

POLYMER

Le web de demain, aujourd'hui

Wikipedia.org: Polymer

du grec polus, plusieurs, et meros, partie

OBJECTIF:

Éléments HTML sur mesure et réutilisables

MOYEN:

Librairie(Web Components)

WEB COMPONENTS ?

- Template natifs
- Object.observe / 2 way data-binding
- shadow dom
- custom element
- html import

CONCEPTS IMPORTANTS

DES WEB COMPONENTS

- Tout peut être un élément, visuel ou non
- css non invasif par défaut
- les évènements ne sont pas morts

POLYMER VS WEB COMPONENTS

- Polyfill
- lib de "simplification"

POLYMER VS ANGULAR.JS

```
Polymer = Directives( Angular.js ) - Angular.js
```

ÉLÉMENTS NON VISUELS

appel ajax

```
core-ajax(url="api.twitter.com", params='{ "key": "val" }', method="GET", au
```

local-storage

```
core-localstorage(name="code3" valeur="Égalitarisme")
```

carte google maps

```
google-map(latitude="37.77493", longitude="-122.41942")
```

routeur de page

```
app-router  
app-route(path="/tracks/add", import="add-track.html")  
app-route(path="/tracks/stats", import="stat-tracks.html")
```

back end complet

```
code3-backend(api="https://api.code3.ca")
```


UN AIRE D'ÉLÉMENT (OU L'INVERSE)

```
polymer-element(name="code3-aire-text", noscript,  
                attributes="longueur, largeur")  
  template  
    {{longueur * largeur}}
```

-

```
code3-aire-text(longueur=10, largeur=12)
```

-

```
<code3-aire-text longueur=10 largeur=12> 120 </code3-aire-text>
```

CHANGE D'AIRE

```
polymer-element(name="code3-aire-valeur", noscript,  
                attributes="longueur, largeur, aire")  
script.  
  Polymer({  
    longueurChanged:function(){  
      computeAire()  
    },  
    largeurChanged:function(){  
      computeAire()  
    },  
    computeAire:function(){  
      this.aire = this.largueur * this.longueur;  
    }  
  })
```

EXEMPLE D'APPEL AJAX DÉCLARATIF

```
polymer-element(name="code3-auto-save-form", noscript)
  template
    core-ajax(url="/api/run", method="POST", auto, params="{{ run }}")
  form
    core-field
      label Date
      core-input(value="{{run.date}}", type="date")
    core-field
      label Distance
      core-input(value="{{run.distance}}", type="number")
```

T'AS L'AIR DIFFÉRENT

```
polymer-element(name="code3-button", noscript, attributes="color, text")
  template
    style
      button {
        color: {{ color }};
      }
    button {{text}}
```

EXPRESSION !== JS

MAIS...

```
core-item(label="Add", class="{{(selected=='add-track')?'core-selected':
```

FILTRE À AIRE

```
{{employe.salaire | CAD}}
```

-

```
{{exp | filtre( arg )}} ==> filtre: (exp, arg )-> ...
```

ÇA À PAS L'AIR VRAI !

```
polymer-element(name="code3-click-counter")
  template
    button(label="click me", on-click="{{inc}}")
    core-ajax#req(url="/api/counter", method="POST",
      params="{{ {counter: counter} }}")
  script./* en coffee pour la conscision*/
  Polymer
    ready: ->
      this.$.req.addEventListener "core-response", ->
        console.log "YEAH !!! #{this.counter}"
    counter: 0
    inc: ->
      counter++
      this.$.req.go()
```

UN AIRE *IMPORTANT*

```
head
```

```
link(rel="import", href="bower-components/code3-button/code3-button.htm")
```


RÉPÉTITION / CONDITIONNELLE

```
template(if="{{exp}}")  
template(repeat="{{exp in exps}}")
```

