

Angular Elements

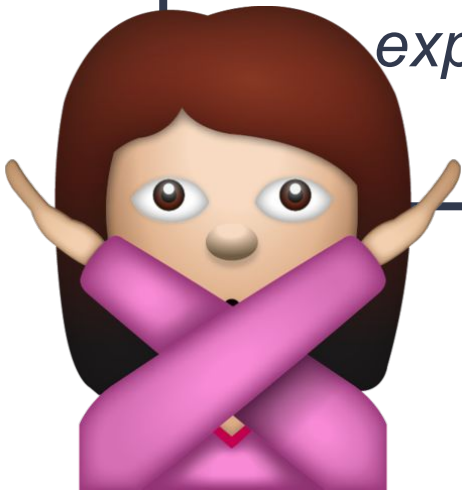
M Kusold 

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Warning

*"We're targeting v6 for an initial,
experimental release of elements."*

Rob Wormald (Google Dev Advocate)



The **experimental** release isn't even out yet.
This is nowhere near production ready.

Build Up



Announced as a part of “Angular
Labs”

By Rob Wormald

What is it?



Angular Elements are essentially
Angular Components packaged as
Custom Elements

Or in other words:
Angular Components wrapped by a Web Component so that
it can be **used outside of Angular**

Wait, what's a web component again?



WEB COMPONENTS

TEMPLATES

```
<template id="">  
</template>
```

SHADOW DOM

```
div  
  #document-fragment  
  span
```

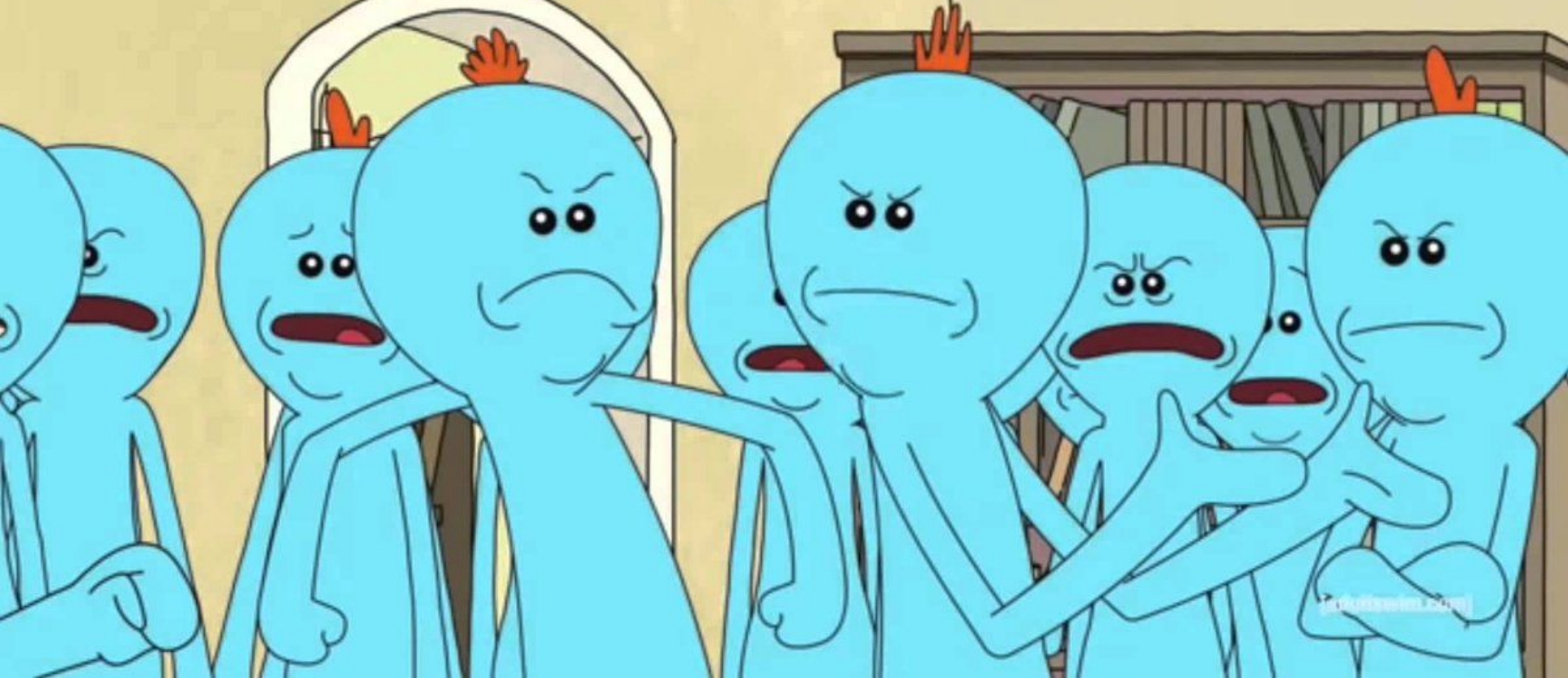
HTML IMPORTS

```
<link rel="import"  
      href="part.html">
```

