

Design systems and web components

A scalable and accessible foundation

Erik Kroes

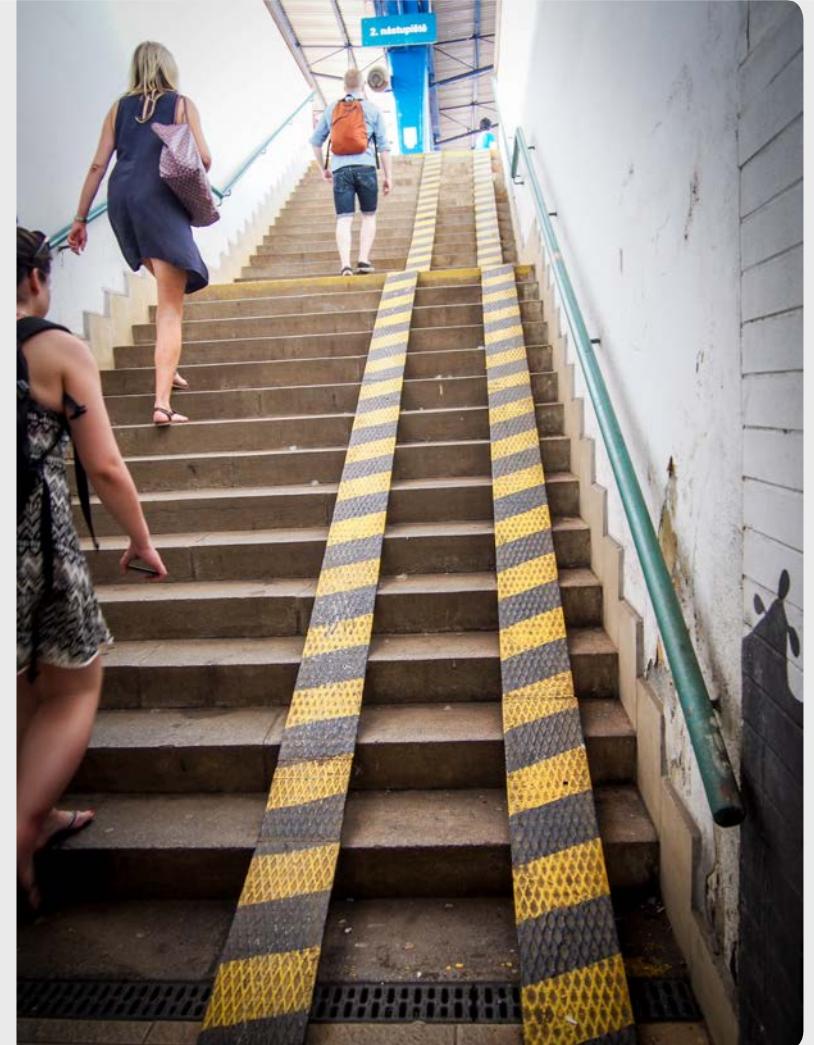
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Hi, I'm Erik Kroes

- Photographer
- Visual Artist
- Creative Coder
- Accessibility Specialist
- Front-end developer
- Fabric store owner

The story today

1. The part where I am really enthusiastic and hope you are too
2. The part where I tell you it's not that easy
3. The part where I make you happy again



The part where I am really enthusiastic
and hope you are too

What is a Design System?

“[The] ingredients [that] come together to tell the story of how your organization designs and builds products”

- Brad Frost

What is in a design system?

In general it will have some of these elements

- Corporate identity (colors, fonts, images, etc)
- Design principles
- Guidelines (Development and UX)
- Style guide
- Design library
- Coded components
- Component guidelines
- Way of working

I 🐈 Design Systems

- Separation of concerns
- Quality
- Speed
- Unified User Experience
- Efficiency, Create once use many

What are Web Components

Web Components are a set of standards

- Custom Elements: A way to create your own HTML elements
- ES Modules: Self-contained modules of JavaScript code that can be reused and extended
- HTML Templates: Reusable fragments of DOM
- Shadow DOM: Encapsulation of DOM

And when their powers combine...



What are Web Components?

“Reusable extendable encapsulated self-contained components for the web.”