**MES OUTILS MARCHENT
ENCORE ?**

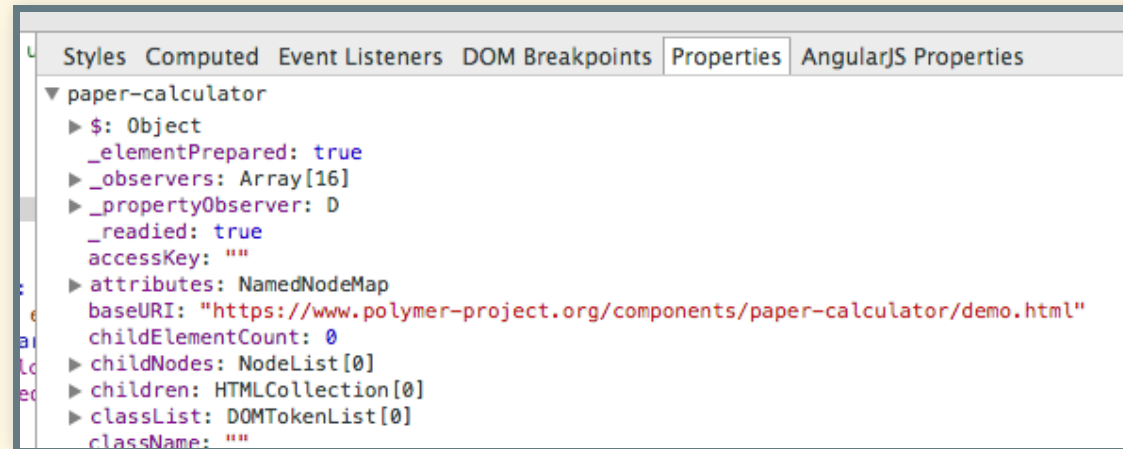
Options dev tools

Elements

Color format

- Show user agent styles
- Show user agent shadow DOM
- Word wrap
- Show rulers

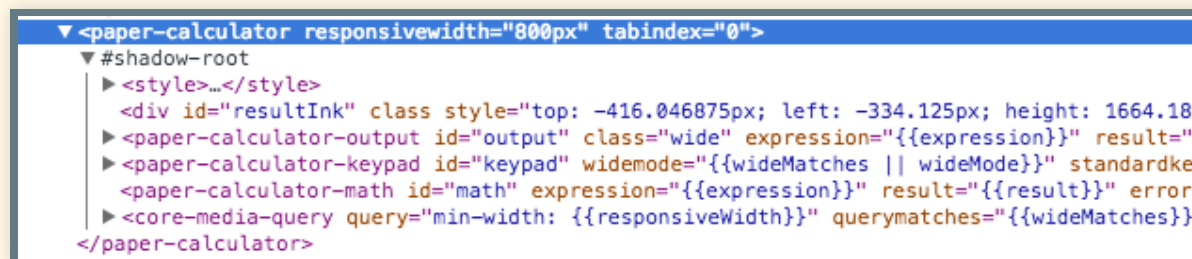
Propriété d'éléments



The screenshot shows the 'Properties' tab in Chrome DevTools for a `paper-calculator` element. The element's properties are listed as follows:

- `paper-calculator`
 - `$`: Object
 - `_elementPrepared`: true
 - `_observers`: Array[16]
 - `_propertyObserver`: D
 - `_readied`: true
 - `accessKey`: ""
 - `attributes`: NamedNodeMap
 - `baseURI`: "https://www.polymer-project.org/components/paper-calculator/demo.html"
 - `childElementCount`: 0
 - `childNodes`: NodeList[0]
 - `children`: HTMLCollection[0]
 - `classList`: DOMTokenList[0]
 - `className`: ""

Inspection d'élément



The screenshot shows the 'HTML' tab in Chrome DevTools for a `paper-calculator` element. The structure is as follows:

```
<paper-calculator responsivewidth="800px" tabindex="0">  
  #shadow-root  
    <style>...</style>  
    <div id="resultInk" class style="top: -416.046875px; left: -334.125px; height: 1664.187px;>  
      <paper-calculator-output id="output" class="wide" expression="{{expression}}" result="{{expression}}">  
        <paper-calculator-keypad id="keypad" widemode="{{wideMatches || wideMode}}" standardkey="{{expression}}">  
          <paper-calculator-math id="math" expression="{{expression}}" result="{{result}}" error="{{error}}">  
            <core-media-query query="min-width: {{responsiveWidth}}" querymatches="{{wideMatches}}">  
          </paper-calculator>  
        </paper-calculator-math>  
      </paper-calculator-keypad>  
    </paper-calculator-output>  
  </div>  
</paper-calculator>
```

Inspection css

```
:host {  
  display: block;  
  position: relative;  
  background-color: #eee;  
  overflow: hidden;  
  -webkit-user-select: none;  
  -moz-user-select: none;  
  -ms-user-select: none;  
  ⚠ user-select: none;  
  -webkit-tap-highlight-color: rgba(0, 0, 0,  
    0);  
  ⚠ -webkit-touch-callout: none;  
  -webkit-font-smoothing: antialiased;  
}
```

OK CA MARCHE DANS CHROME, MAIS LES AUTRES ?

	Polyfill						
	Chrome Android	Chrome	Canary	Firefox	IE 10+	Safari 6+	Mobile Safari
Template	Working	Working	Working	Working	Limited (Unusable)	Limited (Unusable)	Limited (Unusable)
MutationObserver	Working	Working	Working	Working	Limited (Unusable) [1]	Working	Working
HTML Imports	Working	Working	Working	Working	Limited (Unusable)	Working	Working
Custom Elements	Working	Working	Working	Working	Limited (Unusable) [1]	Working	Working
Shadow DOM	Working	Working	Working	Working	Working	Working	Working
Object.observe()	Working	Working	Working	Working	Working	Working	Working
Web Animations	Working	Working	Working	Not Supported	Not Supported	Not Supported	Not Supported
Platform	Working	Working	Working	Working	Working	Working	Working
	Native implementation						
	Chrome Android	Chrome	Canary	Firefox	IE 10+	Safari 6+	Mobile Safari
Template	Working	Working	Working	Working	Not Supported	Not Supported	Not Supported
MutationObserver	Working	Working	Working	Working	Not Supported	Working	Working
HTML Imports	Not Working (Fails Tests) F	Not Working (Fails Tests) F	Working 36	Not Supported	Not Supported	Not Supported	Not Supported
Custom Elements	Working 33	Working 33	Working	Limited (Unusable)	Not Supported	Not Supported	Not Supported
Shadow DOM	Working 35	Working 35	Working 35 [2]	Not Supported	Not Supported	Not Supported	Not Supported
Object.observe()	Working 35 F	Working 35 F	Working 36	Not Supported	Not Supported	Not Supported	Not Supported
Web Animations	Not Supported	Not Supported	Limited (Unusable)	Not Supported	Not Supported	Not Supported	Not Supported
Platform	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported	Not Supported
Legend							
Working (Passes Tests)	Working	F = flag					
Limited (Useable)	Limited (Useable)						
Limited (Unusable)	Limited (Unusable)						
Not Supported	Not Supported						
Not Working (Fails Tests)	Not Working (Fails Tests)						
Unknown	Unknown						
N/A	N/A						

ALTERNATIVES À POLYMER

- Api natives
- Mozilla *x-tag* [xtags.org](https://x-tags.org)
- Bosonic bosonic.github.com

RESSOURCES

- Liste de web components:
 - webcomponents.org
 - customelements.io
- Polymer: polymer-project.org
- html5rocks: html5rocks.com

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