Web Components for non-idealists

What are web components?

Basically: widgets

Called "components"

```
<fancy-card>
  <h3>Fridolin Frontend</h3>
  <p>Frontend developer</p>
</fancy-card>
```

Independent, importable

```
<link rel="import"
    href="components/fancy-card.html">
```

Part of the HTML standard

at some point, hopefully...

Extend other components

```
<super-fancy-card>
  <h3>Fridolin Frontend</h3>
  <p>Frontend developer</p>
</super-fancy-card>
```

Extend HTML elements

```
<link rel="import"
    href="components/fancy-button.html">

<button is="fancy-button">Save</button>
```

Should I care?

Yes, because

- You have solved the "widget problem" in every project differently.
- There are a lot of libraries which solve it (jQuery UI, Angular JS directives, ...).
- Now comes the HTML standard solution for it.

Yes, because

This future has to excite you:

1. **Find nice and matching web component for your UI problem**
2. **Add it to your bower.json, install it**
3. **Use it in your HTML as it would be part of the HTML standard**

Yes, because

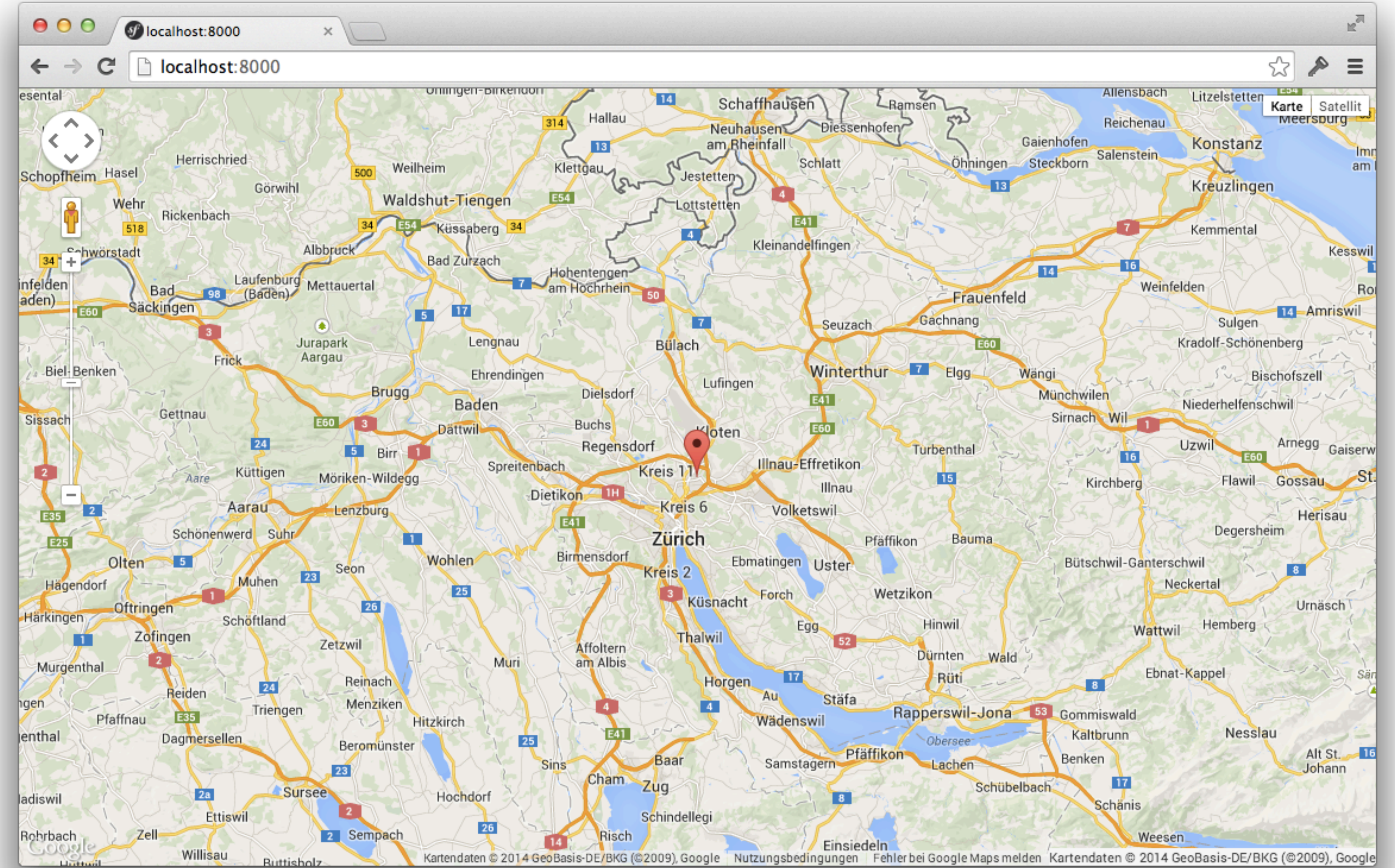
It will make your work easier, not harder. (Just a slight learning curve in the beginning, I promise ;)

