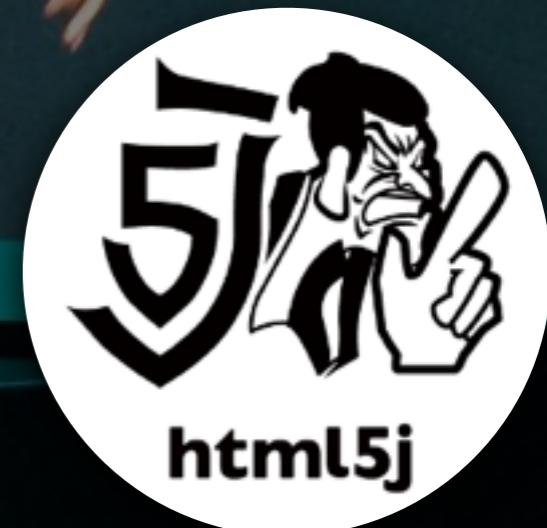


Material Design with Polymer

2014-07-28 第49回 HTML5とか勉強会

Ayumu Sato @ahomu



さとう

あゆむ

佐藤 歩



ハンドルネーム

@ahomu



100人くらいかと思ってたら
350人募集でビビってます。

Profile

- ・ 株式会社サイバーエージェント
- ・ Webフロントエンドエンジニア
- ・ PHP + SE → Frontend + Node + Android + AWS
- ・ HTML5 Experts.jp における幽霊部員のひとり
- ・ 最近の悩みは、社内でオッサンに見られること（アラサー）



Speaker Deck

Search...

Browse

Upload



Ayumu Sato

Talks by Ayumu Sato

フロントエンドの
スキルマップと
育成のはなし



Ayumu Sato

June 21, 2014 Frontend in Nagoya

フロントエンドのスキル
マップと育成のはなし

Jun 21, 2014 by Ayumu Sato



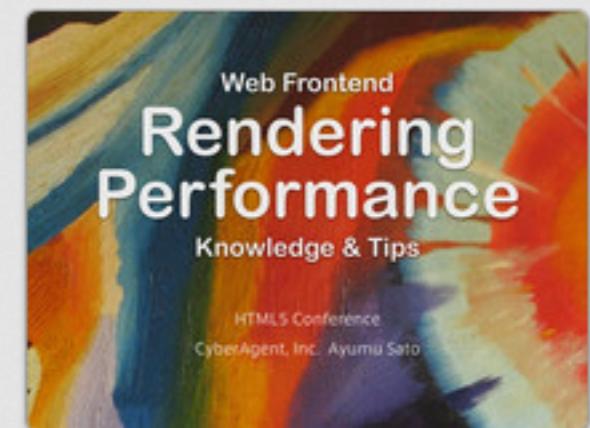
Web Frontend
Performance Tuning TIPS
*n

Jan 25, 2014 by Ayumu Sato



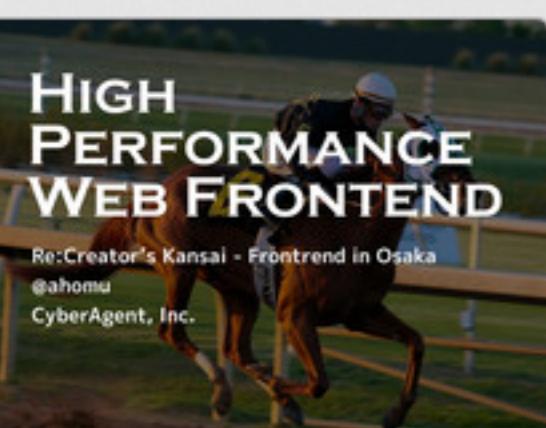
俺的フロントレンド
2013総括

Dec 18, 2013 by Ayumu Sato



Web Frontend Rendering
Performance Knowledge
& Tips

Nov 30, 2013 by Ayumu Sato



High Performance Web
Frontend 2013 秋

Sep 14, 2013 by Ayumu Sato



jQuery to Backbone 2

Jun 8, 2013 by Ayumu Sato



Stylusが目指す
CSSプリプロセッサ

Jan 12, 2013 by Ayumu Sato



ビルドプロセスの自動化
で効率アップ

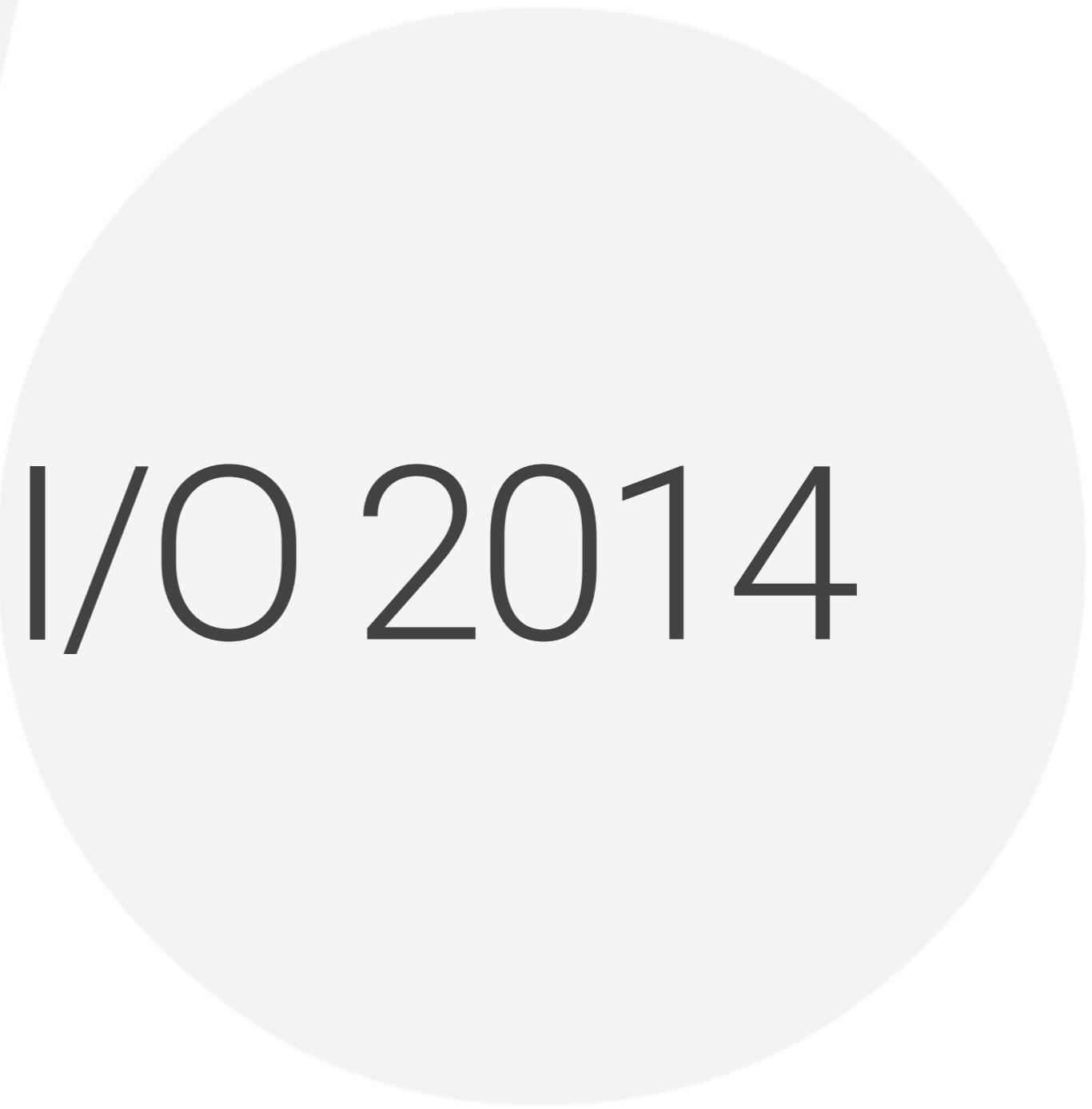
Nov 10, 2012 by Ayumu Sato

Agenda

- Google I/O の感想
- Material Design のおさらい
 - コンセプト
 - ガイドラインのサマリー
- Web で使う
 - Polymer
 - Papaer Elements