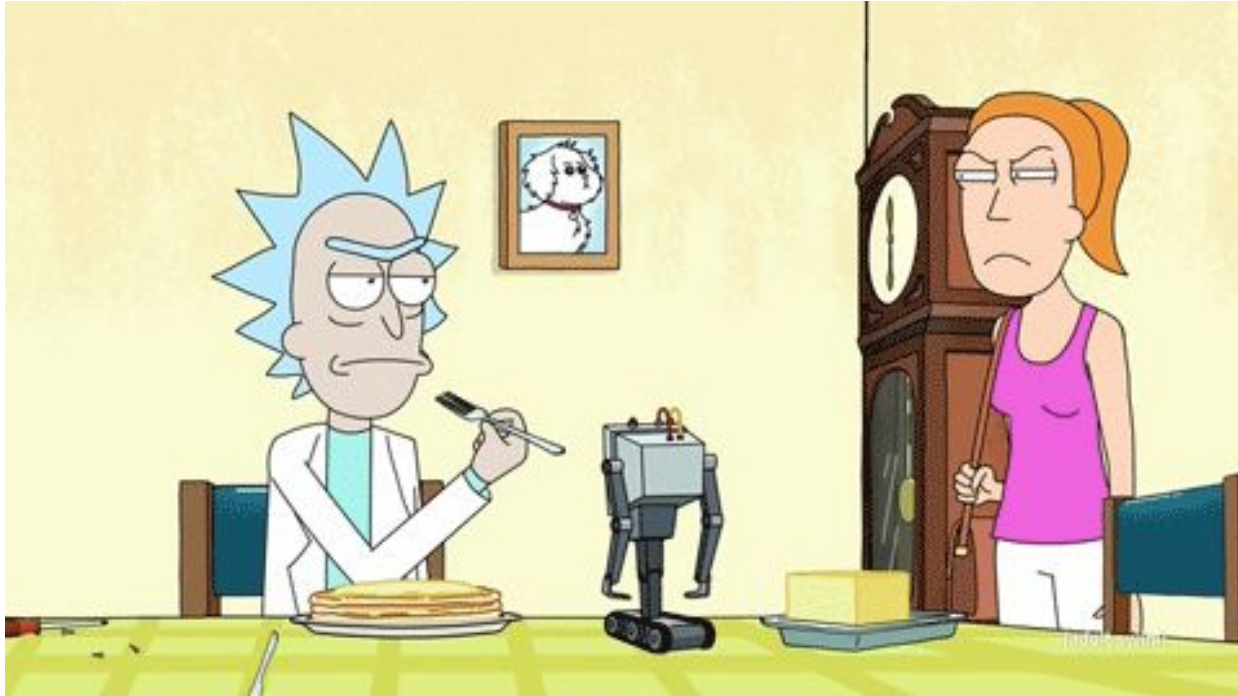
CUSTOM ELEMENTS

```
<my-elem>  
</my-elem>
```

So we can
**STOP WRITING THE SAME COMPONENTS OVER AND
OVER AGAIN**



What things would be good for this?



Can't we already do this?



