

CSS in Native

CSSConf Guangzhou 2016

Self Introduction

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- twitter.com/zhaojinjiang
- **weex** 
-



[clock]

What is Weex ?



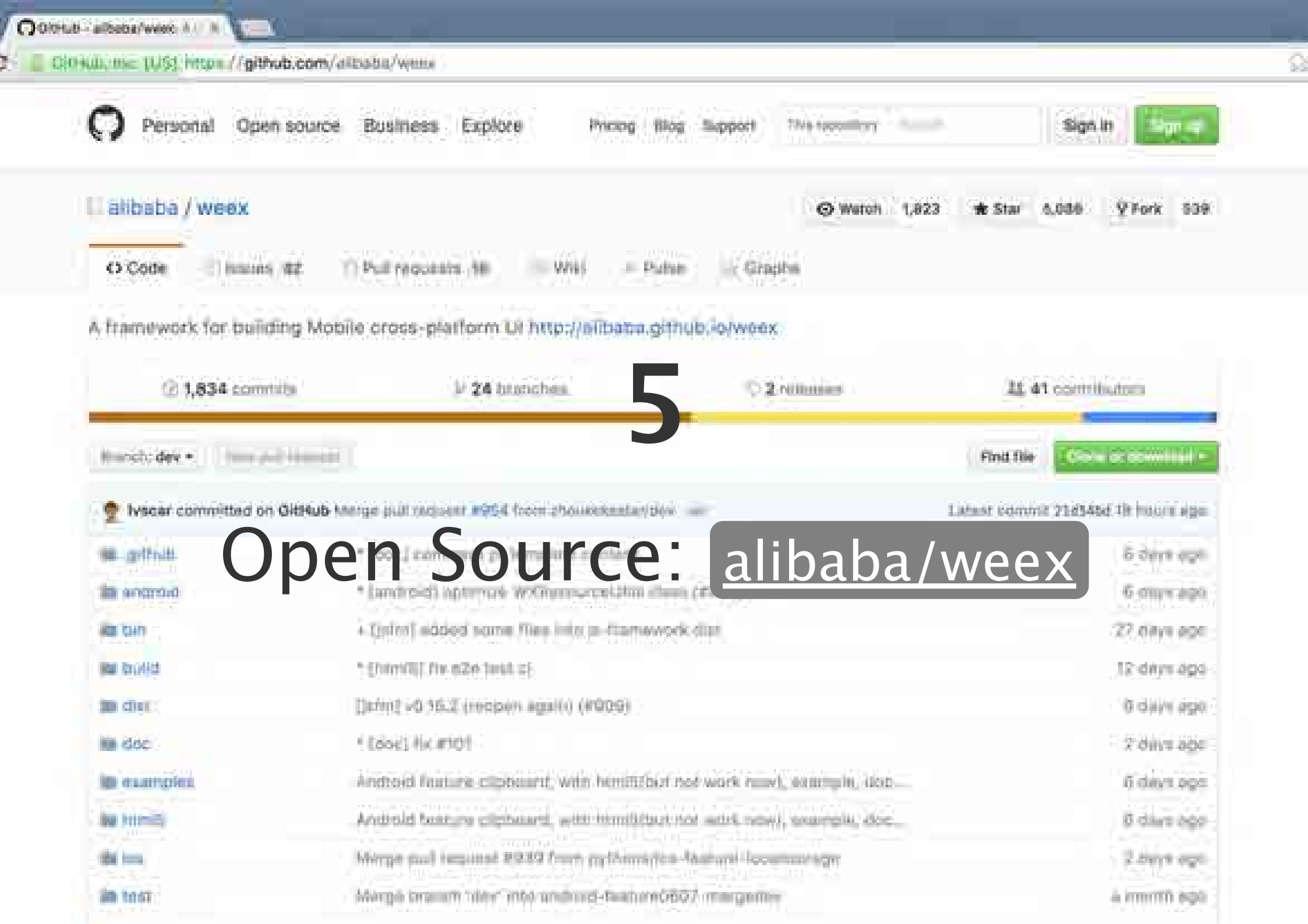
A woman wearing a red sari is holding a smartphone in her right hand. She is looking at the screen. The background is a brightly lit, blurred indoor space, possibly a mall or a public area, with various lights and structures visible. The overall scene is out of focus, emphasizing the woman and her phone.