Google I/O 2014



初 · Google I/O

Google

ちゃんと参加しました

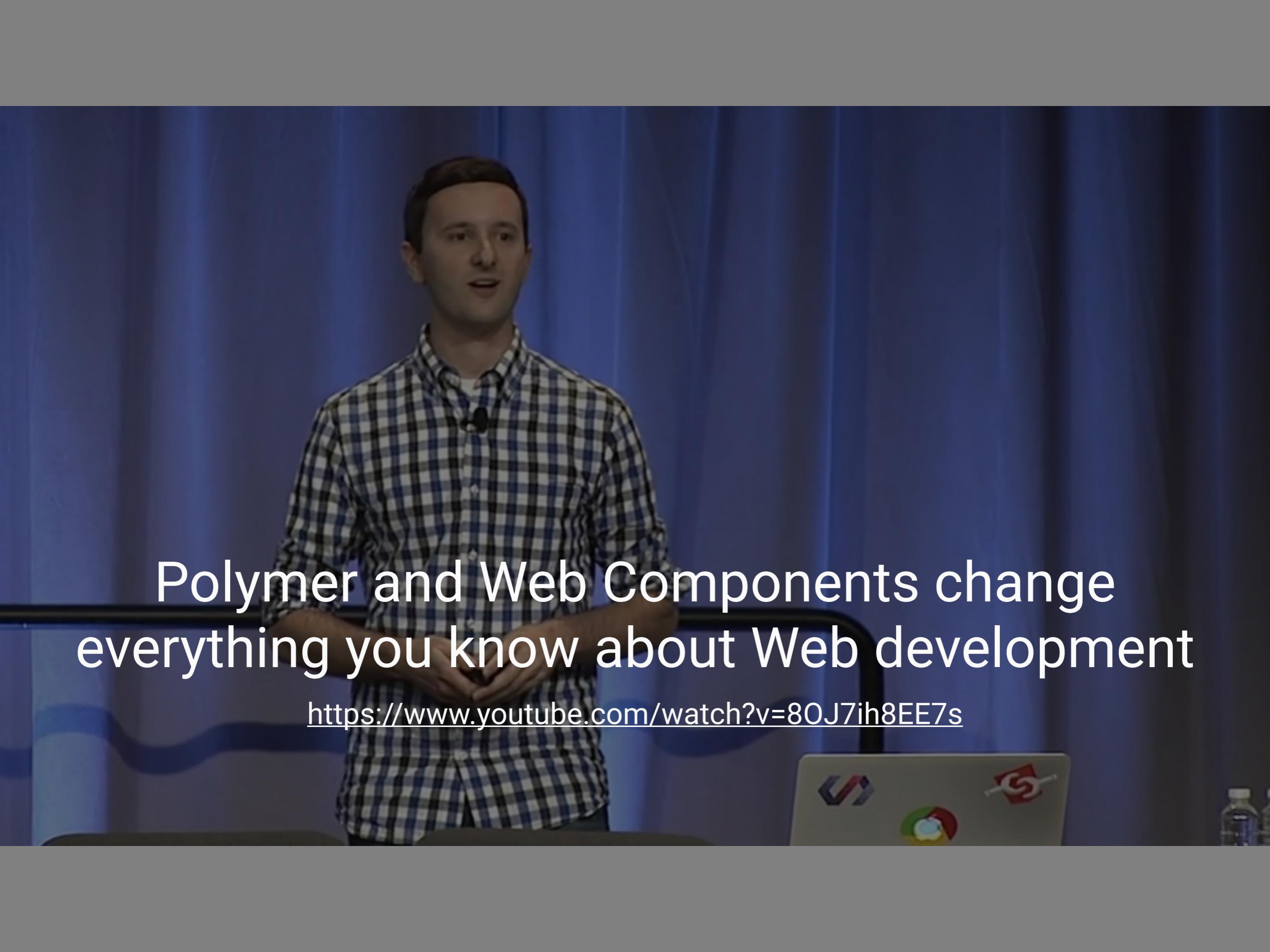
Registration からして英会話力の無さを痛感

Ayumi

Sato

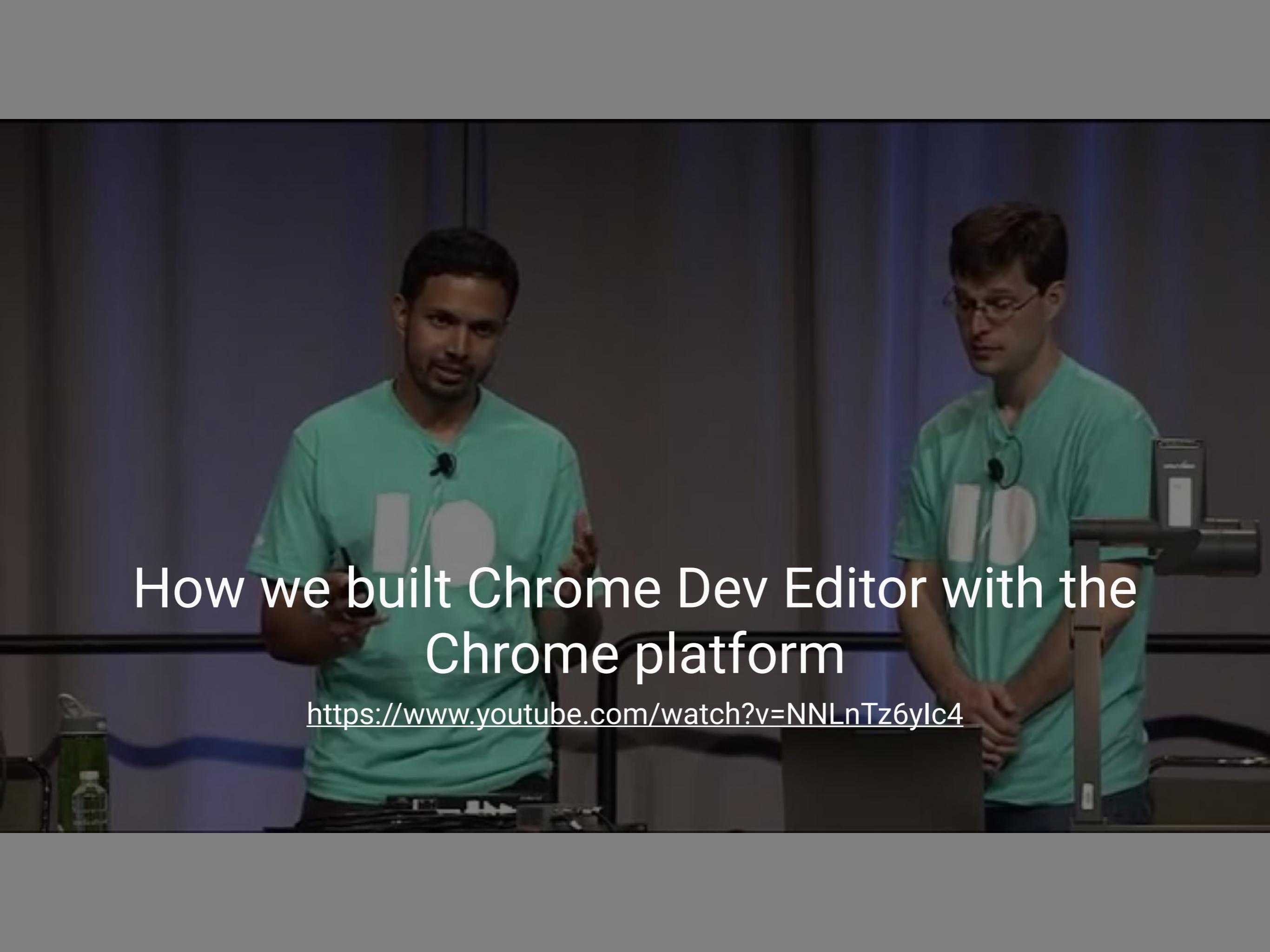
英語が達者ではないので
字幕席のお世話に

あとは雰囲気で／(^o^)\＼

A medium shot of a man with short brown hair, wearing a blue and white plaid long-sleeved shirt over a white t-shirt. He is standing behind a dark wooden podium, looking slightly to his left with a neutral expression. The background is a solid blue.

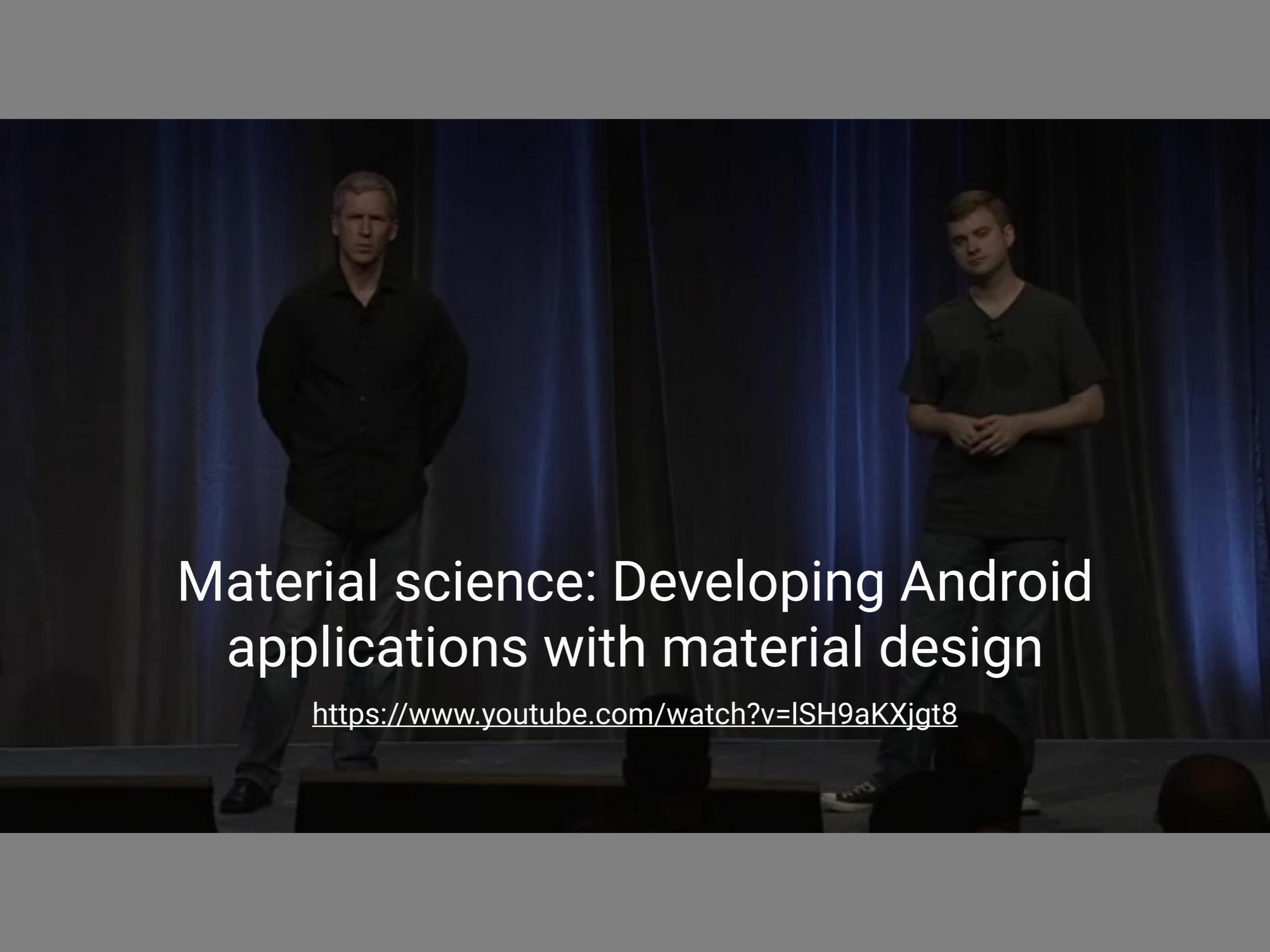
Polymer and Web Components change
everything you know about Web development

<https://www.youtube.com/watch?v=80J7ih8EE7s>

A photograph of two men in green t-shirts standing behind a dark wooden podium. The man on the left is looking towards the camera, while the man on the right is looking down at the podium. A small water bottle is visible on the left side of the podium.

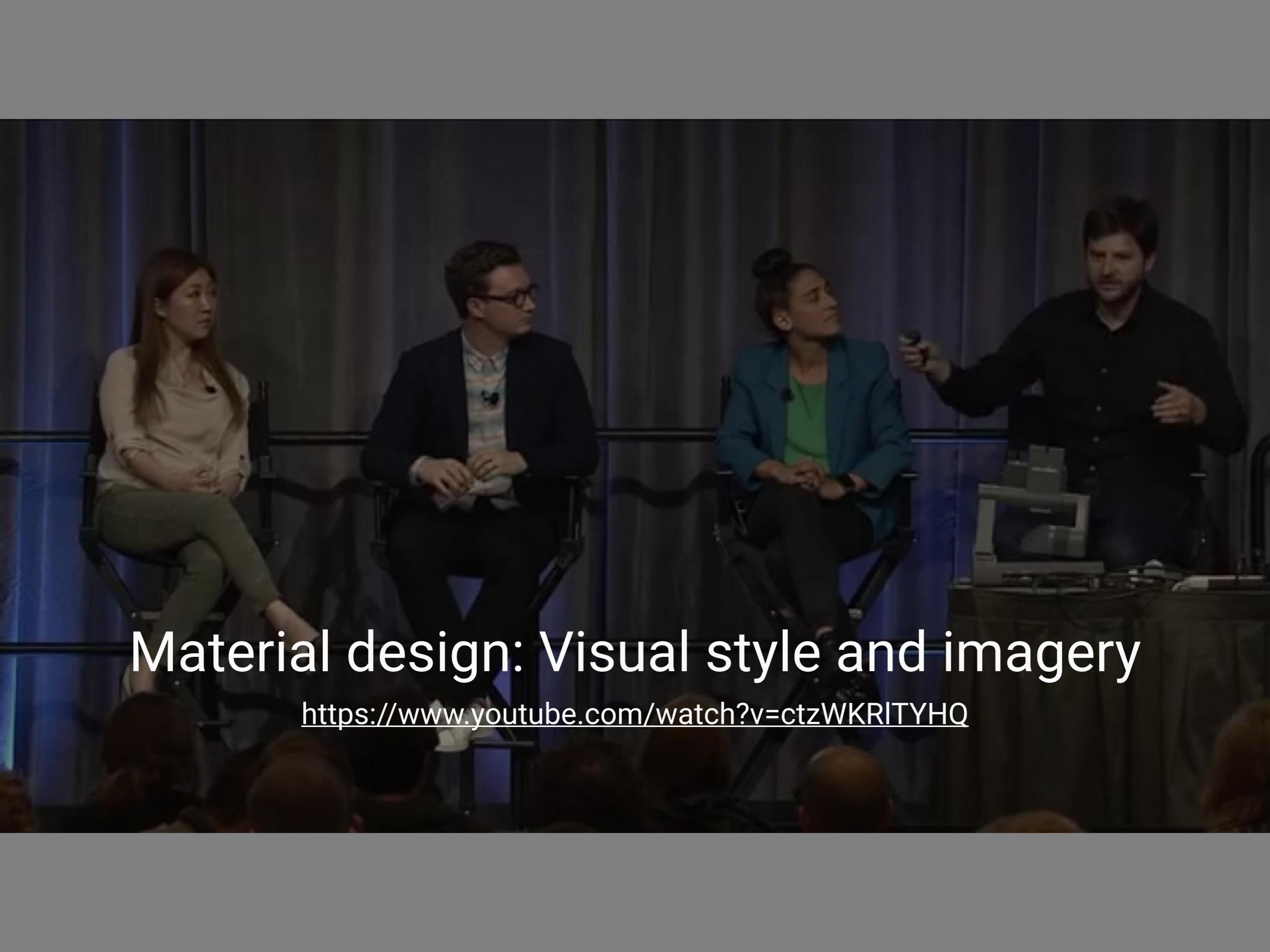
How we built Chrome Dev Editor with the Chrome platform

<https://www.youtube.com/watch?v=NNLnTz6ylc4>

A dark, semi-transparent background image showing two men standing on a stage. One man is on the left, wearing a black shirt and dark pants, looking towards the camera. The other man is on the right, wearing a dark t-shirt and dark pants, also looking towards the camera. They are positioned in front of a dark curtain with vertical stripes.

