



Shadow DOM

RICK GUIDICE

Fejes Anikó

[@hubudibu](#)

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codepen.io/hbudibu

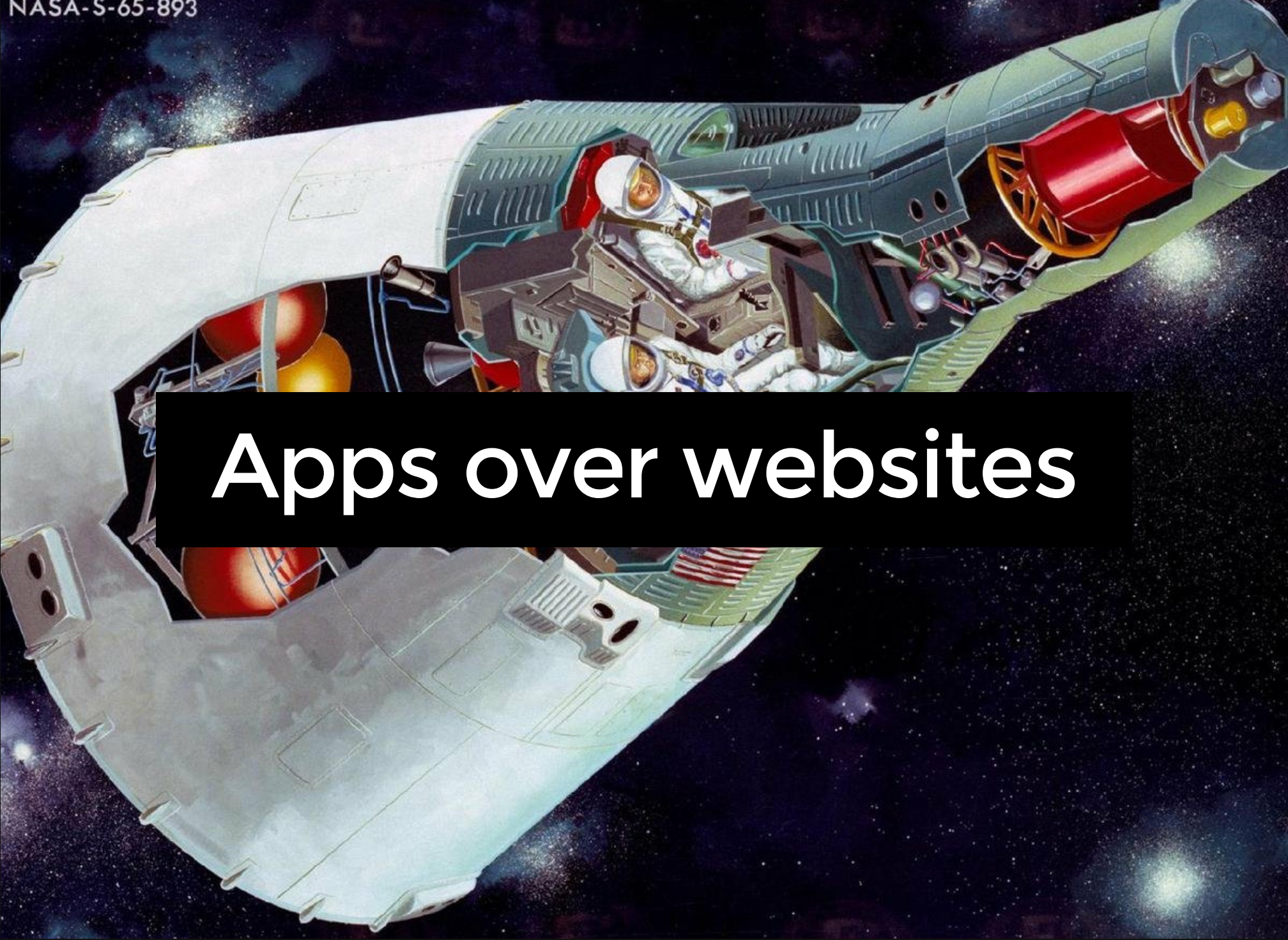
```
▼<input id="e2" type="number" min="2" max="20">
```

```
▼#document-fragment  
▼<div part="-webkit-textfield-decoration-container">  
▼<div>  
  <div>2</div>  
</div>  
  <div part="-webkit-inner-spin-button" id="spin"></div>  
</div>  
</input>
```

```
input::-webkit-inner-spin-button {  
  -webkit-appearance: inner-spin-button;  
  display: block;  
  position: relative;  
  cursor: default;  
  height: 1.5em;  
  vertical-align: top;  
  flex: 0 0 auto;  
  -webkit-user-select: none;  
  -webkit-user-modify: read-only;  
}
```

The "Rule of Least Power" suggests choosing the least powerful solution suitable for a given purpose.