1

Build Dynamic Mobile App



Native View & Device Power



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alibaba / weex

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Code

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Pull requests 18

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Graphs

A framework for building Mobile cross-platform UI <http://alibaba.github.io/weex>

1,834 commits

24 branches

5

2 releases

41 contributors

branch: dev

View all commits

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lvscar committed on GitHub · Merge pull request #924 from zhoubekstar/dev · Latest commit 21d545d 18 hours ago

File	Commit Message	Time
github	[github] commit	6 days ago
android	* [android] improve widgetResourceName class (f	6 days ago
bin	+ [bin] added some files into js-framework-dist	27 days ago
build	* [build] fix a2e test c)	12 days ago
dist	[dist] v0.16.2 (reopen again) (#909)	8 days ago
doc	* [doc] fix a10)	2 days ago
examples	Android feature clipboard, with hmitfbur not work now, example, doc	6 days ago
hmitfb	Android feature clipboard, with hmitfbur not work now, example, doc	8 days ago
ios	Merge pull request #923 from mathematics-factory/feature-ios	2 days ago
test	Merge branch 'dev' into android-feature0507-merge	4 months ago

Open Source: alibaba/weex

[clock]

How We use CSS?

Every native view has its style

The image shows the Xcode interface with a storyboard on the left and the 'Inspector' panel on the right. The 'Inspector' panel is set to 'Label' and displays the following settings:

- Text:** Plain
- Color:** Default
- Font:** System 17.0
- Alignment:** Left
- Line:** 1
- Behavior:** Enabled
- Highlighted:** Default
- Baseline:** Align Baselines
- Line Break:** Truncate Tail
- Accessibility:** Fixed Font Size, Tighten Letter Spacing
- Highlighted:** Default
- Shadow:** Default
- View:**
 - Content Mode:** Left
 - Semantic:** Unspecified
 - Tag:** 0
 - Interaction:** User Interaction Enabled, Multiple Touch
 - Alpha:** 1
 - Background:** (Color swatch)
 - Text:** Default
 - Drawing:** Opaque, Hidden, Clear Graphics Context, Clip To Bounds

In Compiler

Transform HTML/CSS code
into JSON first.

