



Intro to Web Components

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LOL 2022-01-06



Overview

- Introduction to components
- Web components
- Demo
- Tooling
- Resources



Introduction to components



Introduction to components

Components are self-contained units of a user interface

- The LEGO bricks to build a set
- Simple to complex
 - Presentational vs stateful
- Small to large
 - Atoms, Molecules, organisms



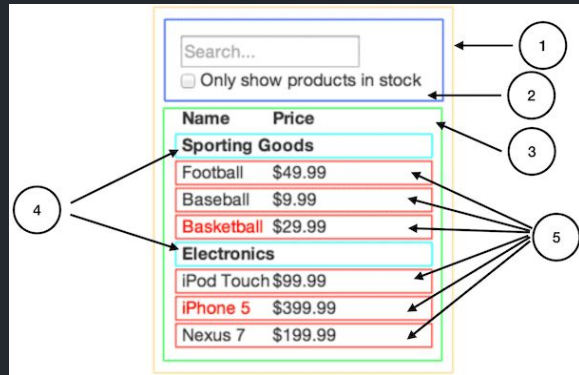


Introduction to components

Core principle of front-end frameworks:

- jQuery UI, Angular, React, Vue, Svelte

How designers want to design and engineers want to build



Outlining components in a design (reactjs.org)



Introduction to components



```
function HelloWorld(props) {  
  return <p>Hello {props.name}</p>  
}  
  
<HelloWorld name="world" />
```



```
<script>  
  export let name  
</script>  
  
<p>Hello {name}</p>  
  
<HelloWorld name="world" />
```





Web components



Web components

Custom elements in vanilla JavaScript

Introduced in 2011 as a joint effort
of TC39 group and Google Chrome

Core component of the Google's Polymer
Framework (2015-2020)





Web components

Classes that tell the browser how to render custom elements

- Extend a basic HTML element class
- Create an encapsulated “shadow” DOM
- Construct UI on shadow DOM
- Defined as elements for the browser to render


```
class HelloWorld extends HTMLElement {  
  constructor() {  
    super();  
  
    const shadow = this.attachShadow({ mode: "open" });  
    const wrapper = document.createElement("span");  
    wrapper.textContent = "Hello world!";  
  
    shadow.appendChild(wrapper);  
  }  
}  
  
customElements.define("hello-world", HelloWorld);
```

Web components

Custom Elements (V1) - LS

One of the key features of the Web Components system, custom elements allow new HTML tags to be defined.

Usage

% of all users  ?

Global

74.43% + 19.42% = 93.85%

Current aligned

Usage relative

Date relative

Filtered

All



IE	Edge [*]	Firefox	Chrome	Safari	Opera	Safari on iOS [*]	Opera Mini [*]	Android Browser [*]	Opera Mobile [*]	Chrome for Android	Firefox for Android	UC Browser for Android	Samsung Internet	QQ Browser	Baidu Browser	KaiOS Browser
		2-49														
		21 50-58	4-53		10-40								4			
	12-18	31 59-62	54-66	3.1-10.1	41-63	3.2-10.2							1 5.4			
6-10	79-95	63-94	67-95	10.1-15.1	64-81	10.3-15.1		2.1-4.4.4	12-12.1				6.2-14.0			
11	96	95	96	1 15.2	82	1 15.2	all	96	64	96	95	12.12	15.0	1 10.4	1 7.12	2.5
		96-97	97-99	1 TP												

Can I use... custom elements (taken 2022-01-05)



Demo



Tooling



Tooling

- Authoring
 - [Lit.dev](#): The most common library for creating web components (formerly lit-html)
 - [Stencil](#): A library for creating design systems with web components
 - [Svelte](#): Configuration to generate web components with Svelte
- Libraries
 - [WebComponents.org](#): A catalog of web component libraries
 - [Shoelaces](#): A library of web components
- Using web components
 - [React](#)
 - [Vue](#)





Resources



Resources

[Custom Elements \(V1\) | Can I use... Support tables for HTML5, CSS3, etc](#)

[Lit \(lit.dev\)](#)

[Shoelace's components \(shoelace.style\)](#)

[Stencil \(stenciljs.com\)](#)

[Svelte and custom elements \(svelte.dev\)](#)

[Polymer/polymer: Our original Web Component library. \(github.com\)](#)

[Vue and Web Components \(vuejs.org\)](#)

[WICG/webcomponents: Web Components specifications \(github.com\)](#)

[WebComponents.org \(webcomponents.org\)](#)

[Web Components | MDN \(mozilla.org\)](#)

[Web Components – React \(reactjs.org\)](#)

[Web Components \(wikipedia.org\)](#)