Material science: Developing Android applications with material design

<https://www.youtube.com/watch?v=lSH9aKXjgt8>

A photograph of a panel discussion on stage. Four people are seated in chairs, facing an audience. From left to right: a woman with long brown hair in a light-colored top; a man with glasses and a dark blazer over a patterned shirt; a woman with her hair in a bun wearing a teal jacket over a green top; and a man with a beard in a black shirt. A microphone stand is positioned in front of the woman in teal. The background is dark with vertical panels.

Material design: Visual style and imagery

<https://www.youtube.com/watch?v=ctzWKRITYHQ>



Material design: Motion

<https://www.youtube.com/watch?v=FBD0VlcVS1E>

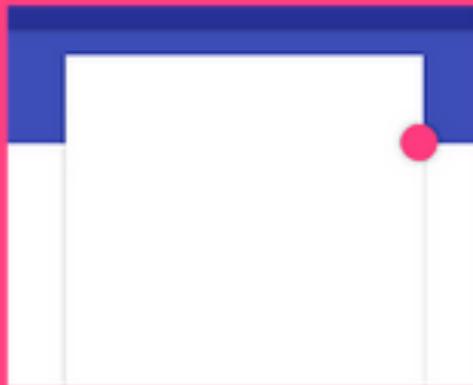
とても意識が高まりました
(小並感)

Material Design

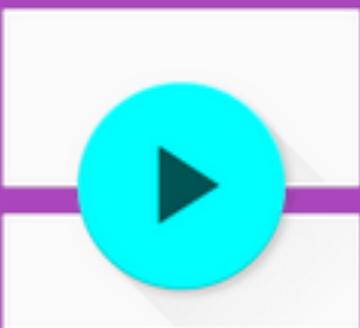
マテリアルデザイン

Android ?

HTML5 とか



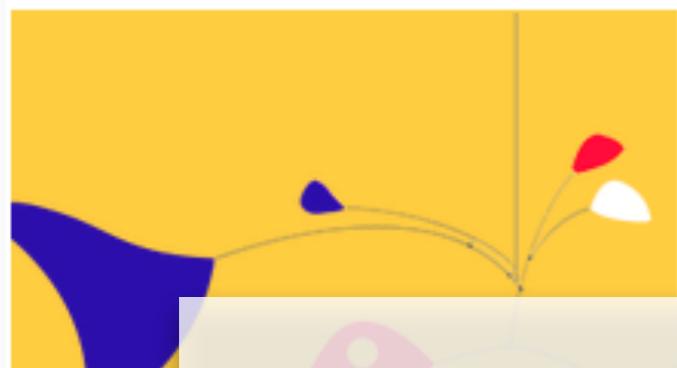
Google Guidelines



Material Design
Reel



Material Design
PDF



Doodle Archive

Join the Discussion
<http://www.google.com/design/>



Design Minutes



Google Cast UX



Glass Design



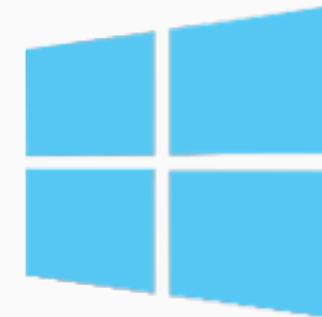
Google Web Designer

目的

さまざまな環境で
統一された体験を実現する

across Platforms

- Android
- iOS
- All browsers...

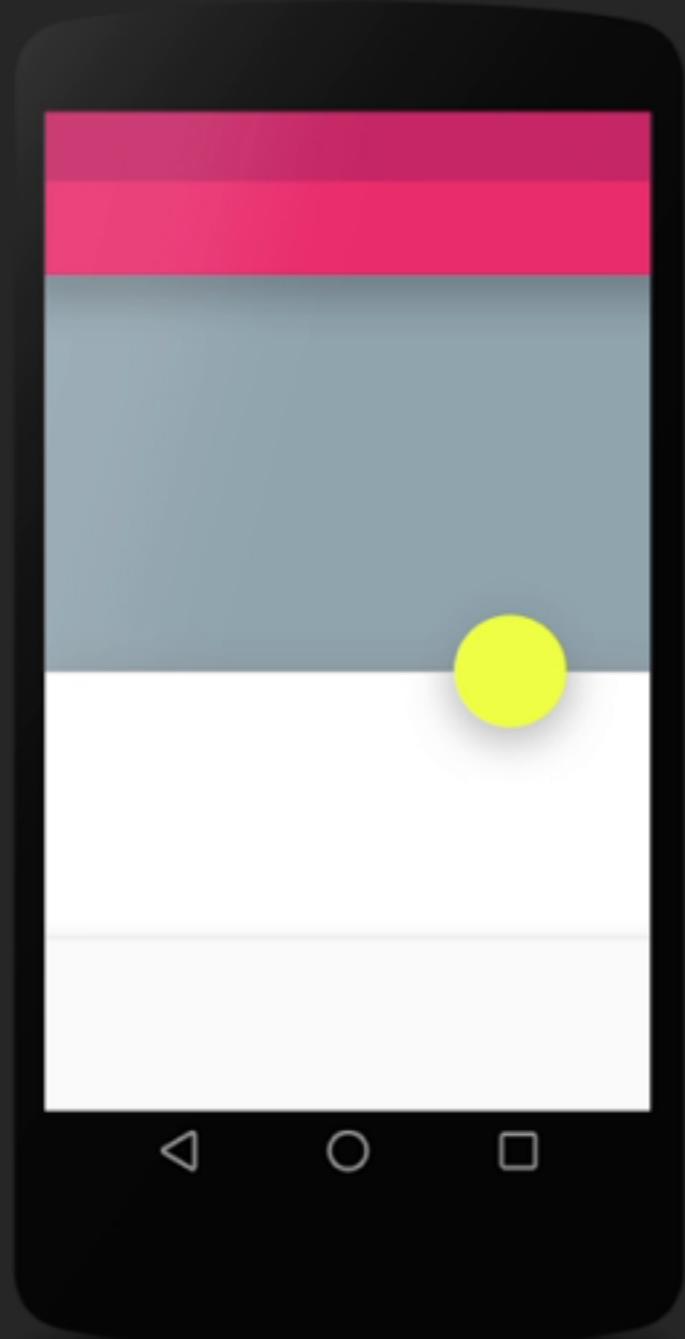


across Devices

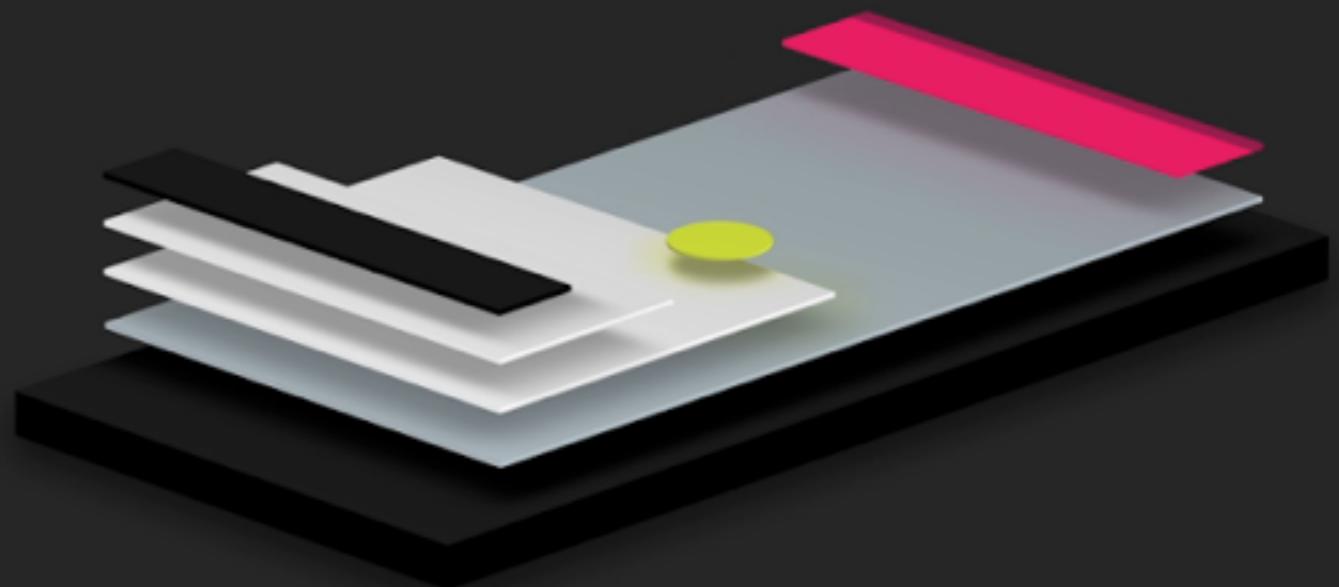
- Smartphone
- Tablet
- Wearable
- Automobile
- All PCs...