WEB COMPONENTS

TEMPLATES

```
<template id="">  
</template>
```

SHADOW DOM

```
div  
  #document-fragment  
  span
```

HTML IMPORTS

```
<link rel="import"  
      href="part.html">
```

CUSTOM ELEMENTS

```
<my-elem>  
</my-elem>
```


Don't We Already Have That?

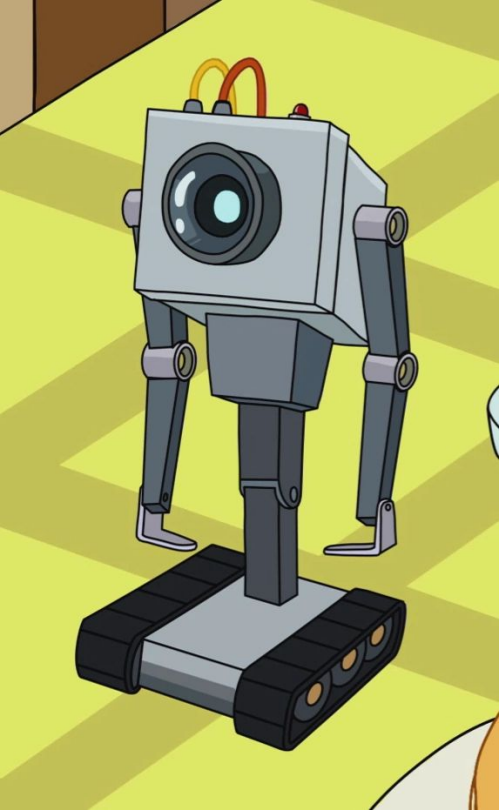
Custom Elements v1 - LS

Method of defining new HTML tags.

<div>Current aligned Usage relative Date relative Show all</div>				
IE	Edge	Firefox	Chrome	Safari
			49	
			<small>1</small> 62	
		<small>2 1</small> 57	<small>1</small> 63	
11	16	<small>2 1</small> 58	<small>1</small> 64	<small>1</small> 11
	17	<small>1</small> 59	<small>1</small> 65	<small>1</small> 11.1
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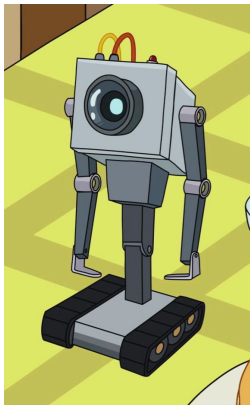


What is my purpose?



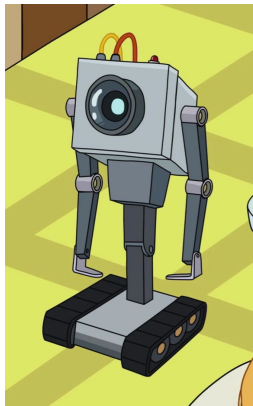
You Pass the Butter

Polymer



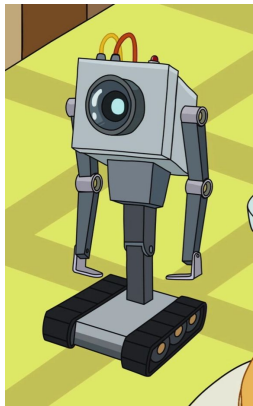
```
// boilerplate, ... (more, go to my github)
class PolymerP {
  static get ... {
    static get ... {
      return
      amount: { type
      goingRight: { ty ..., value:true }
    };
  }
  passButter() {... }
}
```

Writing an Angular Element (as of 2.27.19)



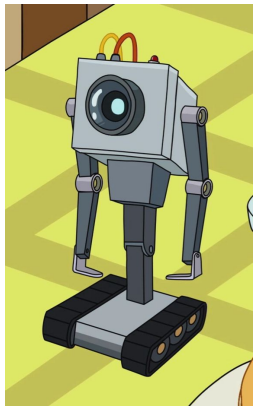
```
import {  
  ...  
  ViewEncapsulation  
} from '@angular/core';  
@Component({  
  selector: 'butter-passer',  
  template: ` div class="butter-passer">  
    <button class="command btn" (click)="passButter()">{{text}}</button>  
      
  </div>`,  
  styles: [`....`],  
  encapsulation: ViewEncapsulation.Native  
})
```