In JS Runtime

Send JSON to native render
through JavaScript

Dev

*.web



↓ transform



Deploy

*.js

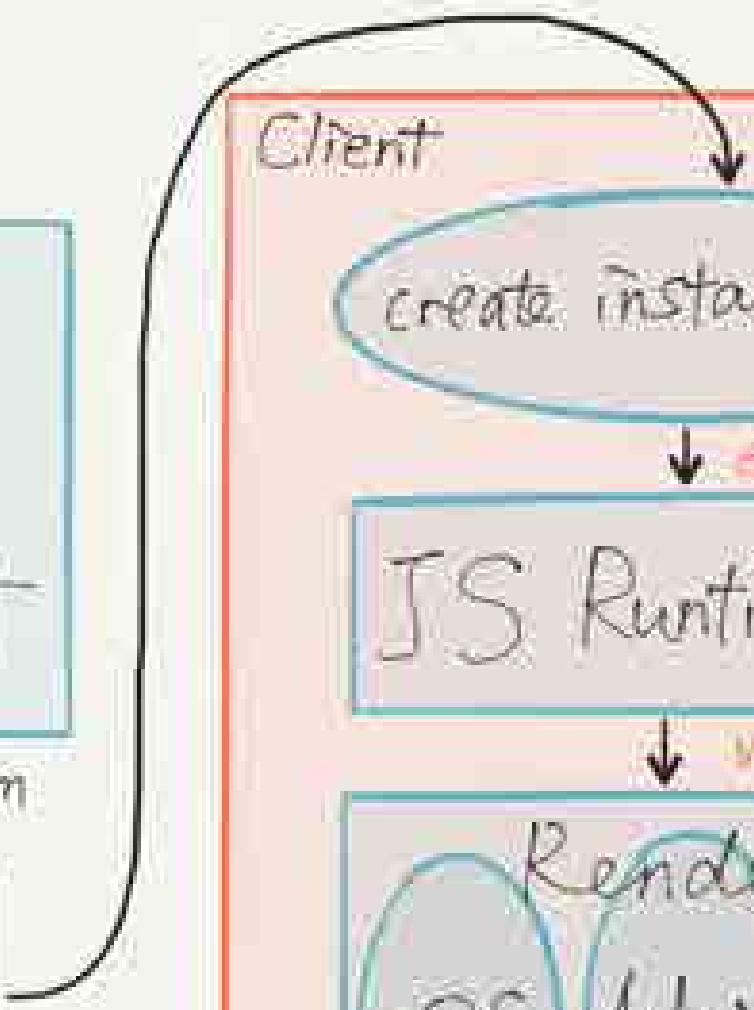
Client



↓ evaluate



↓ virtual-DOM



[clock]

We Have Two Ways

Mode A: inline style

```
<template>  
  <div style="width: 200">  
</template>
```

Final native call

```
nativeDom.createBody({  
  type: 'div',  
  style: {  
    width: 200  
  }  
})
```

Mode B: <style>

```
<template>
```

```
  <div class="foo">
```

```
</template>
```

```
<style>
```

```
  .foo { width: 200; }
```

```
</style>
```

```
const $style = {  
  foo: { width: 200 }  
}  
  
nativeDom.createBody({  
  type: 'div',  
  style: $style.foo  
})
```

Final native call

```
nativeDom.createBody({  
  type: 'div',  
  style: {  
    width: 200  
  }  
})
```

Mode A & Mode B

CSS -> JSON -> Native View

Mode A & Mode B

- familiar [smile]
- fast [smile]
- scoped [smile]

[clock]

Something Else

Support More Length Units?

```
<template>
```

```
  <div style="width: 100vw;"></div>
```

```
</template>
```

define CSS_UNIT

in runtime

VW: $\langle \text{px of viewport} \rangle / 100$

Compile CSS Values before runtime

`100vw` \rightarrow `100 * CSS_UNIT.VW`

Final native call

```
nativeDom.createBody({  
  type: 'div',  
  style: {  
    width: 100 * CSS_UNIT.VW  
  }  
})
```

**How much CSS does
Weex support?**

refs: <https://www.chromestatus.com/metrics/feature/popularity> 2016-12-11

percentage	name	supported
90.5115%	display	✗ flex by force
89.8243%	margin	✓ (not support combo)
88.7012%	width	✓
88.6468%	overflow	✓ iOS only, hidden by force for Android
88.6432%	background-color	✓
88.0803%	height	✓
87.7648%	font-size	✓
87.3837%	padding	✓
87.2721%	color	✓
86.9788%	text-align	✓
86.6841%	position	✓ relative by default, static not supp
86.6039%	font-family	✓
86.5943%	font-weight	✓

Weex CSS Status

Some Details

- flexbox
- border-box only
- position: sticky | fixed
- no float

Feature Requested Most

- display: none
- background-image
- flex-wrap
- text-shadow | box-shadow

CSS Inheritance?

A person in a yellow and red space suit is floating in a space station. The background shows various equipment, cables, and a window with a view of Earth. The person is looking towards the camera.

Ref: [Fix Global CSS with PostCSS](#)

Weex do not inherit anything.

`all: initial by default`

Support PostCSS

by vue-loader

[clock]

Demo

[clock]

In Developing...

1) Viewport

```
<head>  
  <meta  
    name="viewport"  
    content="width=device-width">  
</head>
```

Final native call

```
nativeMeta.setViewport({  
  width: 'device-width'  
})
```

```
<head>  
  <meta  
    name="viewport"  
    content="width=750">  
</head>
```

Final native call

```
nativeMeta.setViewport({  
    width: 750  
})
```


[clock]

2) Pseudo Class

Problem

```
<template>
```

```
  <div>
```

```
    <text
```

```
      style="color: red;"
```

```
      ontouchstart="start"
```

```
      ontouchend="end">Touch! </text>
```

```
  </div>
```

```
</template>
```

And bind events:

```
function start (e) {  
    e.target.style.color = 'blue'  
}  
  
function end (e) {  
    e.target.style.color = 'red'  
}
```

How About Using Pseudo Class to remove JS Events?