Material is the metaphor



Design metaphor
inspired by paper and ink



伝統的なグラフィックデザイン

近代技術によるイノベーション

6.626069×10^{-34}

THIN

One hundred percent cotton bond

BOLD ITALIC

Quasiparticles

BOLD

It became the non-relativistic limit of quantum field theory

CONDENSED

PAPER CRAFT

LIGHT ITALIC

Probabilistic wave - particle wavefunction orbital path

MEDIUM ITALIC

ENTANGLED

BLACK

Cardstock 80lb ultra-bright orange

MEDIUM

STATIONARY

Principles





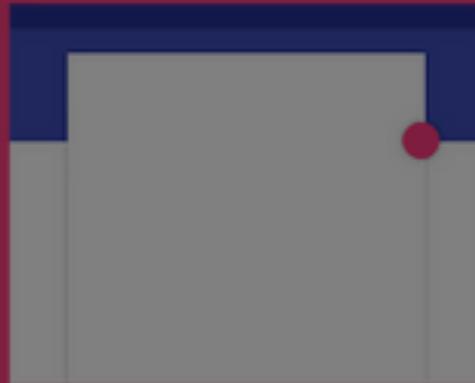
Material is the metaphor



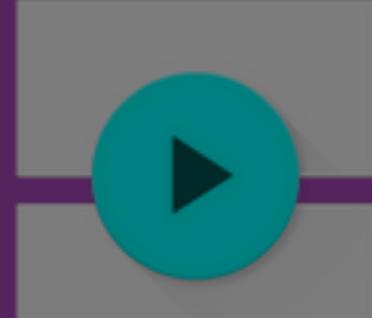
Bold, graphic, intentional



Motion provides meaning



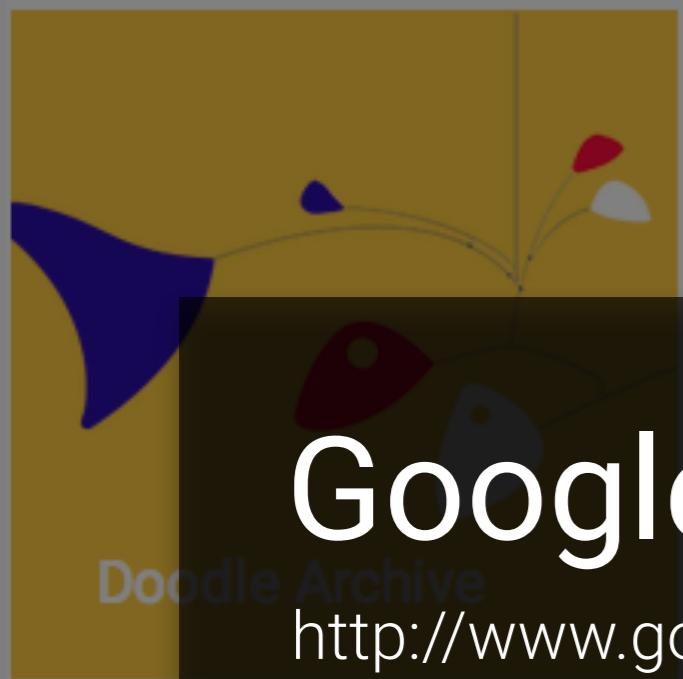
Google Guidelines



Material Design
Reel



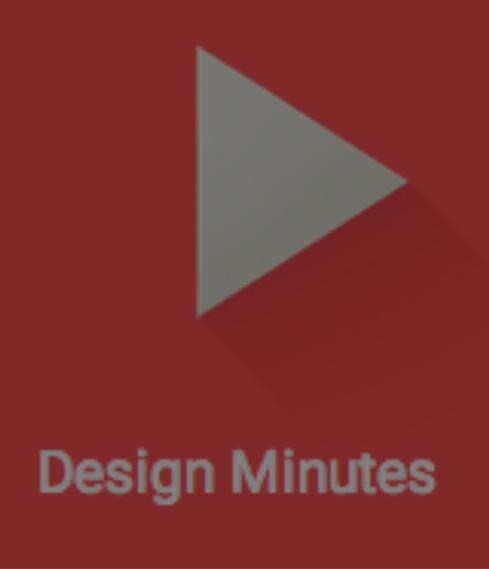
Material Design
PDF



Google Design
<http://www.google.com/design/>



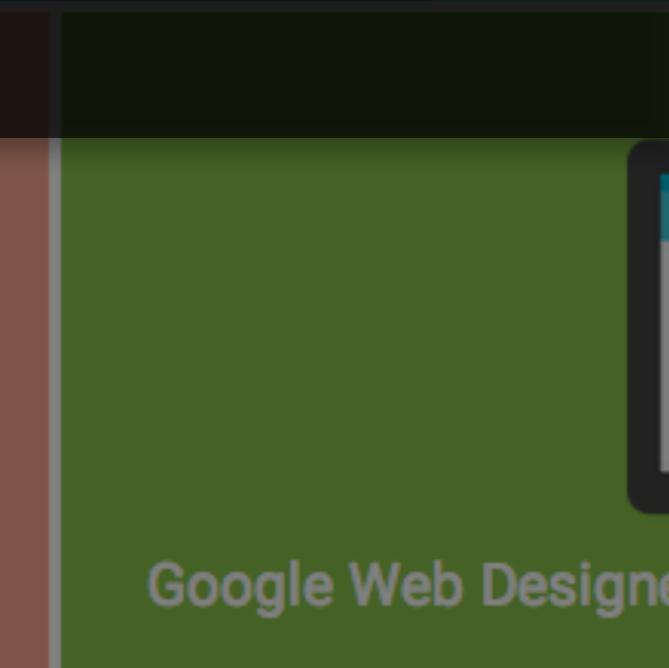
Google Cast UX

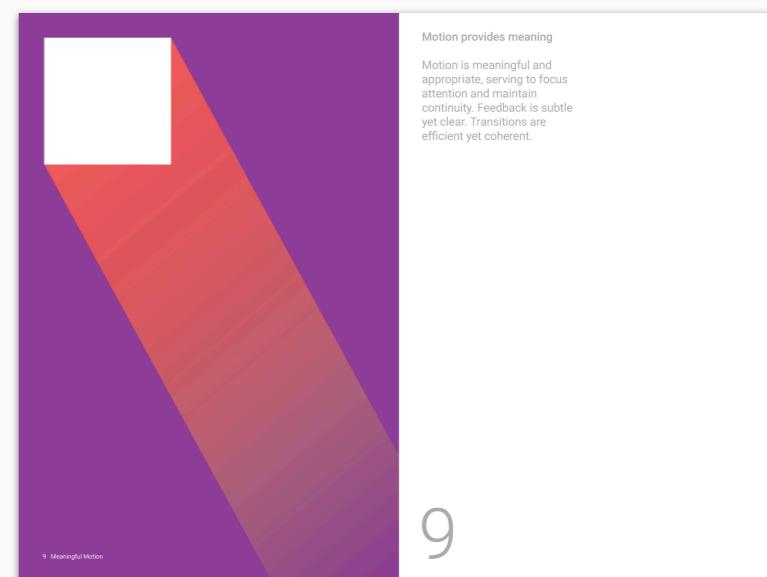
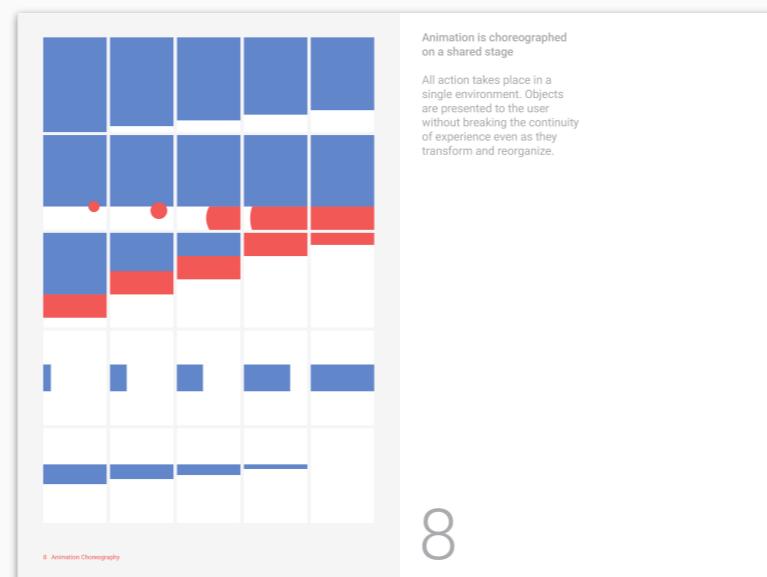
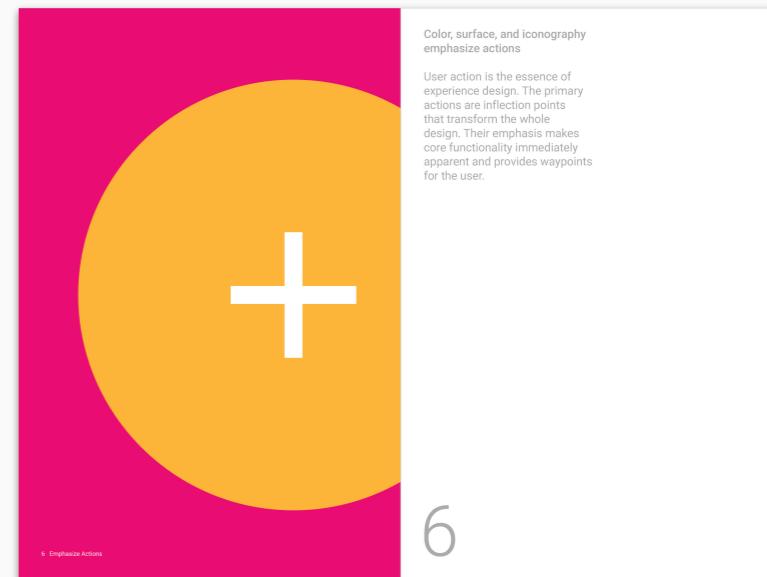
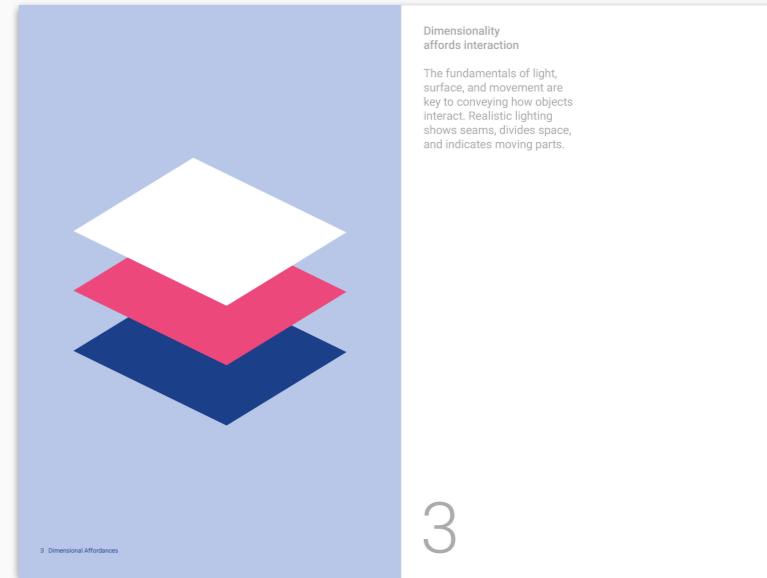
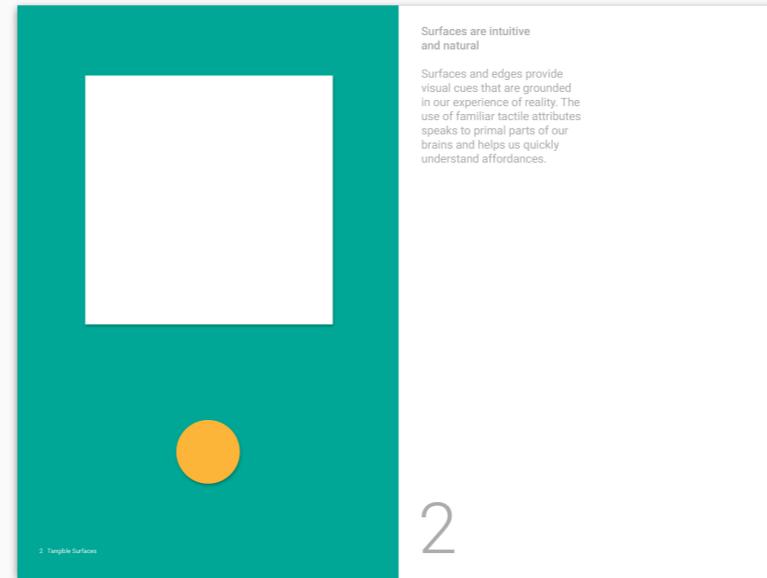
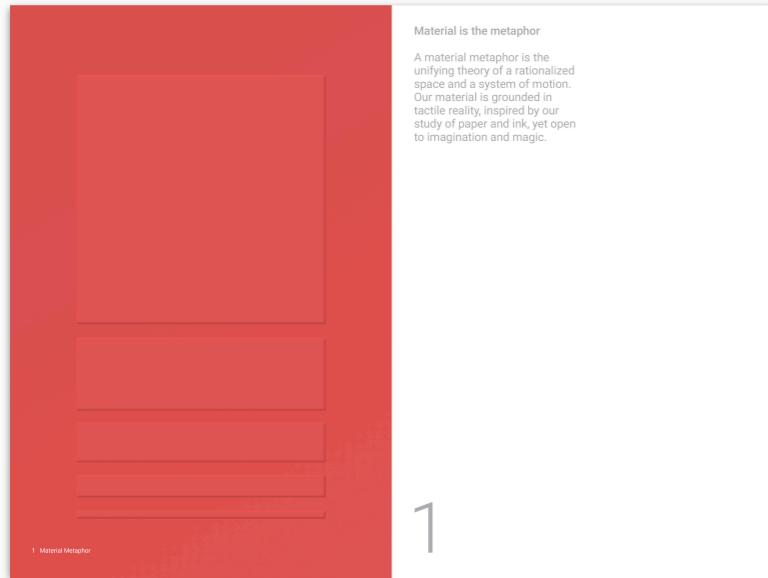


