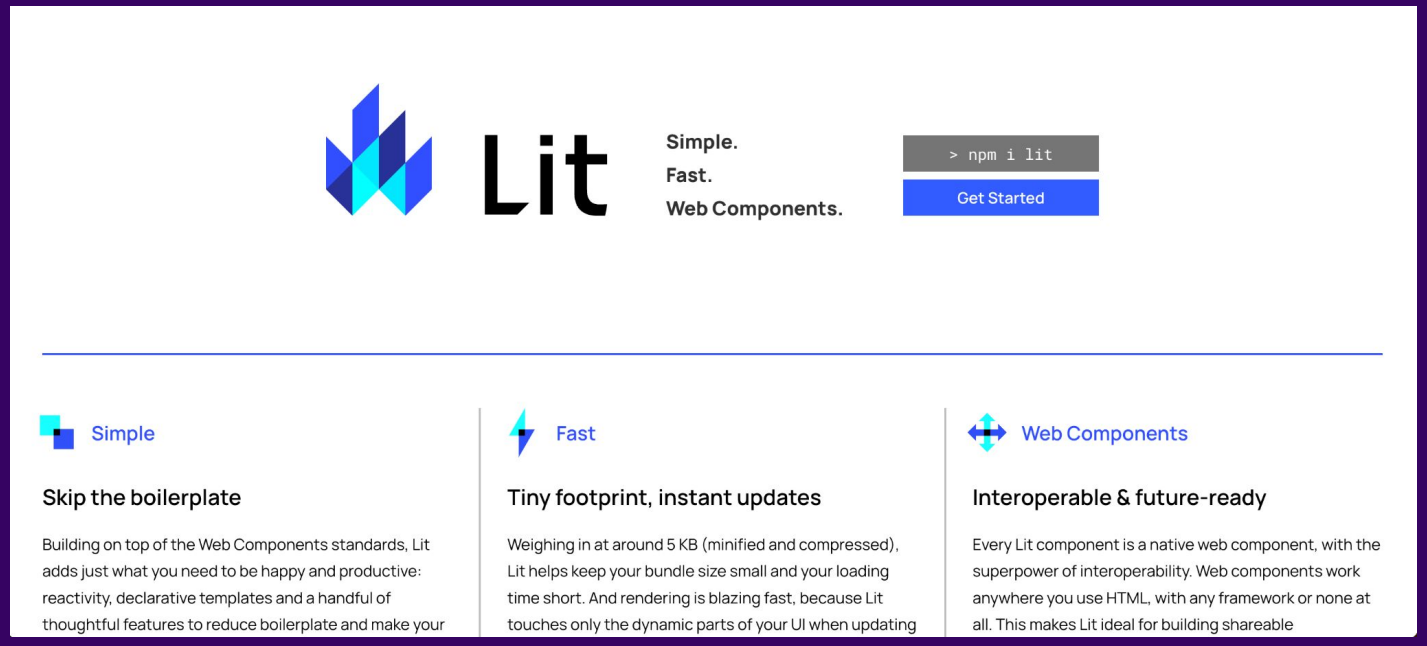
But in fact, it's just an element...

