A world outside Polymer

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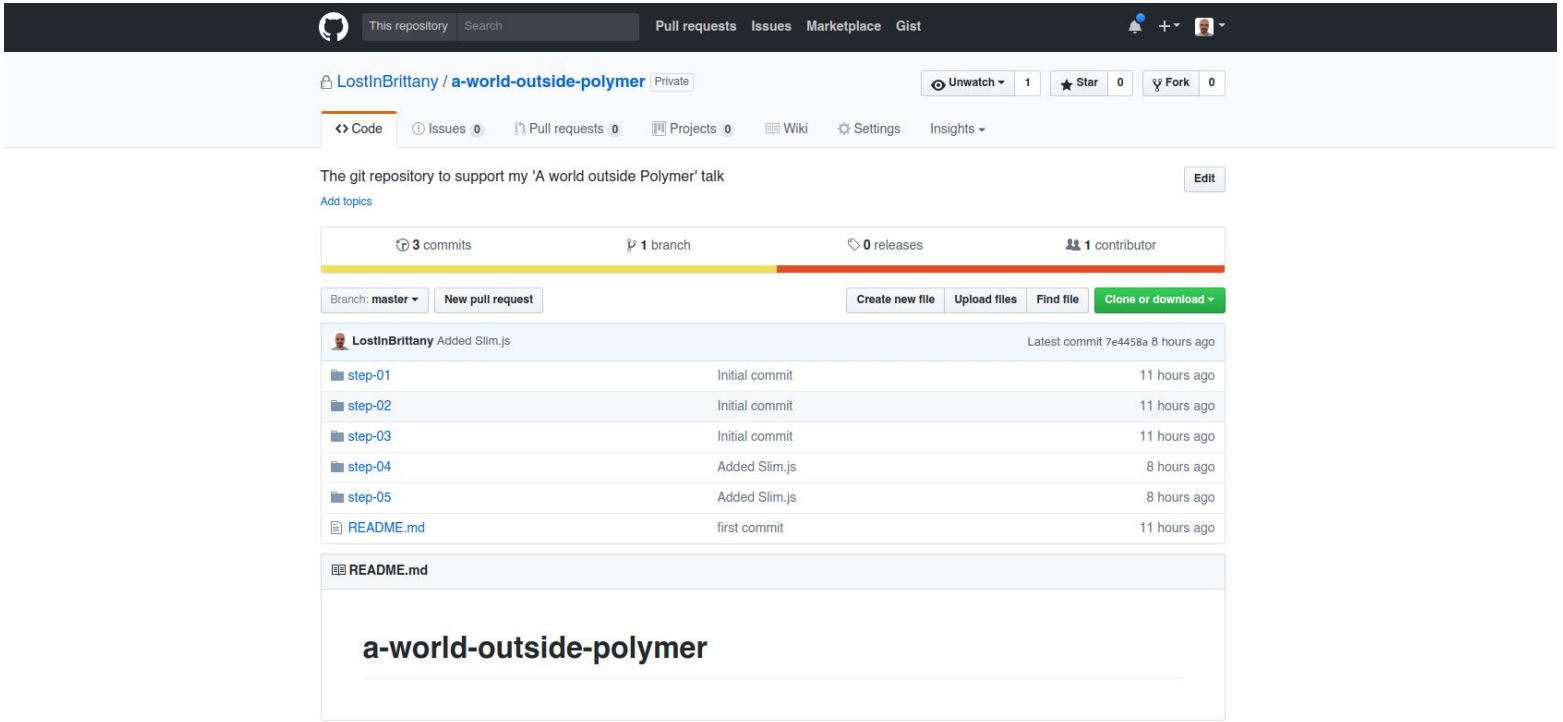
Cityzen Data

http://cityzendata.com

WARP 10

Google Developers Experts 2015 Web Technologies GDE

We want the code!