Yes, because

You can start now. (Github uses it already in production :)

As an example: Google maps

```
<google-map latitude="37.779"
    longitude="-122.3892">
  <google-map-marker latitude="37.779"
      longitude="-122.3892">
    <h3>Hoi!</h3>
  </google-map-marker>
</google-map>
```


localhost:8000
localhost:8000
Karte
Satellit
Schaffhausen
Konstanz
Kreuzlingen
Waldshut-Tiengen
Frauenfeld
Winterthur
Bülach
Kloten
Baden
Brugg
Aarau
Zürich
Kreis 11
Kreis 6
Kreis 2
Uster
Wetzikon
Küsnacht
Thalwil
Horgen
Wädenswil
Rapperswil-Jona
Pfäffikon
Zug
Baar
Cham
Sursee
Olten
Zofingen
Wil
Gossau
Herisau
Dietikon
Regensdorf
Volketswil
Illnau-Effretikon
Lenzburg
Wohlen
Kartendaten © 2014 GeoBasis-DE/BKG (©2009), Google
Nutzungsbedingungen
Fehler bei Google Maps melden

As an example: Voice recognision

```
<voice-recognition id="recognition-element">
</voice-recognition>

<script>
document.querySelector('#recognition-element')
   .addEventListener('result', function(e) {
     console.log(e.detail.result);
});
</script>
```

Browser support August 2014

- Chrome: Almost
- Firefox: Kind of
- Safari: Nope
- Internet Explorer: No way

jQuery for web components

Polyfill for web components, which allow web components even for Internet Explorer 9!

https://github.com/Polymer/platform

Libraries

- Polymer
- Mozilla Bricks
- X-Tags

Polymer

- Based on platform.js like Mozilla Bricks.
- On top of that: Binding
- On top of that: Some sugar

LET'S START

Setup

```
bower init

bower install --save Polymer/polymer

mkdir my-timeline
```

INDEX.HTML

```
<html>
<head>
    <script src="bower_components/platform/platform.js"></script>
    <link rel="import" href="my-timeline/my-timeline.html">

</head>
<body>
    <my-timeline>
</body>
</html>
```

MY-TIMELINE/MY-TIMELINE.HTML

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

<polymer-element name="my-timeline">

  <template>
    <div>
        <div id="segment"></div>
    </div>
  </template>

  <script>
    Polymer('my-timeline')
  </script>

</polymer-element>
```

Templates (or shadow DOM)

HTML in template is implementation detail of component. It is called

Shadow DOM

and not visible from outside DOM (light DOM).

CSS FOR THE ELEMENT

```
:host {
    border: 1px solid grey;
}
#segment {
    background-color: grey;
    display: block;
}
```

This CSS is not visible from outside. (Shadow DOM)

Style elements from outside

```
#my-timeline {
    border: 1px solid blue;
}
```

How do I style the segment?

Shadow DOM is in general not stylable from outside. There are some non-standardized ways to "cross" into shadow DOM:

```
#my-timeline {
    border: 1px solid blue;
}
#my-timeline::shadow #segment {
    background-color: red;
}
```

Better: redesign element

```
<style>
#my-timeline {
    border: 1px solid blue;
}
#my-timeline-segment {
    background-color: red;
}
</style>

<my-timeline>
    <my-timeline-segment>
</my-timeline>
```

Attributes in light HTML

```
<my-timeline duration="10">
    <my-timeline-segment start="2" end="3">
</my-timeline>
```

Attributes in JS

```
<polymer-element name="my-timeline" attributes="duration">
  <script>
    Polymer('my-timeline', {
        duration: 5,
        durationChange: function() {
            // duration has changed
        }
        domReady: function() {
            // upgraded HTML elements are ready
        }
    });
  </script>
</polymer-element>
})
```

Polymer: bindings

```
<my-backend-segment duration="{{duration}}" start="{{start}}" end="{{end}}">
<my-timeline duration="{{duration}}">
    <my-timeline-segment start="{{start}}" end="{{end}}">
</my-timeline>
```

`my-backend-segment` encapsulates the backend API. Attributes are bound together.

Doesn't this make sense?

Starting points

- http://webcomponents.org/
- http://www.polymer-project.org/
- http://mozbrick.github.io/
- http://googlewebcomponents.github.io/
- http://component.kitchen/

Thx.