Google Web Designer



Glass Design





Guidelines

- **Animation**
- Style
- Layout
- Components
- Patterns
- Usability
- Resources

Authentic Motion

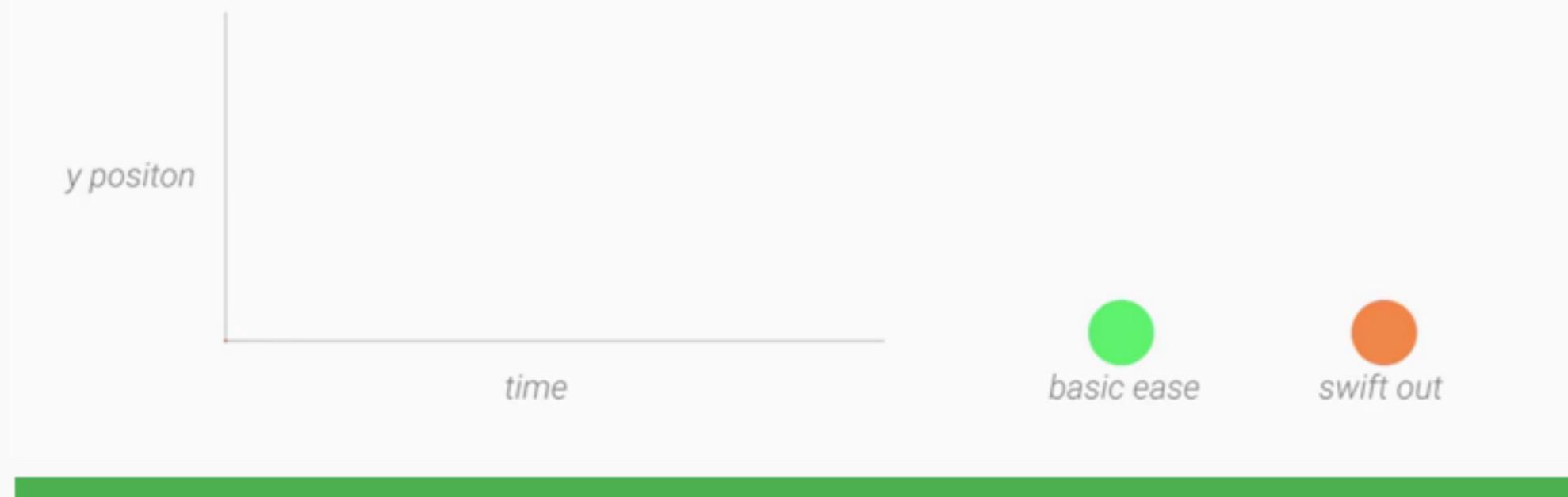
Responsive Interaction

Meaningful Transitions

Delightful Detail

Best Practices

A critical aspect of motion for material design is to retain the feeling of physicality without sacrificing elegance, simplicity, beauty, and the magic of a seamless user experience. Here are some guidelines to help translate these concepts into animations.



Do.

Motion with swift acceleration and gentle deceleration feels natural and delightful.

- Animation
- **Style**
- Layout
- Components
- Patterns
- Usability
- Resources

Color

Typography

Icons

Imagery

3B	Subhead 2	Type 15sp and 16sp, Leading 28pt
3A	Subhead 1	Type 15sp and 16sp, Leading 24pt
4B	Body 2	Type 13sp and 14sp, Leading 24pt
4A	Body 1	Type 13sp and 14sp, Leading 20pt

Pairing examples

1B Lorem ipsum dolor sit.

3A Lorem ipsum dolor sit amet, consectetur adipiscing elit, at diam nonummy nibh euismod tincidunt ut laoreet vel commodo consequat.

2 Lorem ipsum dolor sit amet, consectetur.

4A Lorem ipsum dolor sit amet, consectetur adipiscing elit, at diam nonummy nibh euismod tincidunt ut laoreet vel commodo consequat. Duis autem vel eum iriure

1A Lorem ipsum dolor sit amet.

3A Lorem ipsum dolor sit amet, consectetur adipiscing elit, at diam nonummy nibh euismod tincidunt ut laoreet vel commodo consequat.

40dp

3A Lorem ipsum dolor sit amet, consectetur adipiscing elit, at diam.

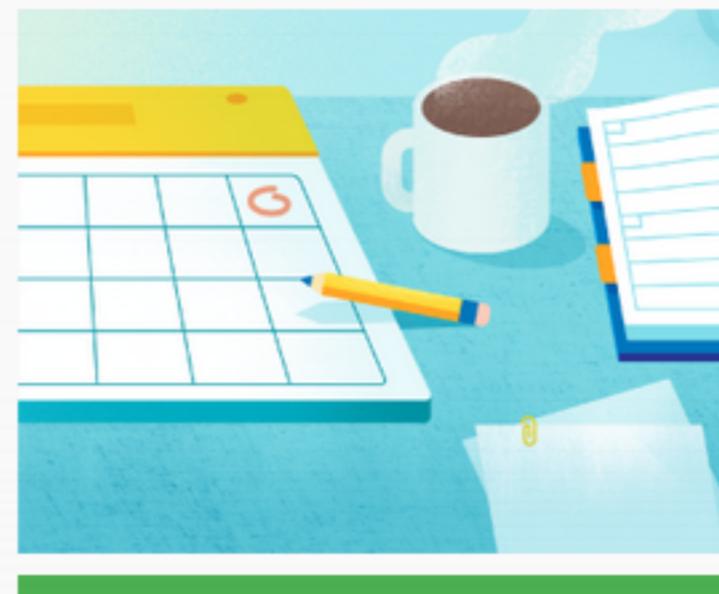
32dp

4A Lorem ipsum dolor sit amet, consectetur adipiscing elit, at diam nonummy nibh euismod tincidunt ut laoreet vel commodo consequat. Duis autem vel eum iriure

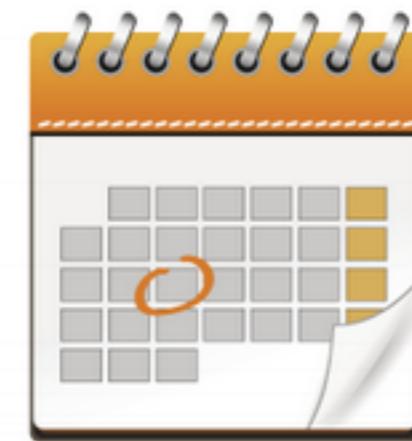
≡ Style > Imagery

Build narratives

Create an immersive story and a sense of context.



Do.



Don't.



Do.



Don't.

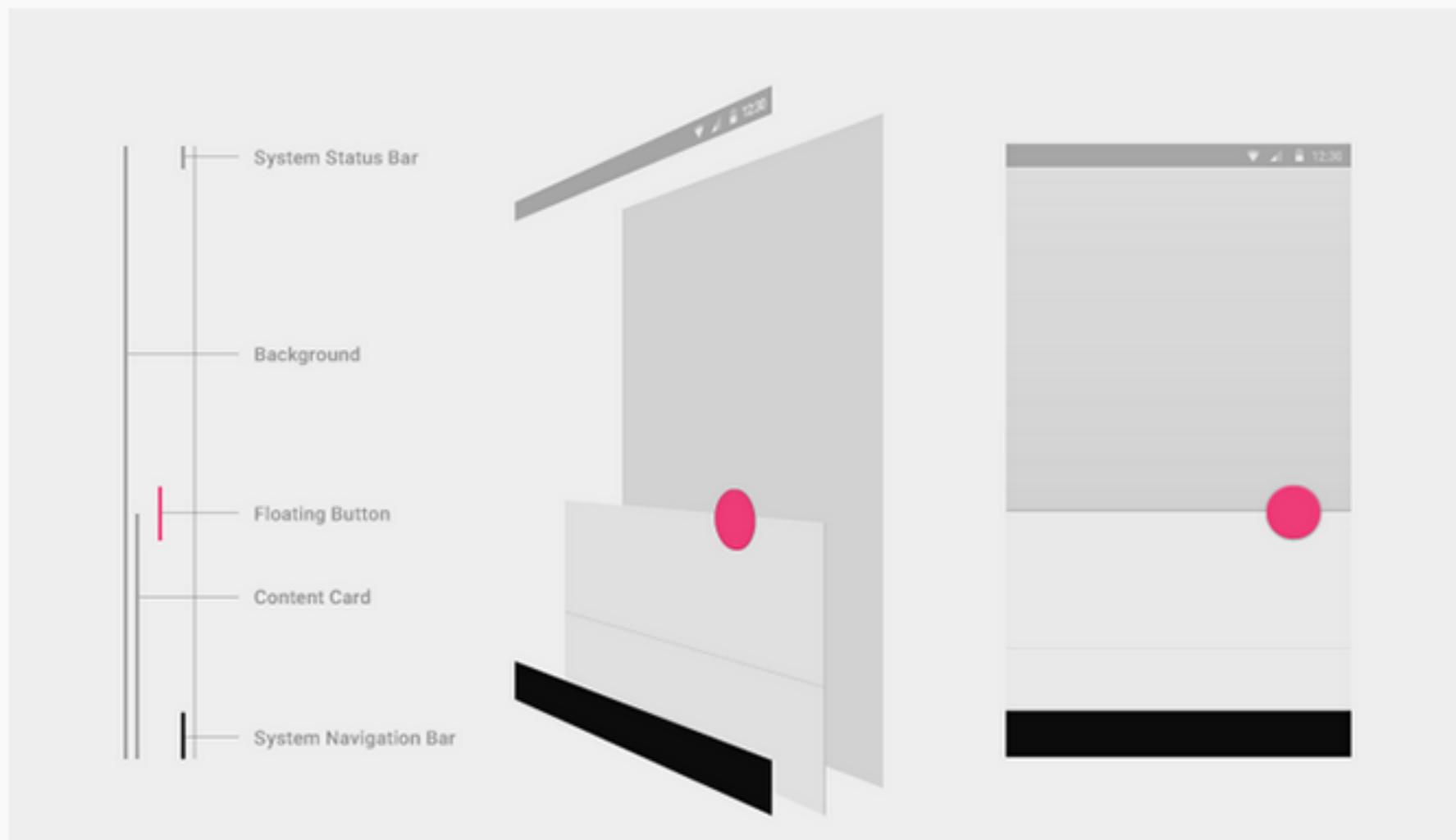
- Animation
 - Style
 - Layout
 - Components
 - Patterns
 - Usability
 - Resources
- Principles
- Metrics and Keylines
- Structure

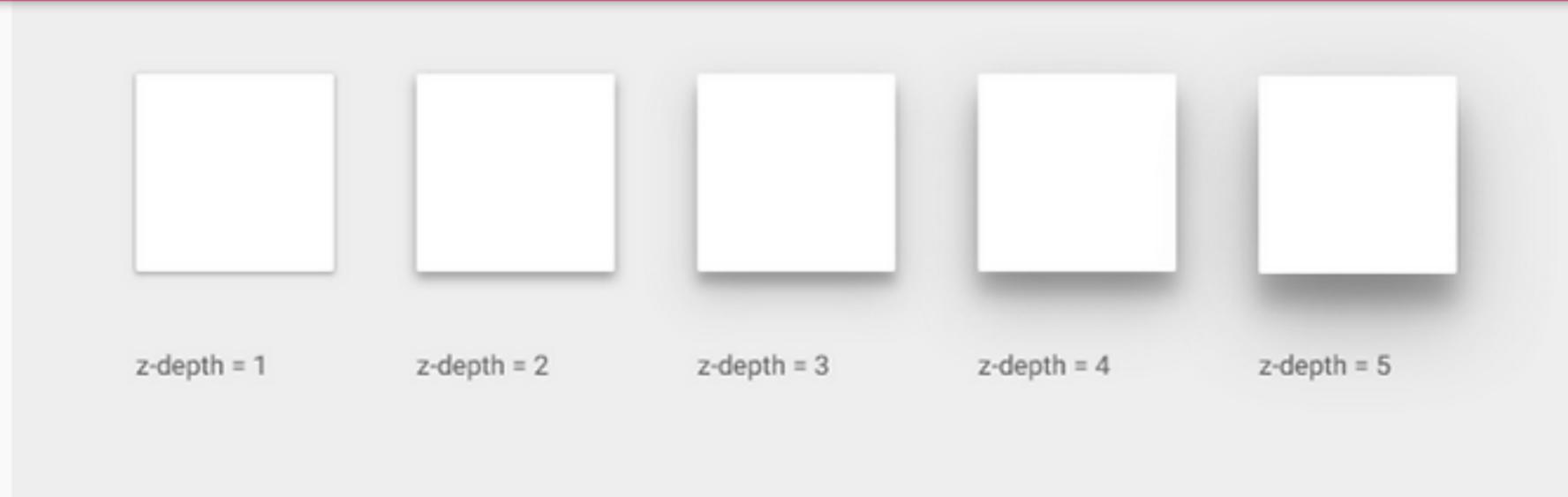
Layout considerations

Depth is not ornament.

Think in terms of element priority within z-space, not absolute position.