https://github.com/LostInBrittany/a-world-outside-polymer

Web Components

A very basic web component


```
class MyElement extends HTMLElement {

 // This gets called when the HTML parser sees your tag
 constructor() {
   super(); // always call super() first in the ctor.
   this.msg = 'Hello, FinistJUG!';
 }

 // Called when your element is inserted in the DOM or
 // immediately after the constructor if it's already in the DOM
 connectedCallback() {
   this.innerHTML = `<p>${this.msg}</p>`;
 }

}

customElements.define('my-element', MyElement);
```

Custom Elements:

- Let you define your own HTML tag with bundled JS behavior
- Trigger lifecycle callbacks
- Automatically “upgrade” your tag when inserted in the document

Custom Elements don’t:

- Scope CSS styles
  - Shadow DOM
- Scope JavaScript
  - ES2015
- “Reproject” children into <slot> elements
  - Shadow DOM

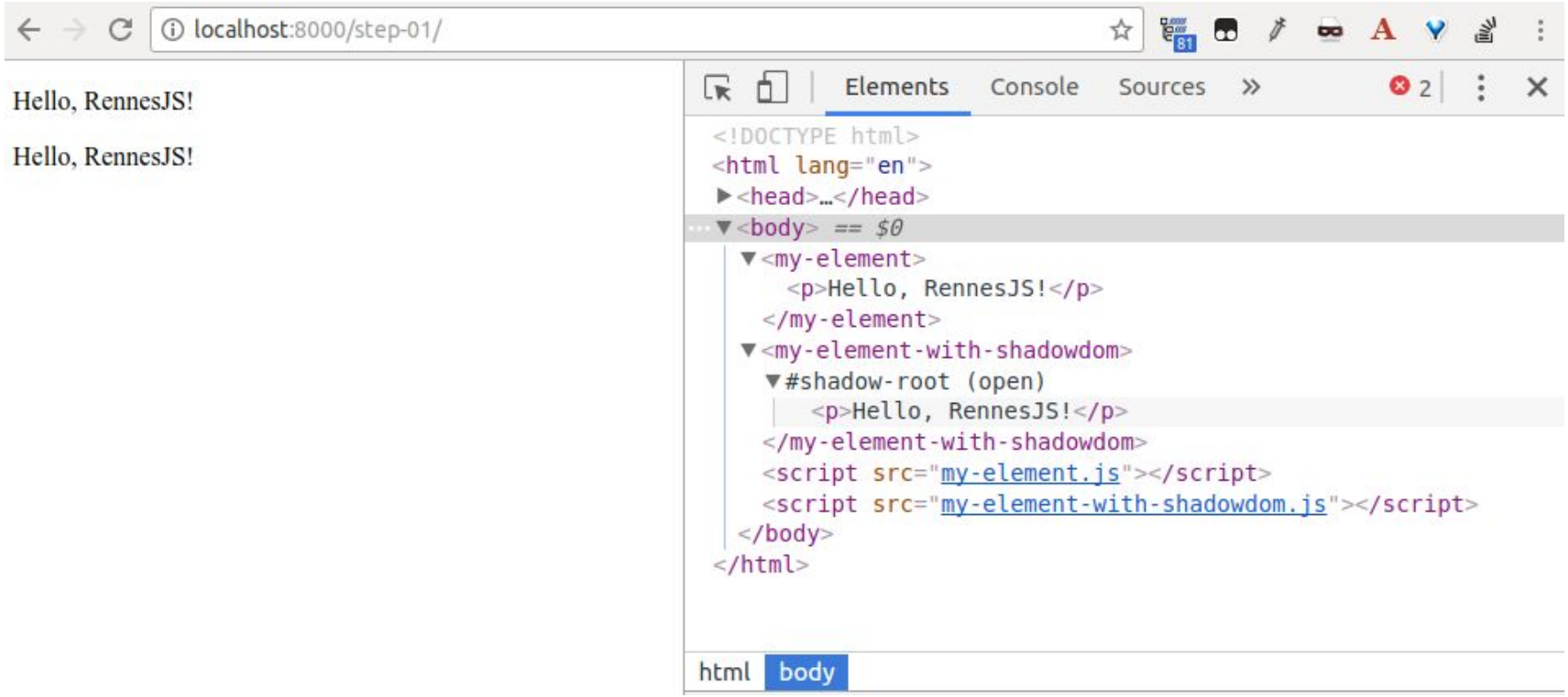
Adding ShadowDOM

```
class MyElementWithShadowDom extends HTMLElement {

 // This gets called when the HTML parser sees your tag
 constructor() {
   super(); // always call super() first in the ctor.
   this.msg = 'Hello, FinistJUG!';
   this.attachShadow({ mode: 'open' });
 }
 // Called when your element is inserted in the DOM or
 // immediately after the constructor if it's already in the DOM
 connectedCallback() {
   this.shadowRoot.innerHTML = `<p>${this.msg}</p>`;
 }
}

customElements.define('my-element-with-shadowdom', MyElementWithShadowDom);
```