1. Write component



```
export class ButterComponent {  
  @Input() text;  
  @Output() butterPassed = new EventEmitter<string>();  
  goingRight = true;  
  ml = 0;  
  @ViewChild('butter') butterRef;  
  
  passButter() {  
    // ... lots of buttery goodness  
    this.butterPassed.emit();  
  }  
}
```

2. Write module

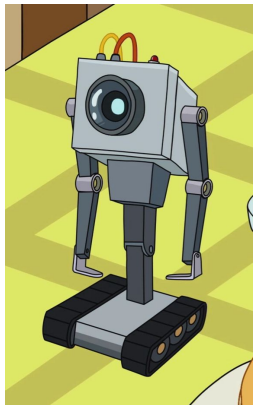


```
import { NgModule } from '@angular/core';

import { BrowserModule } from '@angular/platform-browser';
import { ButterComponent } from './butter.component';

@NgModule({
  imports: [BrowserModule],
  declarations: [ButterComponent],
  entryComponents: [ButterComponent]
})
export class ButterModule {
  ngDoBootstrap() {}
}
```

3. Register custom element



```
import 'zone.js/dist/zone';

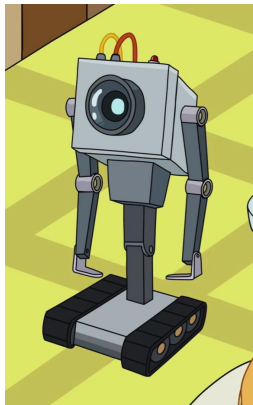
import { platformBrowserDynamic } from '@angular/platform-browser-dynamic';

import { registerAsCustomElements } from '@angular/elements';

import { ButterModule } from './butter.module';
import { ButterComponent } from './butter.component';

registerAsCustomElements([ButterComponent], () =>
  platformBrowserDynamic().bootstrapModule(ButterModule)
);
```


4. Use it



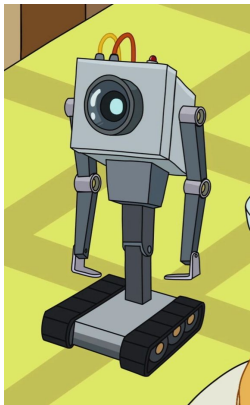
```
<!-- Angular Element -->
```

```
<script src="./angular-element.bundle.js"></script>
```

```
...
```

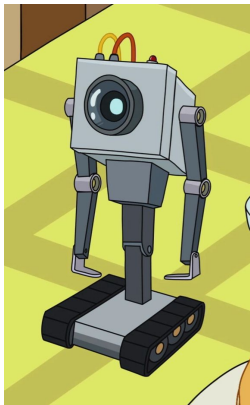
```
<butter-passer text="Pass the Butter" imgSrc="./images/butter-bot.png"></butter-passer>
```