A practical example

```
<google-map fit-to-markers api-key="AIzaSyD3E1D9b-Z7ekrT3tbh1_dy8DCXuIuDDRc">  
  <google-map-marker latitude="37.78" longitude="-122.4"  
    draggable="true"></google-map-marker>  
</google-map>
```

<https://github.com/GoogleWebComponents/google-map>

A not so practical example

```
<spacer-gif height="1" width="1"></spacer-gif>
```

<https://github.com/erikkroes/spacer-gif>

I 🐈 Web Components + Design Systems

- Reusable: Create once, use anywhere
- Extendable: Create variations
- Encapsulated and self-contained: Consistent, and controllable
- Support
- Flexible

The part where I tell you it's not that
easy

What isn't used is a waste

“Write guidelines, not books”

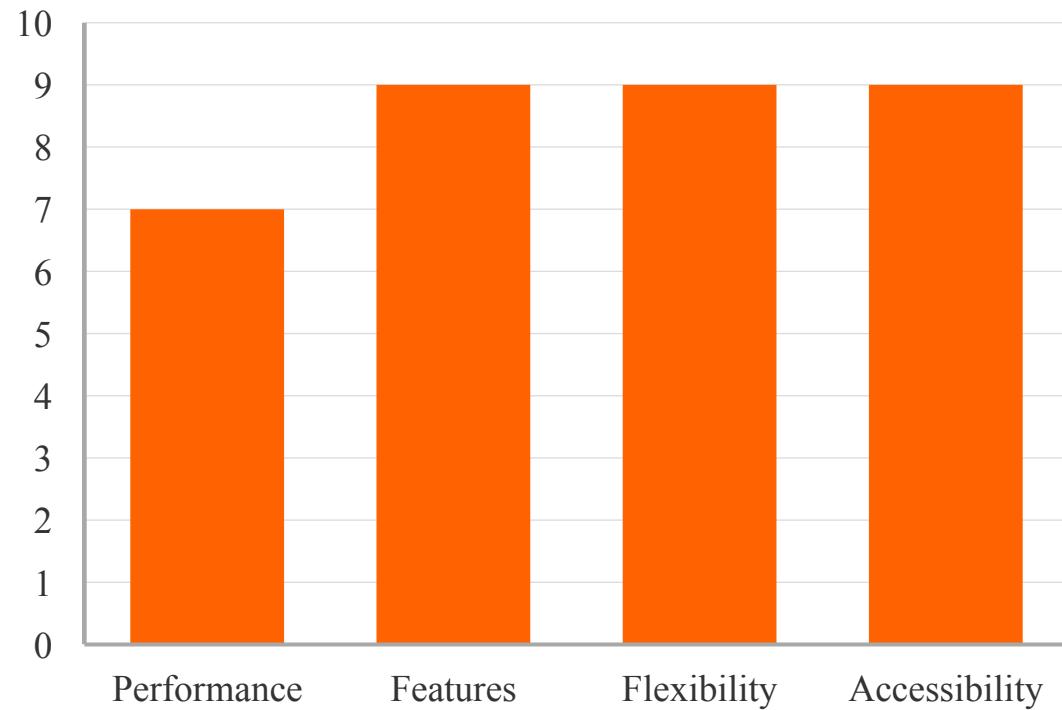


One point of truth

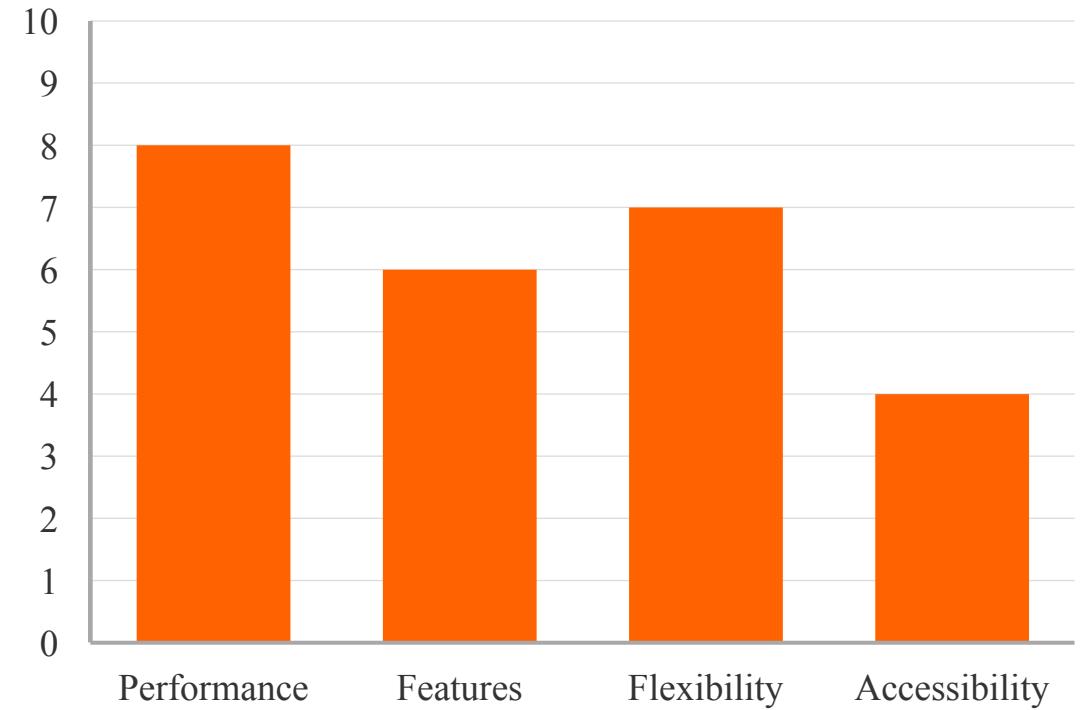
- One point of failure
- One point of blame