Adding ShadowDOM



Lifecycle callbacks

```
class MyElementLifecycle extends HTMLElement {
 constructor() {
   // Called when an instance of the element is created or upgraded
   super(); // always call super() first in the ctor.
 }
 // Tells the element which attributes to observer for changes
 // This is a feature added by Custom Elements
 static get observedAttributes() {
   return [];
 }
 connectedCallback() {
   // Called every time the element is inserted into the DOM
 }
 disconnectedCallback() {
   // Called every time the element is removed from the DOM.
 }
 attributeChangedCallback(attrName, oldVal, newVal) {
   // Called when an attribute was added, removed, or updated
 }
 adoptedCallback() {
   // Called if the element has been moved into a new document
 }
}
```

my-counter custom element

```
class MyCounter extends HTMLElement {

 constructor() {
   super();
   this._counter = 0;
   this.attachShadow({ mode: 'open' });
 }

 connectedCallback() { this.render() }
  static get observedAttributes() { return [ 'counter' ] }

 attributeChangedCallback(attr, oldVal, newVal) {
   if (oldVal !== newVal) {
     this[attr] = newVal;
   }
 }
```

my-counter custom element

```
get counter() {
  return this._counter;
}

set counter(value) {
  if (value != this._counter) {
    this._counter = Number.parseInt(value);
    this.setAttribute('counter', value);
    this.display();
  }
}

increment() {
  this.counter = this.counter + 1;
}
```

my-counter custom element

```
render() {
  let button = document.createElement('button');
  button.innerHTML = '+';
  button.addEventListener('click', this.increment.bind(this));
  this.shadowRoot.appendChild(button);

  this.output = document.createElement('span');
  this.shadowRoot.appendChild(this.output);

  this.style.display = 'block';
  this.style.fontSize = '5rem';
  button.style.fontSize = '5rem';
  button.style.borderRadius = '1rem';
  button.style.padding = '0.5rem 2rem';
  this.output.style.marginLeft = '2rem';
}

display() {
  this.output.innerHTML = `${this.counter}`;
}
```