- Attributes
- Properties
- Methods
- Events

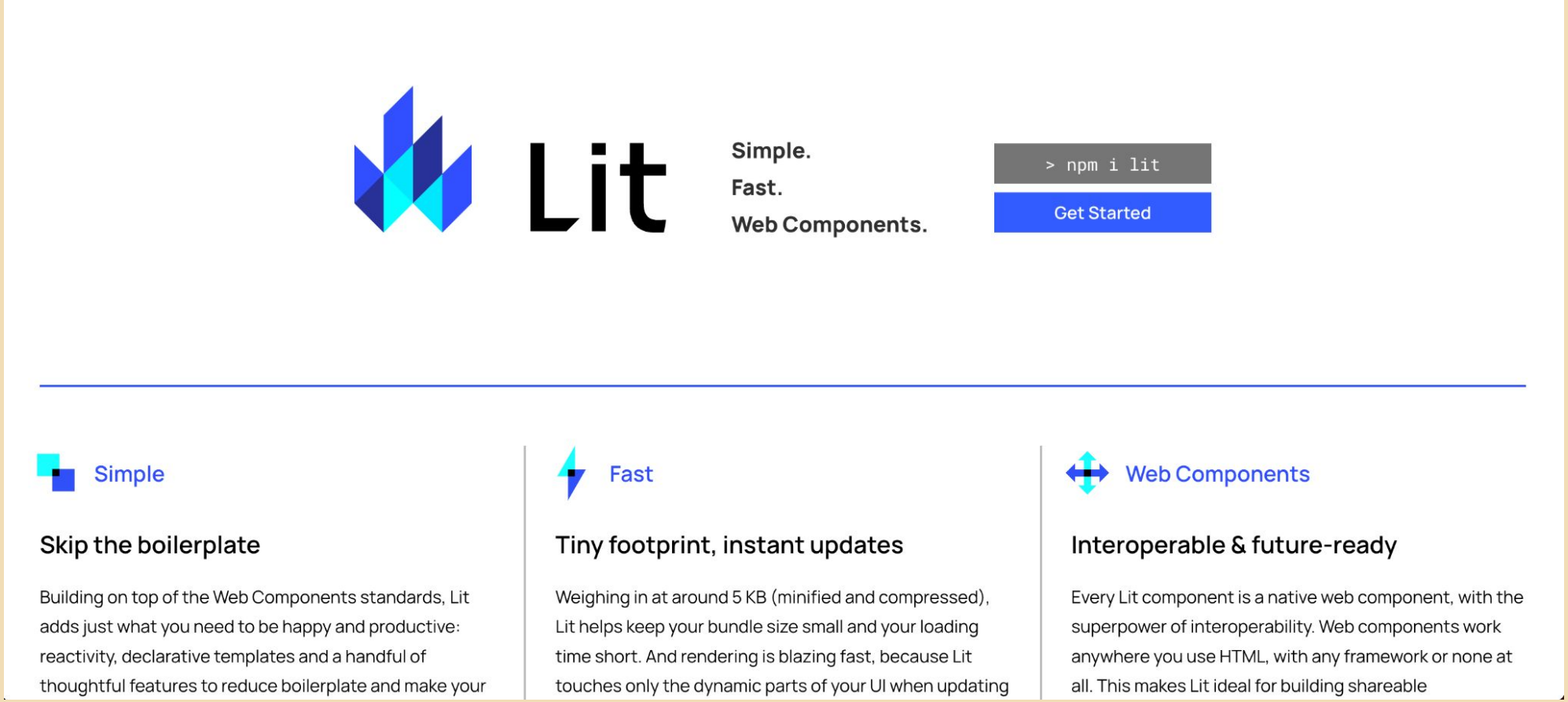




Simple. Fast. Web Components



Modern lightweight web components



For the new web paradigm

LitElement

```
import { LitElement, html } from 'lit-element';

// Create your custom component
class CustomGreeting extends LitElement {
 // Declare properties
 static get properties() {
   return {
     name: { type: String }
   };
 }
 // Initialize properties
 constructor() {
   super();
   this.name = 'World';
 }
 // Define a template
 render() {
   return html`<p>Hello, ${this.name}!</p>`;
 }
}
// Register the element with the browser
customElements.define('custom-greeting', CustomGreeting);
```

Lightweight web-components using lit-html

Based on lit-html

lit / packages / lit-html / README.md

abdonrd Unify the npm badges (#3680) ✕ d85f082 · 5 months ago History

Preview Code Blame 58 lines (36 loc) · 2.7 KB Raw

lit-html 2.0

Efficient, Expressive, Extensible HTML templates in JavaScript

Tests passing | npm v2.7.5 | discord join chat | mentioned in awesome

lit-html is the template system that powers the Lit library for building fast web components. When using `lit-html` to develop web components, most users should import lit-html via the `lit` package rather than installing and importing from `lit-html` directly.

About this release

This is a stable release of `lit-html` 2.0 (part of the Lit 2.0 release). If upgrading from previous versions of `lit-html`, please note the minor breaking changes from lit-html 1.0 in the Upgrade Guide.