Using it in Vue



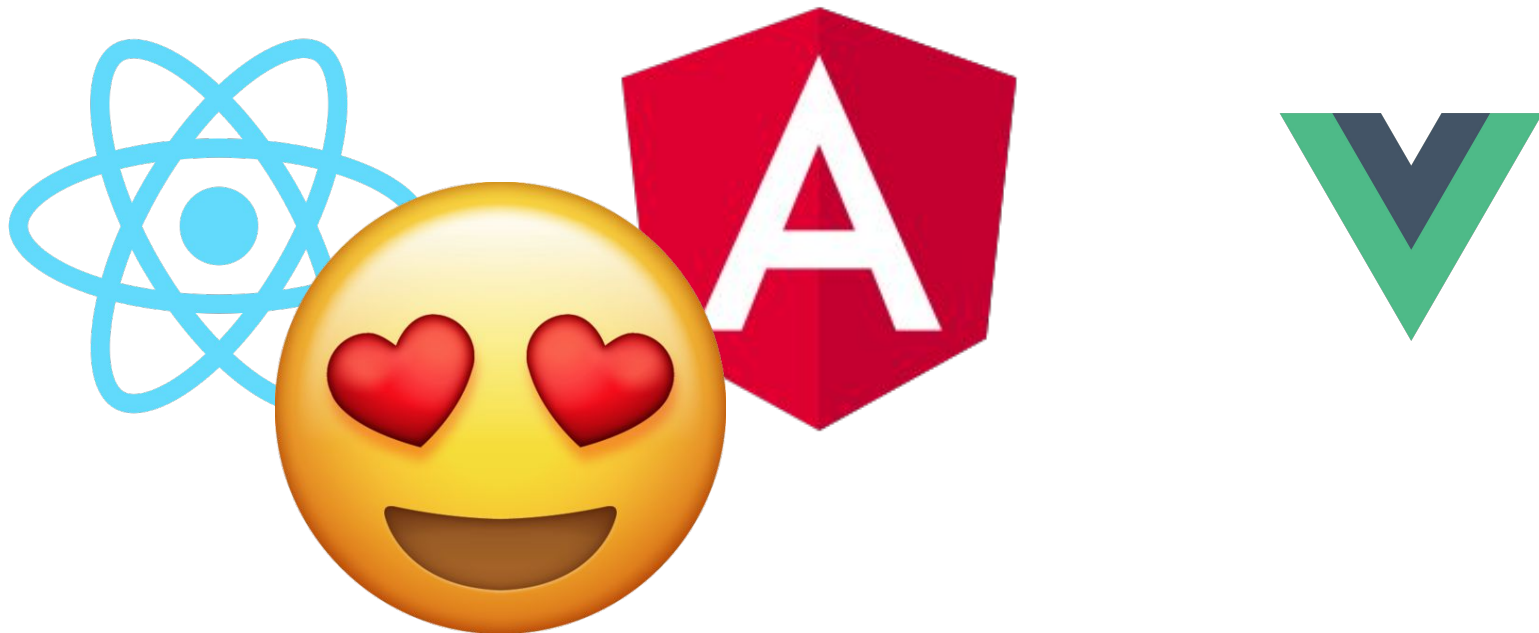
```
<!-- index.html -->
<body>
  <div id="vue-app"></div>
  <!-- built files will be auto injected -->
  <script src="angular-element.bundle.js"></script>
</body>
```

Using it in Vue

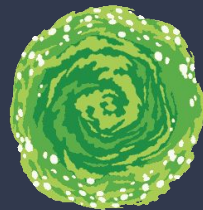


```
// App.vue
<template>
  <div>
    <h1>VUE!</h1>
    <butter-passer v-bind:text="text"></butter-passer>
  </div>
</template>
<script>
export default {
  name: 'vue-app',
  data() { return { text: "Pass the Butter" }; },
  methods: { }
};
</script>
```

React, Angular, & Anything else



Looking Into the *Future*



“We’re targeting v6 for an initial, experimental release of elements. We’ll be validating it with Angular.io, and aim to solve that use case first.”

“The current codebase is on the labs/elements branch - <https://github.com/angular/angular/tree/labs/elements/packages/elements/> but we expect to merge it to master shortly, pending initial docs.”

“We want to be open about what we’re doing, but set the expectation this is not production ready yet. We’ll have some basic docs for the initial release, and full documentation and integration when it graduates from Labs status.”

Questions?

Github Page:

<https://michellekusold.github.io/angular-elements-presentation/>

Code:

<https://github.com/michellekusold/angular-elements-presentation>



References

Rom Wormald's Latest Update:

<https://github.com/angular/angular/issues/20891>

Rom Wormald's Initial Presentation:

<https://www.youtube.com/watch?v=ljsOPm4MMEo&feature=youtu.be>

Wormald's Proof of Concept:

<https://github.com/robwormald/angular-elements>

Great Demo:

<https://github.com/vogloblinsky/angular-elements-demo>

Andrei Antal:

https://www.youtube.com/watch?v=-pS8M_RBf84

Andrei Antal's Demo:

<https://github.com/andrei-antal/ng-europe-demo-angular-elements>