`my-counter` custom element

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Polymer

Adding syntactic sugar to the standard

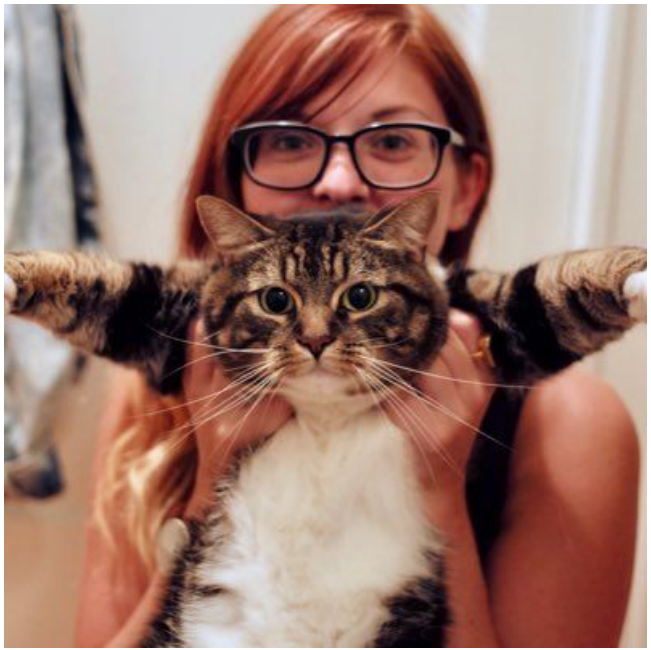
Everything is better with sugar

```
<link rel="import" href="./bower_components/polymer/polymer.html">

<dom-module id="my-polymer-counter">
 <template>
   <style>
     :host {
       font-size: 5rem;
     }
     button {
       font-size: 5rem;
       border-radius: 1rem;
       padding: 0.5rem 2rem;
     }
   </style>
   <button on-click="increment">+</button>
   <span>[[counter]]</span>
 </template>
```

Everything is better with sugar


```
<script>
  class MyPolymerCounter extends Polymer.Element {
    static get is() { return 'my-polymer-counter'; }
    static get properties() {
      return {
        counter: { type: Number, reflectToAttribute:true, value: 0 }
      }
    }
    increment() {
      this.counter = Number.parseInt(this.counter) + 1;
    }
  }

  customElements.define('my-polymer-counter', MyPolymerCounter);
</script>
</dom-module>
```

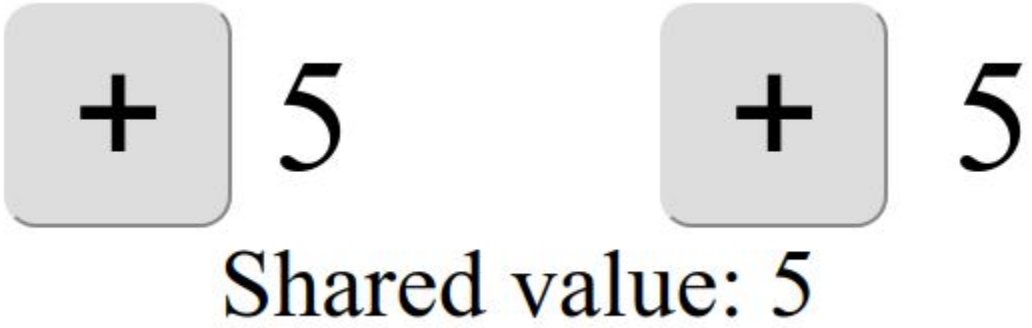
Everything is better with sugar



Polymer is like jQuery for Web components

@notwaldorf

But they are still custom elements



100% interoperables

Interoperation pattern

```
<div class="container">
    <my-polymer-counter
        counter="[[value]]"
        on-counter-changed="_onCounterChanged"></my-polymer-counter>
    <my-counter
        counter="[[value]]"
        on-counter-changed="_onCounterChanged"></my-counter>
</div>
```

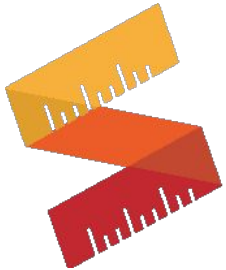
Attributes for data in

Events for data out

To infinity and beyond!