Depth within an app should communicate hierarchy and importance, and help focus users' attention to the task at hand.





z-depth = 1

z-depth = 2

z-depth = 3

z-depth = 4

z-depth = 5

Shadow values in Illustrator				
z-depth = 1	z-depth = 2	z-depth = 3	z-depth = 4	z-depth = 5
Top Shadow 12% black x-offset=0 y-offset=1dp blur: 1.5dp	Top Shadow 16% black x-offset=0 y-offset=3dp blur: 3dp	Top Shadow 19% black x-offset=0 y-offset=10dp blur: 10dp	Top Shadow 25% black x-offset=0 y-offset=14dp blur: 14dp	Top Shadow 30% black x-offset=0 y-offset=19dp blur: 19dp
Bottom Shadow 24% black x-offset=0 y-offset=1dp blur: 1dp	Bottom Shadow 23% black x-offset=0 y-offset=3dp blur: 3dp	Bottom Shadow 23% black x-offset=0 y-offset=6dp blur: 3dp	Bottom Shadow 22% black x-offset=0 y-offset=10dp blur: 5dp	Bottom Shadow 22% black x-offset=0 y-offset=15dp blur: 6dp

- Animation
- Style
- Layout
- **Components**
- Patterns
- Usability
- Resources

Button Sheets

Buttons

Cards

Chips

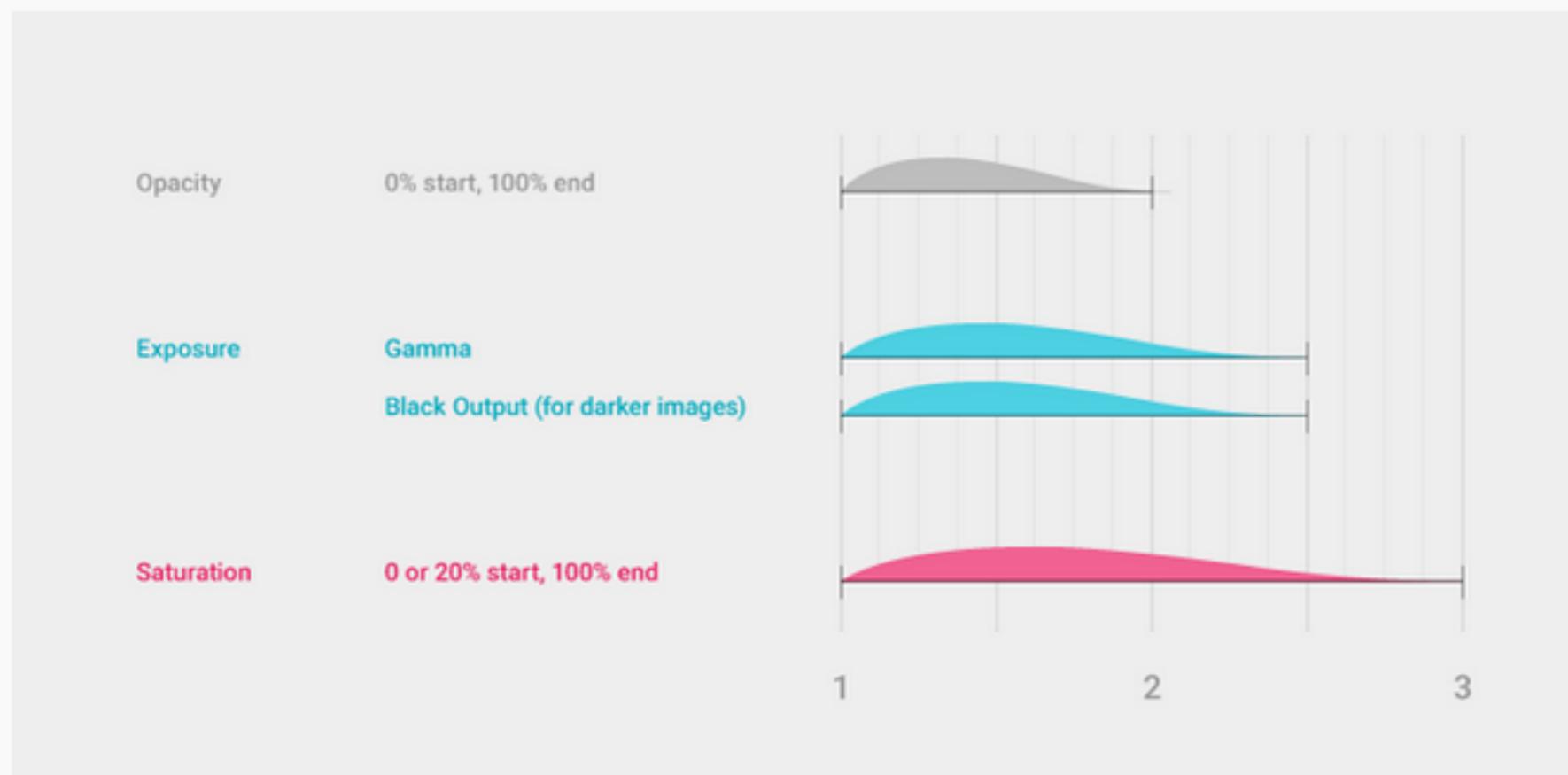
Dialogs

Grids ...

- Animation
 - Style
 - Layout
 - Components
 - Patterns
 - Usability
 - Resources
- Selection
- Gestures
- Promoted Actions
- Settings
- Imagery Treatment
- Search

Image Load

Rather than relying heavily on opacity shifts, illustrations and photographs may load and transition in 3 phases at staggered durations. The levels are adjusted for a low contrast exposure and desaturated in color. The final stage would be a full color saturation, only after the opacity is at 100%. The lower contrast effect is a combination of a shift in gamma and black output for darker images.



- Animation
- Style
- Layout
- Components
- Patterns
- **Usability**
- Resources

Accesibility

- Animation
- Style
- Layout
- Components
- Patterns
- Usability
- Resources

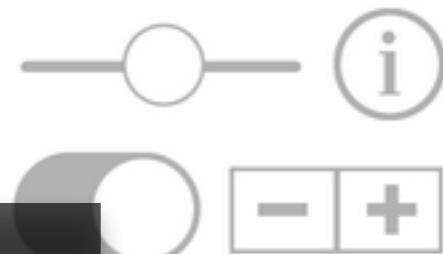
Layout Tempaltes

Sticker Sheets

Roboto Font

Color Palettes

iOS 7 Design Resources



iOS 7 Design Resources

[iOS 7 UI Transition
Guide](#)

<https://developer.apple.com/library/iOS/design/>

Get ready to delight your users by transitioning your app to iOS 7

[iOS Human Interface Guidelines](#)

Create a superlative user experience that's founded on Apple's design principles and guidelines

[UIKit User Interface Catalog](#)

Configure UI elements quickly and easily in Interface Builder and your code

2010年頃

- ・ なんでもかんでも iOS っぽい感じが流行る
- ・ ActionSheet や AlertView みたいなUIをブラウザで再発明
- ・ つらい
- ・ あ、jQuery Mobile さん...
- ・ Android の普及、デザインリテラシーの向上
　　フラットデザインの隆盛などでフェードアウト



Bootstrap is the most popular HTML, CSS, and JS
framework for developing responsive, mobile first projects
on the web.

Twitter Bootstrap

<http://getbootstrap.com/>

[Download Bootstrap](#)

Currently v3.2.0



Get to Know Your App
Data in. Insights out. Get
to know your application

2012年頃

- ・ Twitter Bootstrap の流行
- ・ 数多くの管理ツールが Bootstrap 化
- ・ エンジニアに大人気
- ・ オープンソースプロジェクトのサイトとかも Bootstrap
- ・ これはいまだに続いている印象

Design

[Modern design](#)[Start inventing](#)[Get the guidelines](#)[Get the templates](#)

The foundation that drives good design. The Microsoft design language is inspired by the simplicity of Swiss graphic design, the wayfinding graphics of transit centers, and the use of motion to guide the user through the story of an app. This design language is a great baseline—for designers and developers alike.

Microsoft Design

<http://dev.windows.com/ja-jp/design>

[Design principles](#)[Live tiles](#)[Edges](#)[Read more about modern design](#)

実は

- Microsoft も立派なデザインガイドラインを抱えていた
- スイスのグラフィックデザインにヒントを得てるとか
- Metro という名前が商標問題とかで Modern になってるとか
- 個人的に好きなのでがんばってほしいです (^ω^)

 Tweet 4,005

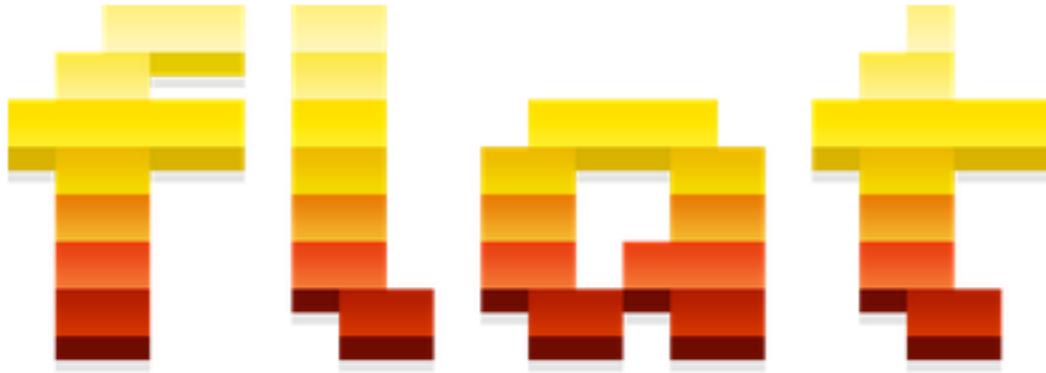
 J'aime 2,7k

 8+1 641

 Instapaper

 Buffer 528

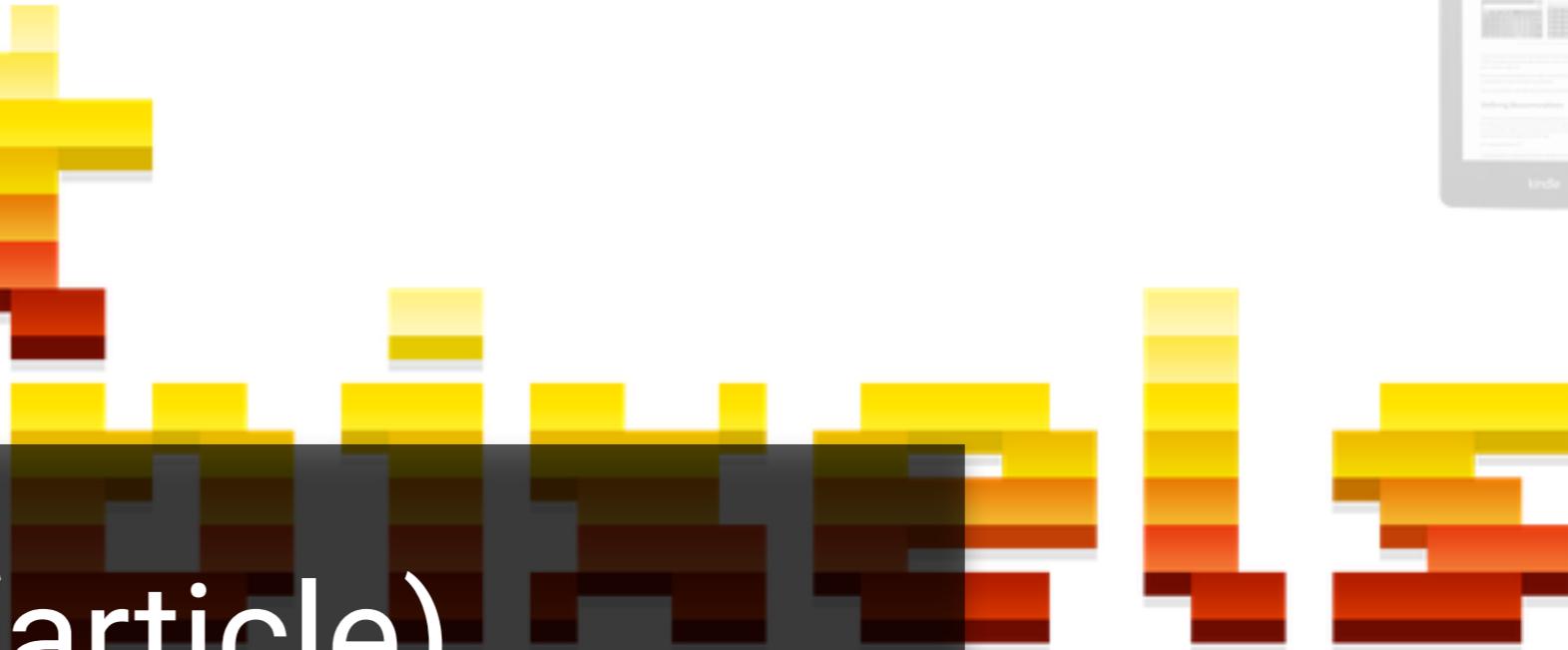
Get the Kindle
version:



The Battle Between Flat
Design & Skeuomorphism

Flat Pixels (article)

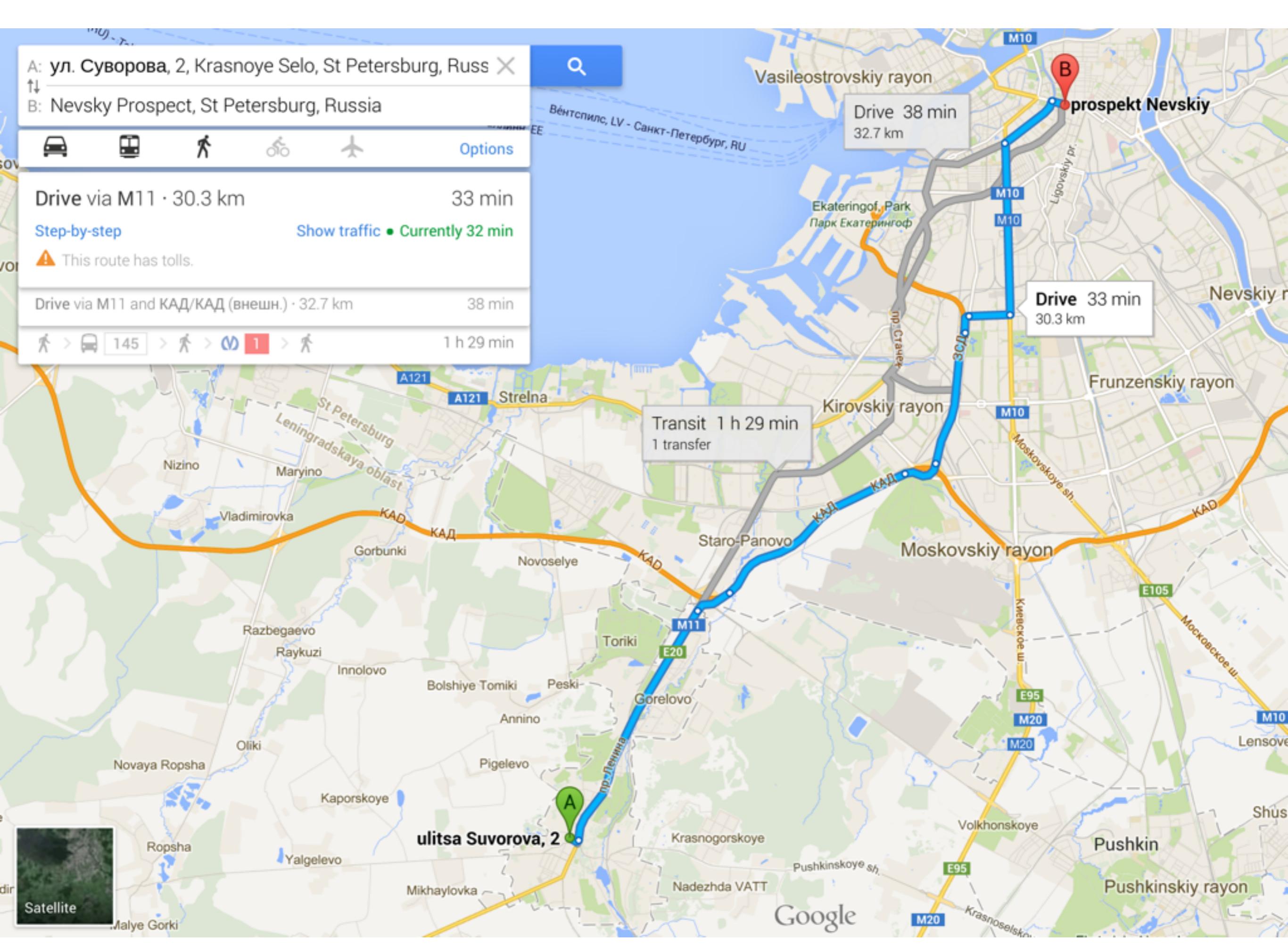
<http://sachagreif.com/flat-pixels/> Greif



If you're paying attention to what's going on in the design world, you've probably noticed the ongoing debate around **skeuomorphism** vs

“
This style offers the best of both world:
realism's affordances and subtle hints
combined with the purity and simplicity
of flat design.

<http://sachagreif.com/flat-pixels/>



今後

- ・ Material Design の詳細なスペックは参考になる
- ・ 実装すべき具体的な内容と実装済のコードが存在するのが強み
- ・ Android L ほか Android ファミリーで活躍予定？
- ・ Webブラウザの世界には進出できるか？
- ・ さすがに当時の iOS ほどの状態は訪れない気が...

On the Web

Webにおけるマテリアルデザイン



Polymer

[Element guides](#)[Layout elements](#)[Using core icons](#)[Material design with Polymer](#)[Core elements](#)[Paper elements](#)

Material design with Polymer

Guide

[Edit on Github](#)

▶ Table of contents

Material design is a unified system of visual, motion, and interaction design that adapts across different devices. Material design is inspired by tactile materials, such as paper and ink. Material surfaces interact in a shared space. Surfaces can have elevation (z-position), drop shadows, or other surface effects to convey relationships.

Material design with Polymer

www.polymer-project.org/docs/elements/material.html

Polymer's [paper elements collection](#) implements material design for the web. The [Polymer core elements collection](#) provides a number of unthemed elements that you can use to achieve material design app layouts, transitions, and scrolling effects.

For more detail on the material design philosophy and guidelines, see the [Material design specification](#).

For a sample of the material design patterns in use, see the [Topeka sample app](#).

For quick visual demos of many of the paper elements, see the [Paper elements sampler](#).

Core Elements
Paper Elements

Paper Elements

Demo

Element collections

Elements

[Edit on Github](#)

« Element guides

« Core elements

« Paper elements

paper-button

paper-checkbox

paper-dialog-transition

paper-dialog

paper-fab

paper-form

paper-icon-button

paper-input

paper-item

paper-menu-button-overlay

paper-menu-button

Polymer core

elements

Polymer's core elements

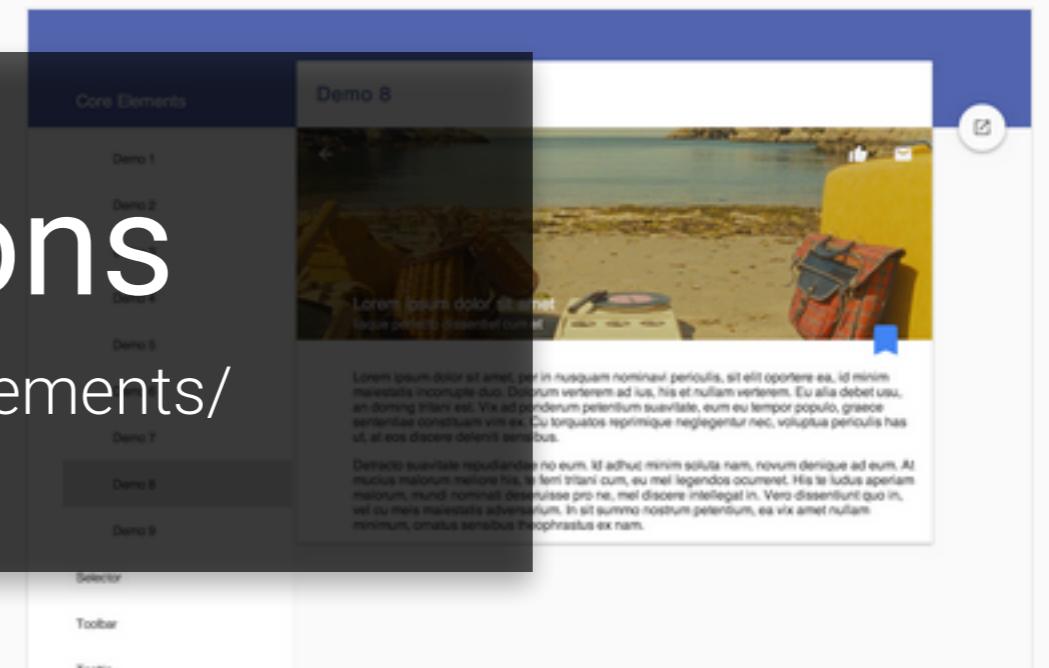
visual utility elements.

They include elements for

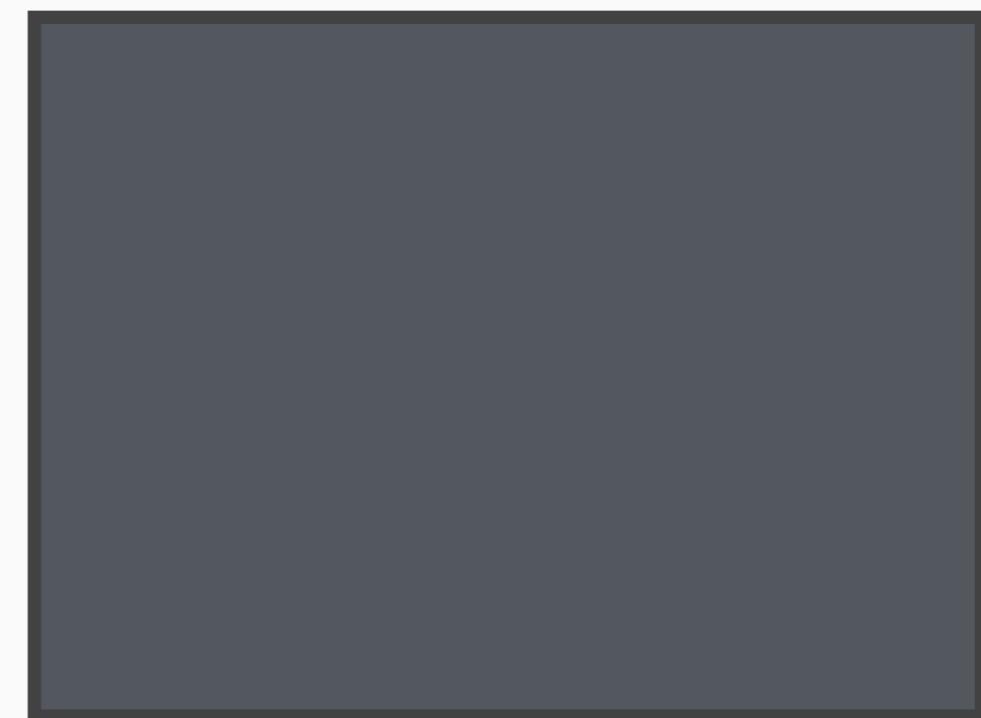
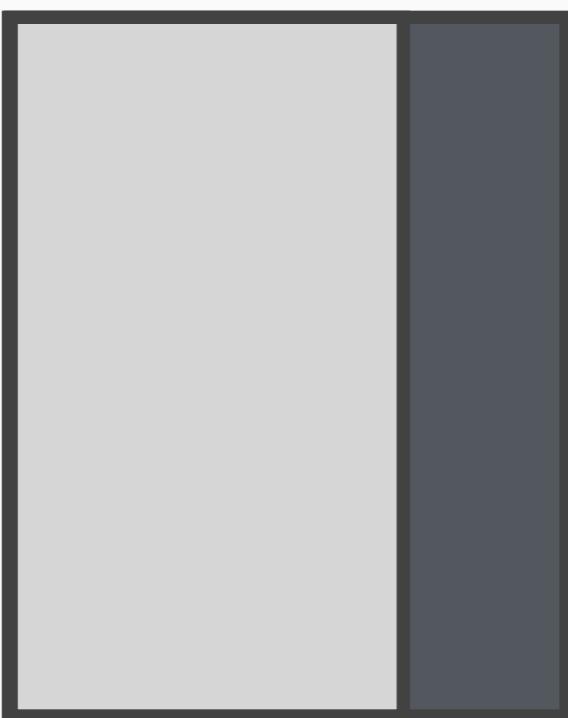
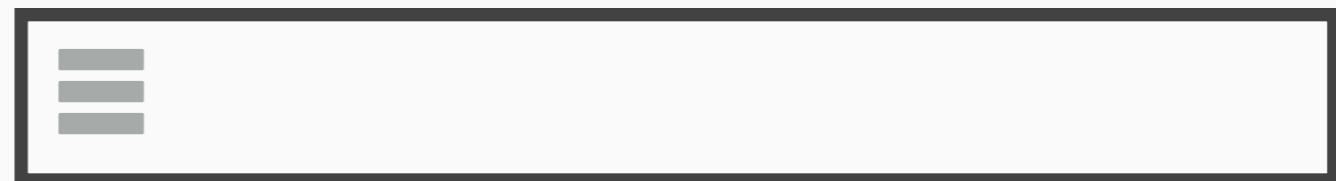
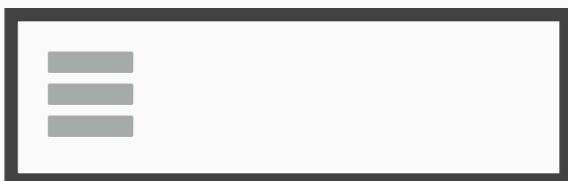
working with layout, user

input, selection, and

scaffolding apps.