An efficient, expressive, extensible HTML templating library for JavaScript

Do you know tagged templates?

```
function uppercaseExpression(strings, ...expressionValues) {
  var finalString = ''
  for ( let i = 0; i < strings.length; i++ ) {
    if (i > 0) {
      finalString += expressionValues[i - 1].toUpperCase()
    }
    finalString += strings[i]
  }
  return finalString
}
const expressions = [ 'Sophia Antipolis', 'RivieraDev', 'Thank you'];
console.log(uppercase`Je suis à ${expression[0]} pour ${expression[1]. $expression[2]!`
```

Little known functionality of template literals

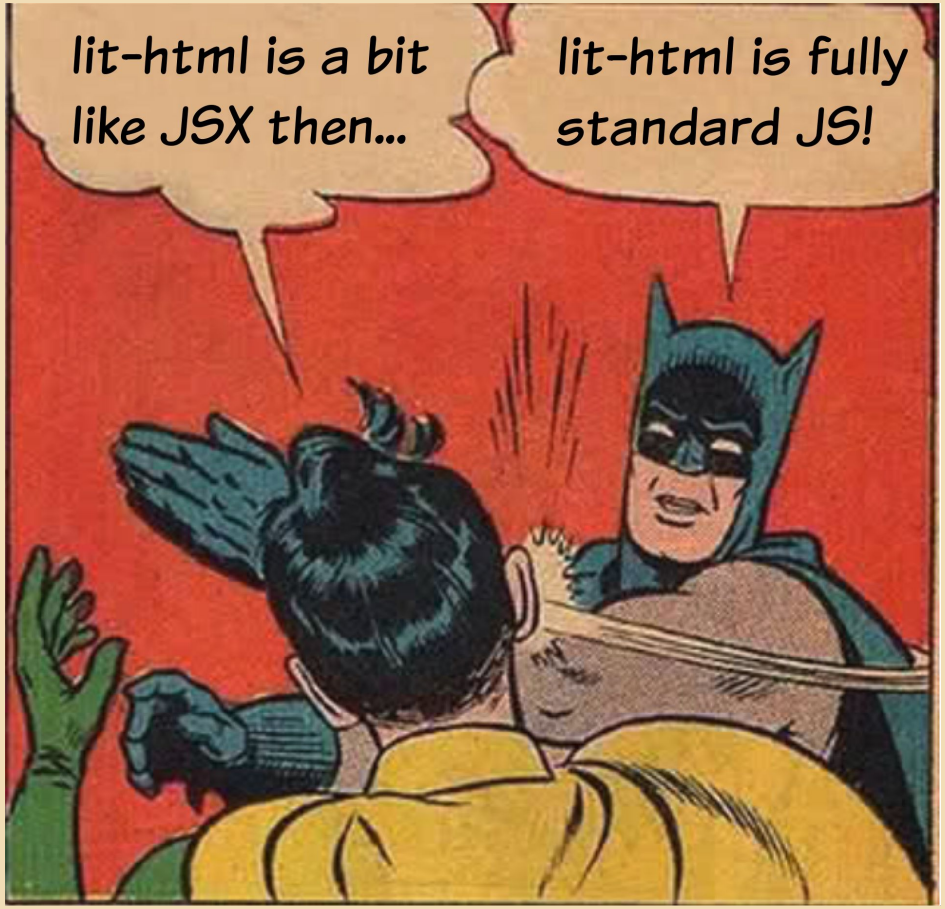
lit-html Templates

```
let myTemplate = (data) => html`
  <h1>${data.title}</h1>
  <p>${data.body}</p>
`;
```

Lazily rendered

Generates a TemplateResult

It's a bit like JSX, isn't it?



The good sides of JSX... but in the standard!

Too much theory, show us a demo!

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https://github.com/LostInBrittany/introduction-to-htmx-and-lit

Custom Greeting example

```
import { LitElement, html } from 'lit-element';

// Create your custom component
class CustomGreeting extends LitElement {
 // Declare properties
 static get properties() {
   return {
     name: { type: String }
   };
 }
 // Initialize properties
 constructor() {
   super();
   this.name = 'World';
 }
 // Define a template
 render() {
   return html`<p>Hello, ${this.name}!</p>`;
 }
}
// Register the element with the browser
customElements.define('custom-greeting', CustomGreeting);
```

Lightweight web-components using lit-html

My Lit Counter example

Let's do an interactive counter

Lit & </> htmx

Love at first <tag>

htmx for structure, Lit to encapsulate logic

To htmx, Lit elements are just regular tags

Too much theory, show us a demo!

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https://github.com/LostInBrittany/introduction-to-htmx-and-lit

That's all, folks!

Thank you all!

Please leave your feedback!