There is a world outside Polymer

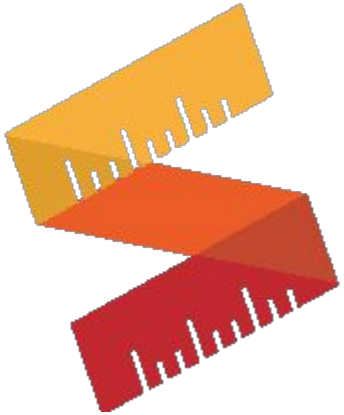
Lots of web components libraries



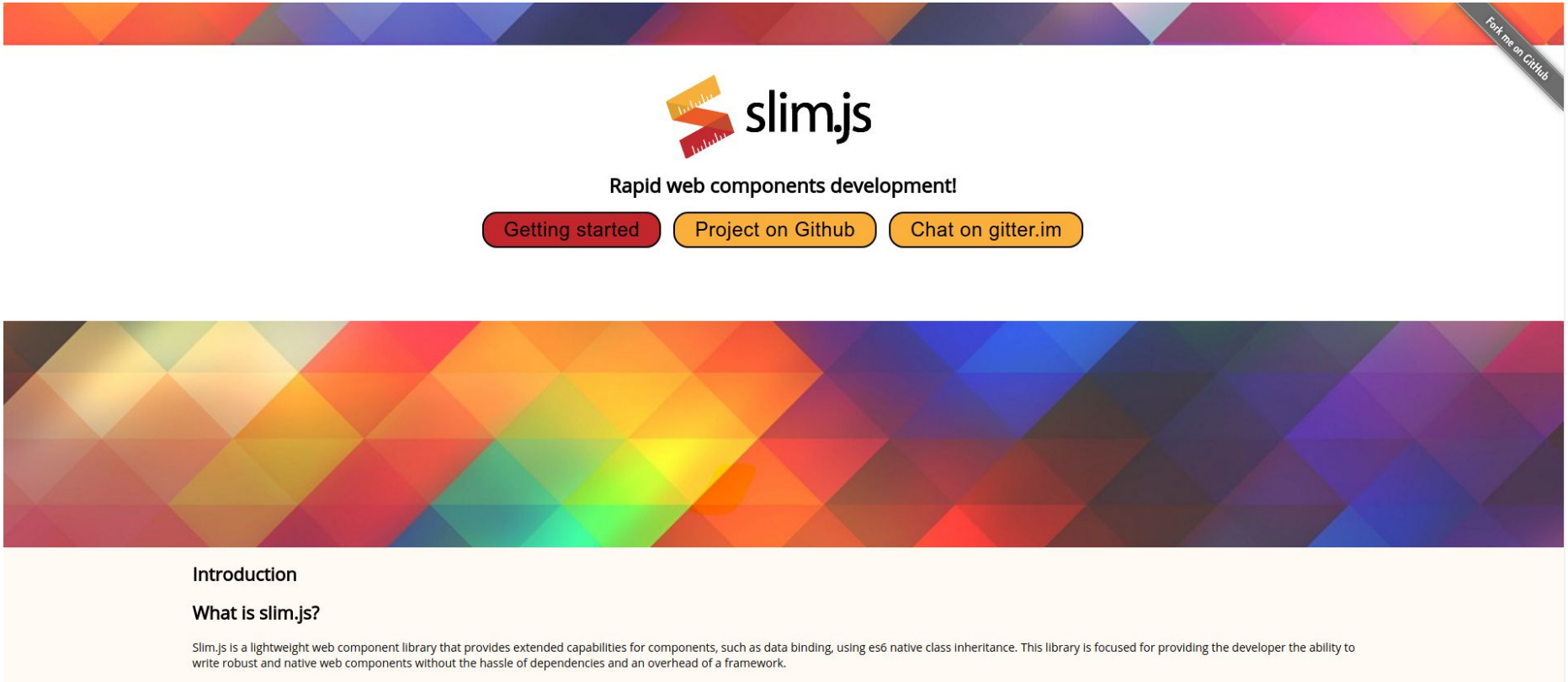
slim.js

For different need and sensibilities

Slim.js



Slim.js


Fork me on GitHub
slim.js
Rapid web components development!
Getting started
Project on Github
Chat on gitter.im
Introduction
What is slim.js?
Slim.js is a lightweight web component library that provides extended capabilities for components, such as data binding, using es6 native class inheritance. This library is focused for providing the developer the ability to write robust and native web components without the hassle of dependencies and an overhead of a framework.