Step 1

Support **color:active** style in native view.

Respond natively.

(without JS events)

Step 2

And **transform** pseudo class into them ...


```
<template>
```

```
  <div>
```

```
    <text class="foo"></text>
```

```
  </div>
```

```
</template>
```

```
<style>
```

```
  .foo { color: red; }
```

```
  .foo:active { color: blue; }
```

```
</style>
```

After **transform** ...

```
<template>
```

```
  <div>
```

```
    <text class="foo"></text>
```

```
  </div>
```

```
</template>
```

```
<style>
```

```
  .foo { color: red; }
```

```
  .foo { color:active: blue; }
```

```
</style>
```

Final native call

```
nativeDom.createBody({  
  type: 'div',  
  style: {  
    color: 'red',  
    'color:active': 'blue'  
  }  
})
```

[clock]

3) Pseudo Element?

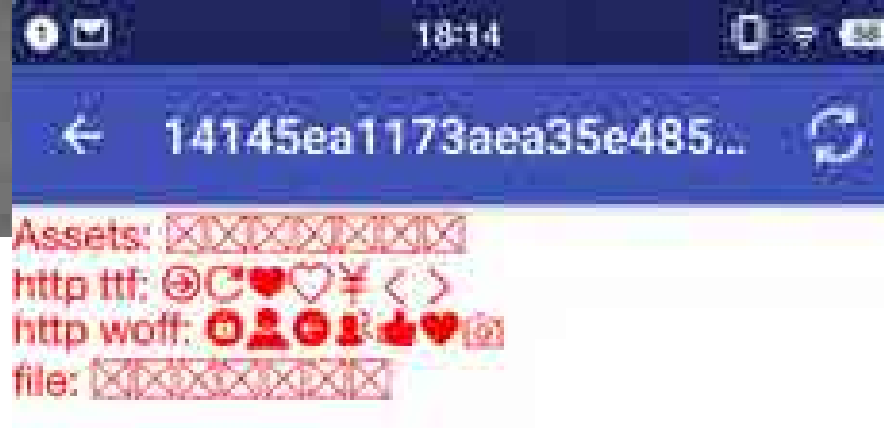
to draw a triangle

in Web Platform

```
tooltip::after {  
    content: "";  
    position: absolute;  
    border: 5px solid transparent;  
    border-left-color: black;  
}
```

We Recommend SVG!


```
<svg height="10" width="10">  
  <polygon  
    points="0,0 0,10 5,5"  
    style="fill:black;">  
  </polygon>  
</svg>
```



4) Icon Font

5) Transition

Demo 2

Conclusion

- familiar / fast / scoped
- more units
- status of CSS support
- no inheritance
- PostCSS
- Viewport[ing]/ Pseudo Class[ing]
- SVG[ing]/ IconFont[ing]/ Transition[ing]

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One More Thing...



incubator-general mailing list archives: November 2016

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Box list

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Message list

Mattmann, Chris A (3010)	Re: Github tagging, was Re: [VOTE] Release A
Jim Apple	Re: Github tagging, was Re: [VOTE] Release Apc
Ian Dunlop	Re: Github tagging, was Re: [VOTE] Release A
Edward J. Yoon	[RESULT][VOTE] Weex to enter the Apache Incubator
John D. Ament	[DISCUSS] Moving new podling requests to a dedicated
John D. Ament	[DISCUSS] Revisions to Policy
Mattmann, Chris A (3010)	Re: Github tagging, was Re: [VOTE] Release A

Permalink (Message view)

From "Edward J. Yoon" <edward.y...@samsung.com>
Subject [RESULT][VOTE] Weex to enter the Apache Incubator
Date Tue, 29 Nov 2016 21:46:15 GMT

Thanks all.

This vote passes with 8 binding +1s, 9 non-binding +1s, and no -1.

Thanks

github: [alibaba/weex](https://github.com/alibaba/weex)