Quality and contributions

Old component



New component



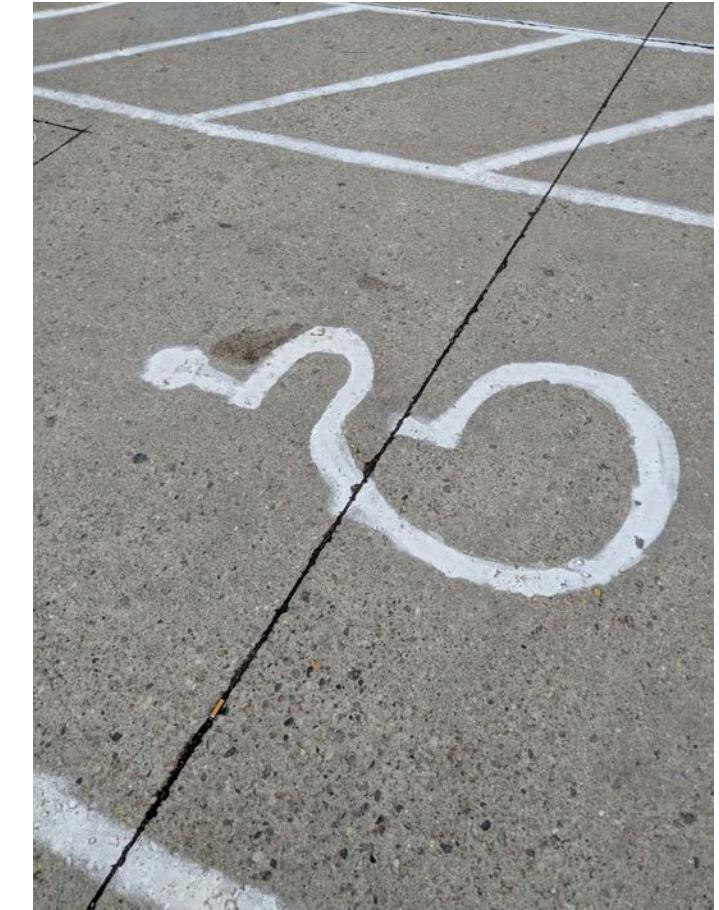
Freedom

“As much as need but as little as you can”

Making accessible UI components is hard



Making accessible UI components is really really hard



Making accessible UI components is really really hard

Know this by heart

- Focusable
- Visible states (focus, active, hover)
- Functional states
- Keyboard interaction
- Semantics, role
- Accessible name
- Communicate state and properties
- Relationships
- Global standards/conventions
- Circumvent browser bugs and variations

If you'd ask me...

*“Everybody should use Web Components
Few people should build them”*

The part where I make you happy
again

Web Components + Accessibility = 

Lion is a set of open source web components by ING

- Performant
- Flexible
- Accessible
- White label

What is included in 🐾?

- A form system with validation, localization and all kinds of form elements
- Icon system
- Overlay system with a dialog
- Steps system
- Ajax
- Calendar and datepicker

A lion example

```
<lion-input-datepicker label="Date" .modelValue=${new Date('2017/06/15')}>  
</lion-input-datepicker>
```

<https://github.com/ing-bank/lion>

Thank you

**A scalable and accessible foundation with Web Components is priceless
but you can get it for free.**

- <https://github.com/ing-bank/lion>
- <https://lion-web-components.netlify.com>
- <https://twitter.com/erikkroes>