[DOCS](#)[DEMOS](#)

Drawer

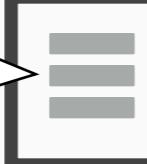


```
<core-toolbar>  
  <paper-icon-button id="paper_icon_button" icon="menu"  
    isToggle></paper-icon-button>  
  <p>Hello my-app</p>  
</core-toolbar>  
  
<core-drawer-panel id="core_drawer_panel"  
  selected="{{$.paper_icon_button.active ? 'drawer' : 'main'}}">  
  <section drawer>This is Drawer</section>  
  <section main>This is Main</section>  
</core-drawer-panel>
```



<paper-icon-button
id="icon_butotn"
active
isToggle>

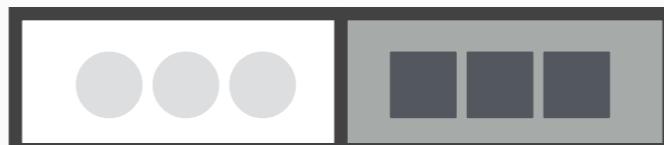
<core-toolbar>



<core-drawer-panel
selected="{{\$.icon_butotn.active...}}>

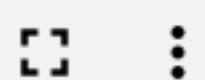


Tabs





← paper-tab



ITEM ONE

ITEM TWO

Type something...

Type something...



Polymer Designer

<http://www.polymer-project.org/tools/designer/> paper-tab #paper_tab1 "ITEM ONE"

my-element

paper-tabs #paper_tabs

paper-tab #paper_tab2 "ITEM TWO"

core-animated-pages #core_animated_pages

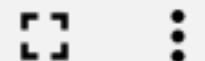
section #section1

google-map #google_map

section #section2



← paper-tab



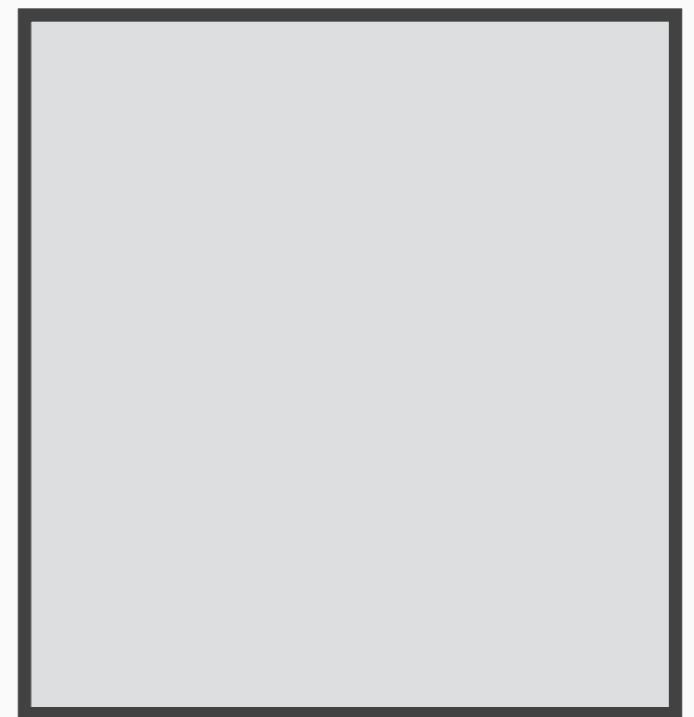
ITEM ONE

ITEM TWO

```
<paper-tabs id="tabs" selected="0">  
  <paper-tab>ONE</paper-tab>  
  <paper-tab>TWO</paper-tab>  
</paper-tabs>
```



```
<core-animated-pages  
  selected="{{$.tabs.selected}}>  
  <section>ONE</section>  
  <section>TWO</section>  
</core-animated-pages>
```



などなど…

<paper-shadow>

```
<div class="card">  
  <paper-shadow z="1"></paper-shadow>  
</div>
```



<paper-ripple>

```
<div class="button raised green">
  <div class="center" fit>OK</div>
  <paper-ripple fit></paper-ripple>
</div>
```

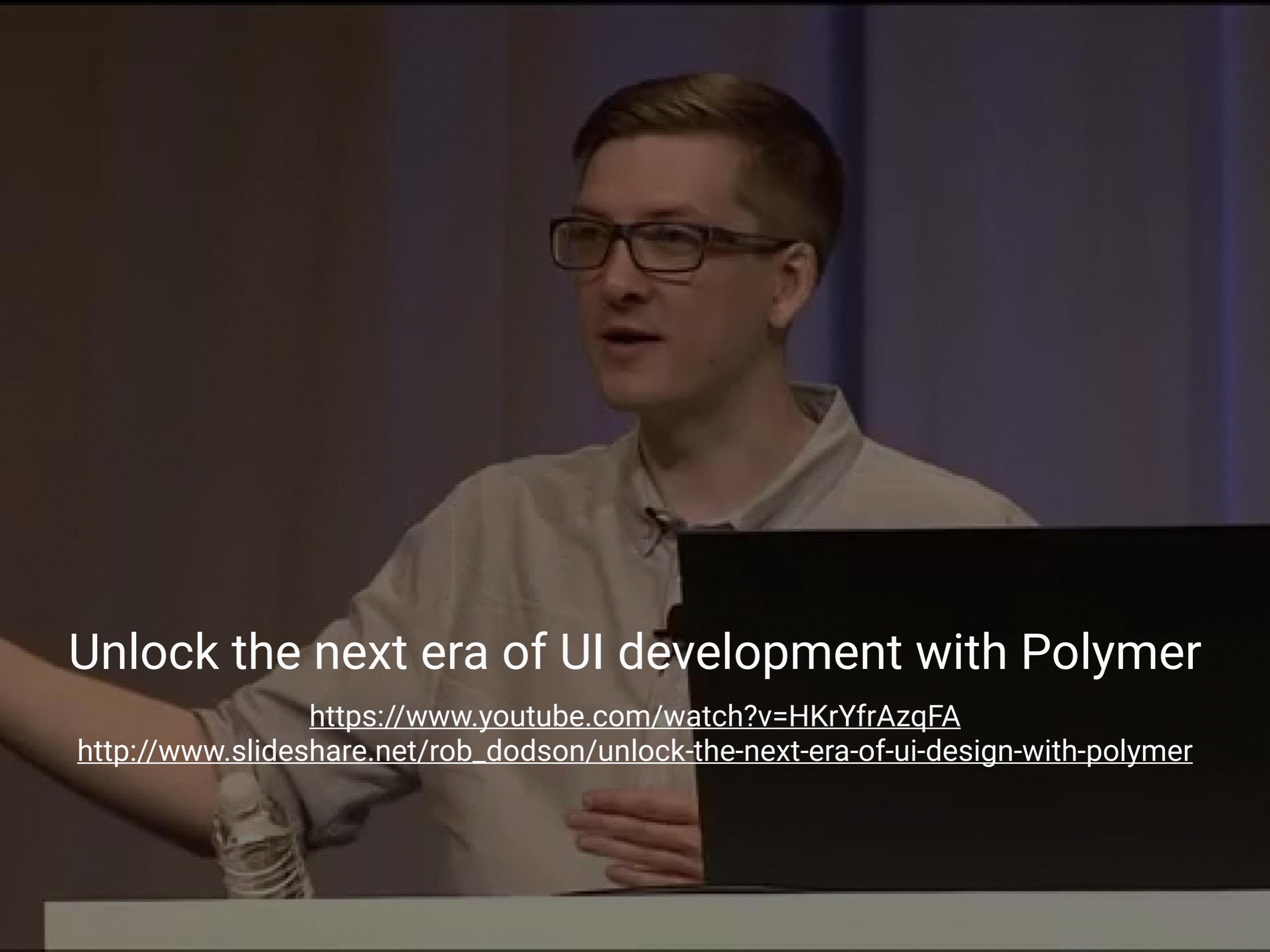


<core-style>

```
<core-style id="shared">  
  :host {  
    display: block;  
    color: white;  
  }  
</core-style>
```

```
<polymer-element noscript>  
  <template>  
    <core-style ref="shared">  
    </core-style>  
  </template>  
</polymer-element>
```



A medium shot of a man with short brown hair and glasses, wearing a light-colored button-down shirt. He is looking down at a dark object, likely a smartphone or small tablet, which he is holding with both hands. The background is a plain, light-colored wall.

Unlock the next era of UI development with Polymer

<https://www.youtube.com/watch?v=HKrYfrAzqFA>

http://www.slideshare.net/rob_dodson/unlock-the-next-era-of-ui-design-with-polymer

Topeka

<http://www.polymer-project.org/apps/topeka/>

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FAQ

Is this project related
to Angular JS?

“

Nope. Polymer isn't like things that have come before. Polymer is the first of a new kind of library taking advantage of Web Components.

<http://www.polymer-project.org/resources/faq.html#frameworks>



This repository

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ahomu



angular / material



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198



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2,238



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155

branch: master

material / README.md



LuoHaojing 8 days ago OCD suffer has fixed a grammar error

6 contributors



66 lines (44 sloc) | 2.988 kb

Raw

Blame

History



Material Design for AngularJS Apps

angular/material

Material Design is a specification for a unified system of visual, motion, and interaction design that adapts across different devices.

<https://github.com/angular/material>

Our goal is to deliver a lean, lightweight set of AngularJS-native UI elements that implement the material design system for use in Angular SPAs.

This project is still in early preview. It is a complementary effort to the [Polymer](#) project's [paper elements collection](#).

Demo Site

You can see these components in action at <http://material.angularjs.org>

How is polymer related
to Material Design?

“
Polymer played a key role in material design’s development:
it was used to quickly prototype and iterate on design concepts.

<http://www.polymer-project.org/resources/faq.html#materialdesign>

Is polymer
Production ready?

“
“Polymer is currently in
“developer preview”.

<http://www.polymer-project.org/resources/faq.html#readiness>

おっしゃー
マテリアルすっぞwww

むむむ...

- Web Components 自体が Chrome 36 がやっと対応
- Platform.js あるけど、いかにも Developer Preview
- モバイルで Polymer/Web Components大丈夫か
- シャドウとアニメーションの多用はブラウザWebの天敵
- Material Design そのものが、Android L に向けてこれから
- Android の UIWidget 類も、まだよくは動かない

:)

Conclusion

- Material Design が流行るかは別として勉強になる
- Web 用には Polymer + Paper Elements を利用できる
- Material Design も Polymer (Web Components) も発展途上
- プロダクション用途で普及しうるのは、もう少し先の未来

Thanks!

🏠 <http://aho.mu>

🐦 [@ahomu](#)

🐱 [github.com/ahomu](#)