Slim.js

- Lightweight web component library
- Extended capabilities for components
  - data binding
- Using es6 native class inheritance
- Without Shadow DOM

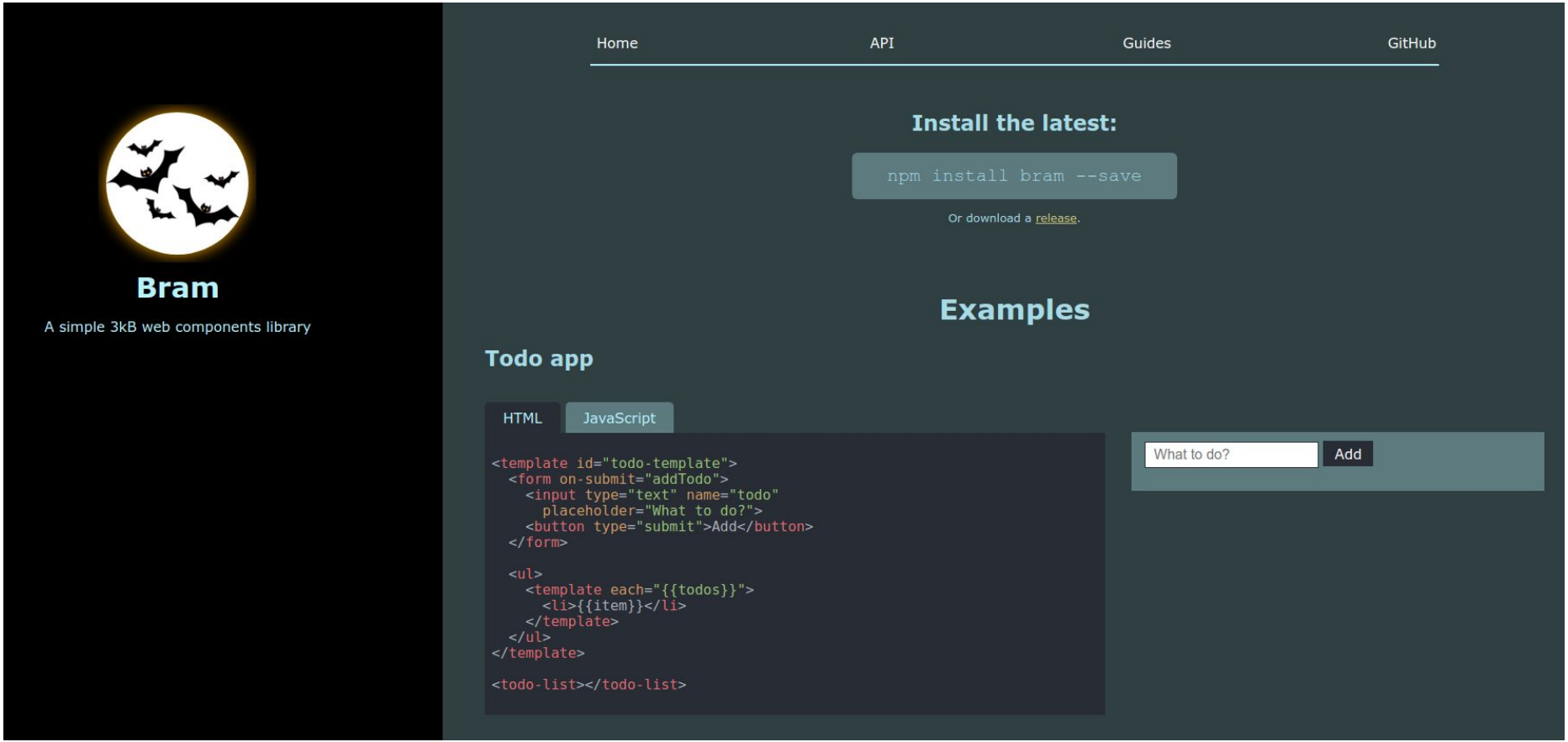
Like a lighter and lesser-featured Polymer

