ABOUT ME

I really like my work, software engineering never makes me bored, always keeps in learning and improving mood.

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 http://bit.ly/2FAm3Lr

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Big organizations or companies - large number of teams.

Bounding to one technology (framework or library).

Keeping same "Look and feel" across all of them.

Extra resources to build same UI in different technologies.

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NATIVE WEB COMPONENTS TO CREATE FRAMEWORK AGNOSTIC REUSABLE UI LIBRARIES.

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COMPONENT BASED JS FRAMEWORKS

ANGULAR

REACT

VUE

EMBER

ANGULAR JS

AURELIA

WEB COMPONENT WORLD

- **Native web components api**

- **Bosonic** is a collection of components designed to meet the everyday needs of web developers.

- **Polymer** provides a set of features for creating custom elements.

- **SkateJS** is a JavaScript library for writing web components with a small footprint.

- **Slim.js** is an open source lightweight web component library.

- **Stencil** is an open source compiler that generates standards-compliant web components.

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```
▼<video width="400" controls> == $0
    <source src="mov_bbb.mp4" type="video/mp4">
    <source src="mov_bbb.ogg" type="video/ogg">
    "
      Your browser does not support HTML5 video.
    "
  </video>
```

Preferences

Elements

☐ Show rulers

Color format: As authored ▾

☑ Show user agent shadow DOM

☑ Word wrap

☑ Show HTML comments

☑ Reveal DOM node on hover

```
▼<video width="400" controls> == $0
  ▼#shadow-root (user-agent)
    ▼<div pseudo="-webkit-media-controls" class="phase-ready state-
      stopped">
      ▶<div pseudo="-webkit-media-controls-overlay-enclosure">…</div>
      ▶<div pseudo="-webkit-media-controls-enclosure">…</div>
        <div pseudo="-internal-media-controls-text-track-list" style=
        "display: none;"></div>
      ▶<div pseudo="-internal-media-controls-overflow-menu-list" style=
      "display: none;">…</div>
    </div>
  <source src="mov_bbb.mp4" type="video/mp4">
  <source src="mov_bbb.ogg" type="video/ogg">
  "
    Your browser does not support HTML5 video.
  "
</video>
```

Web component recipe

1. Set a custom element (tag):
```
customElements.define("z-product-card", elementClassDefinition);
```
2. Define component class extending from HTMLElement:
```
customElements.define("z-product-card",
        class ZProductCard extends HTMLElement {
        });
```

3. Add your component's markup with template tag or set it manually.

4. Attach a shadow DOM and append your template to it:
```
let shadowRoot = this.attachShadow({mode: 'open'});
shadowRoot.appendChild(templateContent.cloneNode(true));
```

5. Depending on requirements add a polyfills:
```
npm install @webcomponents/webcomponentsjs -S
```
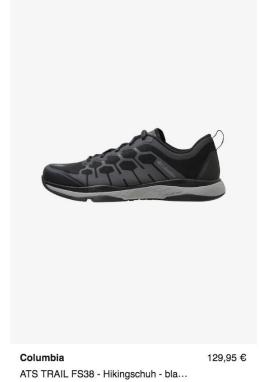
EXAMPLE: A PRODUCT CARD COMPONENT

ALDO   99,95 €
WYANET - Business-Slipper - navyl

ALDO   89,95 €
ROXBURY - Mokassin - black

Columbia   129,95 €
ATS TRAIL FS38 - Hikingschuh - bla…

international
PHP2018
conference
– spring edition –
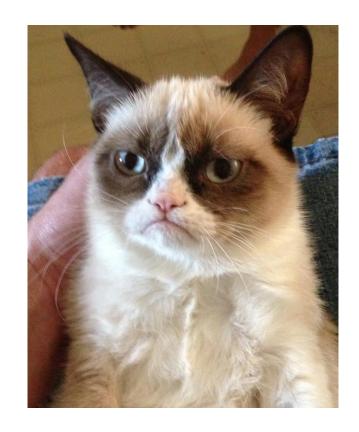
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Web component recipe

DEMO

The drawbacks :(

1. Lots of boilerplate code to setup over and over.
2. Browser support. Need to include various polyfills yourself.
3. Adapt your code to use those polyfills.
4. You have to setup bundling, building etc.

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STENCIL: REUSABLE WEB COMPONENT COMPILER

- Developed by Ionic team.

- Not a library, just a compiler.

- Virtual DOM

- Async rendering (inspired by React Fiber)

- Reactive data-binding

- TypeScript

- Lazy loading. Polyfills are loaded only when needed.

- JSX

STENCIL COMPONENT EXAMPLE

1. Define component class with @Component decorator