Apps over websites

The component model for the Web

Encapsulation

Clean API

DRY

Portability



a new way of creating
jQuery plugins?

"X-Tag and Polymer are both high-level sugar libraries that build upon the W3 Web Components specs - each introduces a different approach to making development of web components an even more amazing experience. To help make this more relatable, consider the following:

jQuery : DOM :: X-Tag/Polymer : Web Components."

"we need to keep our eye on moving on with implementing the core functionality in browsers. Libraries are tools to get things done **now**. We should allow them to become redundant."

Shadow DOM

Templates

Custom Elements

HTML Imports

<http://jonrimmer.github.io/are-we-componentized-yet/>



Shadow DOM

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Shadow DOM

Method of establishing and maintaining **functional boundaries between DOM trees** and how these trees interact with each other within a document, thus enabling better functional encapsulation within the DOM.


```
▼ <input id="e2" type="number" min="2" max="20">
  ▼ #shadow-root (user-agent)
    ▼ <div id="text-field-container" pseudo="-webkit-textfield-
      decoration-container">
      ▼ <div id="editing-view-port">
        <div id="inner-editor"></div>
      </div>
      <div pseudo="-webkit-inner-spin-button" id="spin"></div>
    </div>
  </input>
```


DOM encapsulation

Style boundaries

Separate form from function

Style boundaries

Insertion points

Separate form from function

▶ What's this?

Event handling

events are **retargeted** to look like they've come from the host element rather than internal elements to the Shadow DOM.

An aerial photograph of a city with a grid overlay, possibly representing a web page layout. A large yellow sphere is positioned in the upper left quadrant. The grid lines are light blue and green, and the city buildings are visible in the background.

Shadow DOM

Templates

Custom Elements

HTML Imports

Templates

Method of declaring a portion of reusable markup that is **parsed** but **not rendered** until cloned.



**Shadow DOM
Templates**

Custom Elements

HTML Imports

Custom Elements

Method of defining and using new types of DOM elements in a document.


```
<custom-element></custom-element>
```

```
var CustomElement = document.registerElement('custom-element')  
document.body.appendChild(new CustomElement());
```

Lifecycle events

AttributeChanged event

Extending elements

progressive enhancement


```
<button is="custom-button"></button>
```

```
var CustomButton = document.registerElement('custom-button',  
  prototype: Object.create(HTMLButtonElement.prototype),  
  extends: 'button'  
  });
```



Shadow DOM

Templates

Custom Elements

HTML Imports

HTML Imports

Method of including and reusing HTML documents in other HTML documents.

DRY principle

Portability

Deduping


```
<template>
  <style>
    .sticker {
      font: 30px/1.5 Montserrat, sans-serif;
      border: 4px solid crimson;
      border-radius: 20px;
      width: 400px;
      text-align: center;
      overflow: hidden;
    }
    .label {
      background: crimson;
      margin: 0;
      padding: .5em;
      color: white;
      font-size: .8em;
    }
    .name {
      font-weight: bold;
    }
  </style>
  <div class="sticker">
    <p class="label">Hi, my name is</p>
```

Can I use it?

<http://jonrimmer.github.io/are-we-componentized-yet/>

Chrome extensions



platform.js

Polymer

X-Tag

Bosonic

AngularJS

React

<polymer-wc>

Brick

Polymer

<vanilla-wc>

x-tag

Polyfill (platform.js)

Platform (standards)

Polymer core elements

Paper elements

Mozilla Brick

Customelements.io

Component Kitchen

```
<google-map latitude="37.77493"  
  longitude="-122.41942" fitToMarkers>  
  
  <google-map-marker  
    latitude="37.779" longitude="-122.3892"  
    draggable="true" title="Go Giants!">  
</google-map-marker>  
  <google-map-marker  
    latitude="37.777" longitude="-122.38911">  
</google-map-marker>  
</google-map>
```

```
<google-analytics
  domain="example.com"
  code="UA-XXXXX-Y">
</google-analytics>
```

```
<core-ajax
  auto
  url="http://gdata.youtube.com/feeds/api/videos/"
  params='{ "alt": "json", "q": "chrome" }'
  handleAs="json"
  on-core-response="{ {handleResponse} }">
</core-ajax>
```

```
<paper-slider></paper-slider>
```


Questions?

Iframes :/

new document context

sizing issues

meaningless markup

hard to script into it

BUT it's safer