Slim.js

```
Slim.tag('my-slim-counter', `
  <style> [...] </style>
  <div class="container">
    <div class="button"  slim-id="button"> <img src="./img/slim.png"> </div>
    <div class="value" bind> [[counter]] </div>
  </div>`,
  class extends Slim {
    onCreated() {
      if (this.counter == undefined) {
        this.counter = Number.parseInt(this.getAttribute('counter'))||0;
      }
      this.button.onclick = () => {
        this.counter++;
        this.dispatchEvent(new CustomEvent('counter-changed', {detail: {counter: this.counter}}));
      }
    }
  });
```

Bram.js

Bram.js


Home
API
Guides
GitHub
Bram
A simple 3kB web components library
Install the latest:
npm install bram --save
Or download a release.
Examples
Todo app
HTML
JavaScript
<template id="todo-template">
<form on-submit="addTodo">
<input type="text" name="todo"
placeholder="What to do?">
<button type="submit">Add</button>
</form>

<template each="{{todos}}">
{{item}}
</template>

</template>
<todo-list></todo-list>
What to do?
Add

Bram.js

- Lightweight web component library
- Extended capabilities for components
  - data binding
- Using es6 native class inheritance
- With Shadow DOM (optional)

Like a lighter and lesser-featured Polymer, with Shadow DOM

Bram.js

```
let template=`
<style> [...] </style>
   <div class="container">
       <div class="button" on-click="increase">  <img src="./img/bram.png">  </div>
       <div class="value" > {{counter}} </div>
   </div>`;

class MyBramCounter extends Bram(HTMLElement) {
  static get template() {
    let t = document.createElement('template');
    t.innerHTML = template;
    return t;
 }
 static get events() { return ['counter-changed']; }
 constructor() {
   super();
   this.model.counter = this.getAttribute('counter') || 0;
 }
  static get observedProperties() { return [ 'counter' ] }  //Non documented
 increase() {
   this.model.counter++;
   this.dispatchEvent(new CustomEvent('counter-changed', {detail: {counter: this.model.counter}}));
 }
}
```

Skatejs

Skatejs

README.md

Skate

commitizen friendly | semantic-release

Skate is a library built on top of the W3C web component specs that enables you to write functional and performant web components with a very small footprint.

- Functional rendering pipeline backed by Google's Incremental DOM.
- Inherently cross-framework compatible. For example, it works seamlessly with - and complements - React and other frameworks.
- It's very fast.
- It works with multiple versions of itself on the page.

HTML

```
<x-hello name="Bob"></x-hello>
```

JavaScript

Skatejs

- Lightweight web component library
- Functional rendering pipeline
  - backed by Google's Incremental DOM
- Very very fast
- With a React/Preact flavour

Nice if you dislike declarative syntax and DOM...

Skatejs

```
class MySkateCounter extends skate.Component {
 static get props () {
   return {
     counter: skate.prop.number({ attribute: true })
   };
 }
 renderCallback () {
     console.log("render", skate.h('div',{},'hello'));
   return [
       skate.h('style', {}, '.container { [...] }'),
       skate.h('style', '.button { [...]  }'),
       skate.h('style', {}, '.value { margin: 0.5rem; color: #eee; }'),
       skate.h('div', { 'class': 'container'},
           skate.h('div', {
             'class': 'button' ,
             'onClick': () => {
               this.counter++;
               skate.emit(this, 'counter-changed', { detail: { counter: this.counter } });
             }},
             skate.h('img', { 'src' : './img/skate.png' })),
           skate.h('div', { 'class': 'value'}, this.counter))
   ];
 }
}
```

Conclusion

That's all folks!

Thank you!

thank you
danke
gracias
merci
obrigado
teşekkür ederim
go raibh maith agat
dziękuję
sukriya
kop khun krap
mochchakkeram
grazie
arigatô
dakujem
bedankt
terima kasih
спасибо
謝謝
감사합니다
ありがとう
ngiyabonga
tapadh leat
mauruuru
hvala
dank je
sagolun
takk
мерси