```
@Component({
  tag:      'z-product-card',
  styleUrl: 'z-product-card.css',
  shadow:   true
})
export class ZProductCard {

}
```

2. Add properties and events with decorators

```
export class ZProductCard {

    @Prop() product: any;

    @Event() productLiked: EventEmitter;

    productLikedHandler() {
        this.productLiked.emit(this.product);
    }

    render() {
        return <div>Components html here</div>
    }
}
```

STENCIL COMPONENT EXAMPLE

DEMO

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Stencil & Angular CLI

1. Add assets and scripts to cli configuration file: angular.json

```json
"assets": [
 { "glob": "**/*", "input": "./node_modules/z-product-card/dist/zlib", "output": "./zlib" },
 { "glob": "**/*", "input": "./node_modules/z-product-card/dist/collection/assets", "output": "./assets" }
],
"scripts": [
 "./node_modules/z-product-card/dist/zlib.js"
]
```

2. Add CUSTOM_ELEMENTS_SCHEMA to let angular ignore unknown elements

```
@NgModule({
 declarations: [
   AppComponent
 ],
 imports: [
   BrowserModule
 ],
 bootstrap: [AppComponent],
 schemas: [
    CUSTOM_ELEMENTS_SCHEMA
 ]
})
```

```
                                    duct of products"
  [product]="product"

  (productLiked)="onProductLiked($event)"

</z-product-card>
export class AppComponent {
 public products: any = products;
 public likedProducts: any = [];

 public onProductLiked(evt: any) {
   this.likedProducts.push(evt.detail);
 }
}
```

Stencil & React

1. Add the stencil component to your build.

Use copy-webpack-plugin to copy components files to destination folder:

```
plugins: [

new CopyWebpackPlugin([{ from: './node_modules/z-product-card/dist', to:

'./z-product-card' }])

]
```

Add a reference to your index.html file:

```
<script src="%PUBLIC_URL%/z-product-card/zlib.js"></script>
```

2. Add your component to render function:

```
render() {
 const productsHtml = this.products.map((product, i) => {
   return (
     <z-product-card product={this.processProductData(product)}></z-product-card>
   );
 });

 return (
   <div className="demo-container">
       {productsHtml}
   </div>
 );
}
```

3. React calls toString() method on properties this casses an input to component ti equal "[object Object]".

Add a function to transform data into string to avoid it.

```
processProductData(data) {
 if (data) {
   return JSON.stringify(data);
 }
}
```

4. Subscribe to custom component events:

```
componentDidMount() {

ReactDOM.findDOMNode(this).addEventListener("productLiked

    liked.push(JSON.parse(e.detail));

    this.setState({

        likedProducts: this.state.likedProducts

        });

    });

}
```

1. Tell Vue to ignore your stencil component:

Vue.config.productionTip = false

Vue.config.ignoredElements = [

'z-product-card'

]

2. Add your component to template:

```
<template>
 <div>
  <z-product-card class="product-grid-item" v-for="product in products"
    :product="procesProduct(product)"
    v-on:productLiked="onProductLiked"
 </div>
</template>
```

RESOURCES

Slides

https://github.com/DmitriyNoa/presentations

Basic native web component example

https://github.com/DmitriyNoa/z-product-card-native-webcomponent

Angular cli + stencil example

https://github.com/DmitriyNoa/angular-cli-stencil-example

React + stencil example

https://github.com/DmitriyNoa/react-stencil-example

VueJS + stencil example

https://github.com/DmitriyNoa/vue-stencil-example