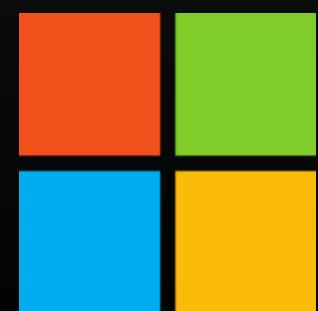


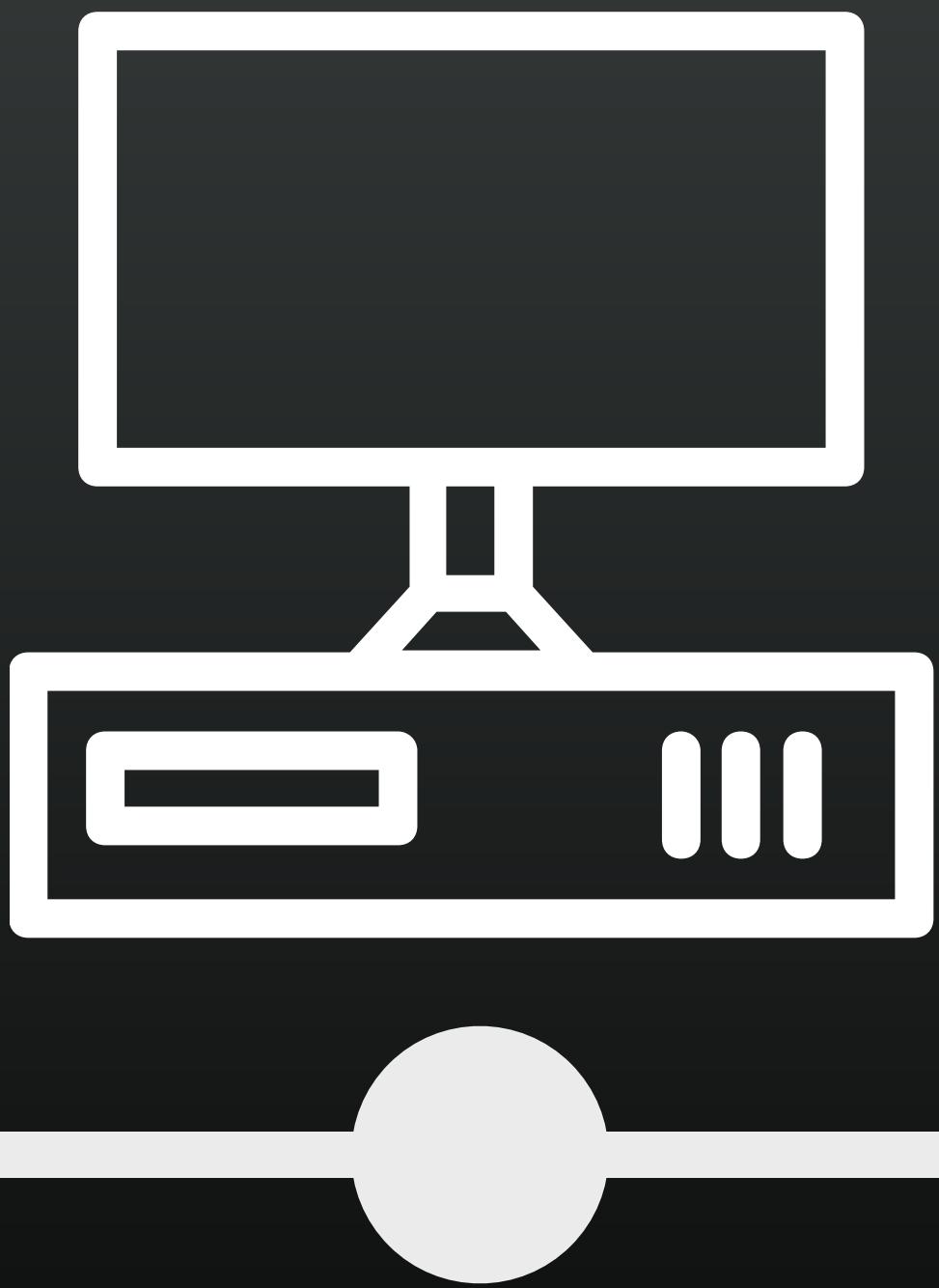
Advanced Design Methods



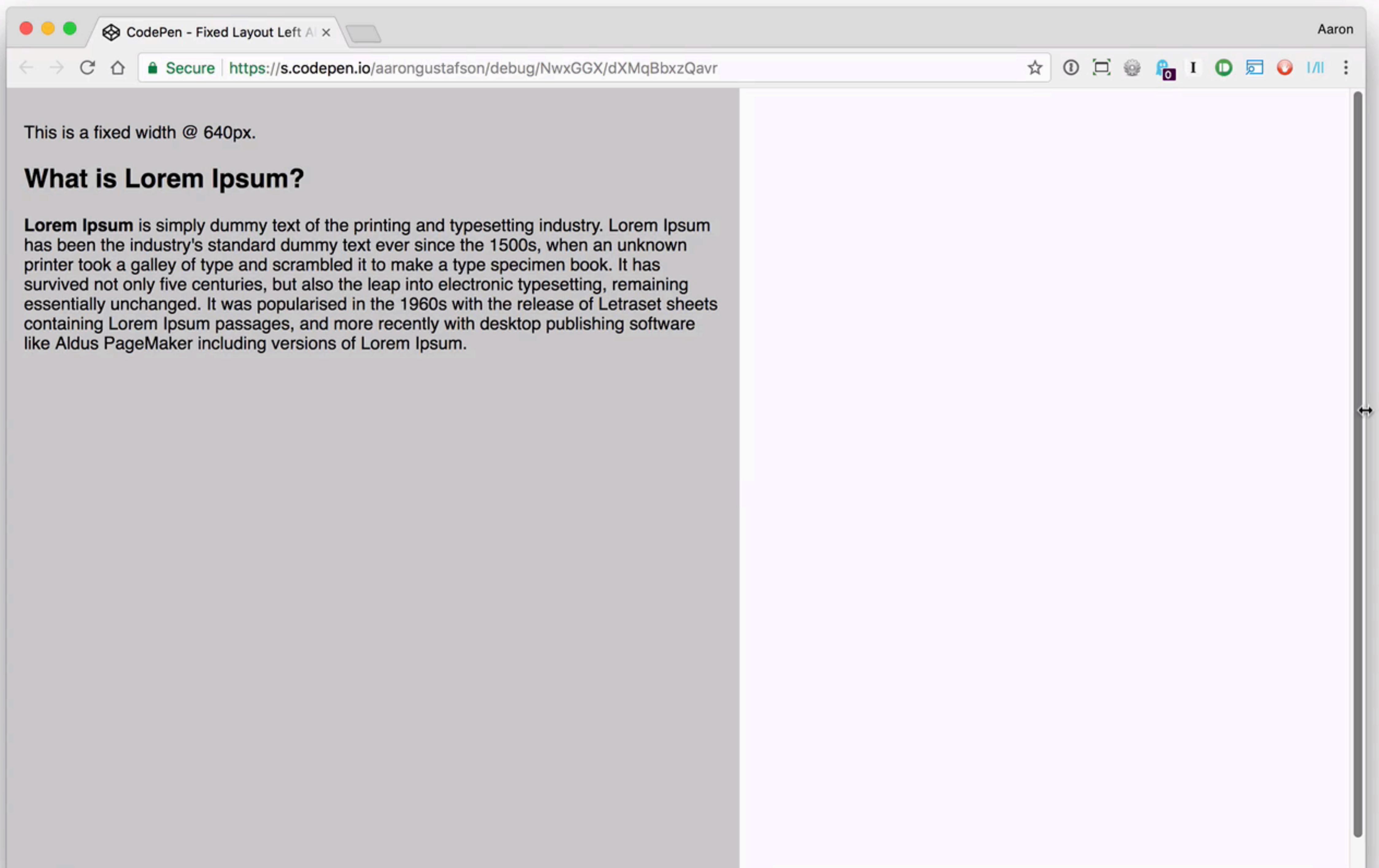
Aaron Gustafson
@AaronGustafson
slideshare.net/AaronGustafson

Building for
the Web is **hard**.

In the beginning...



640 × 480

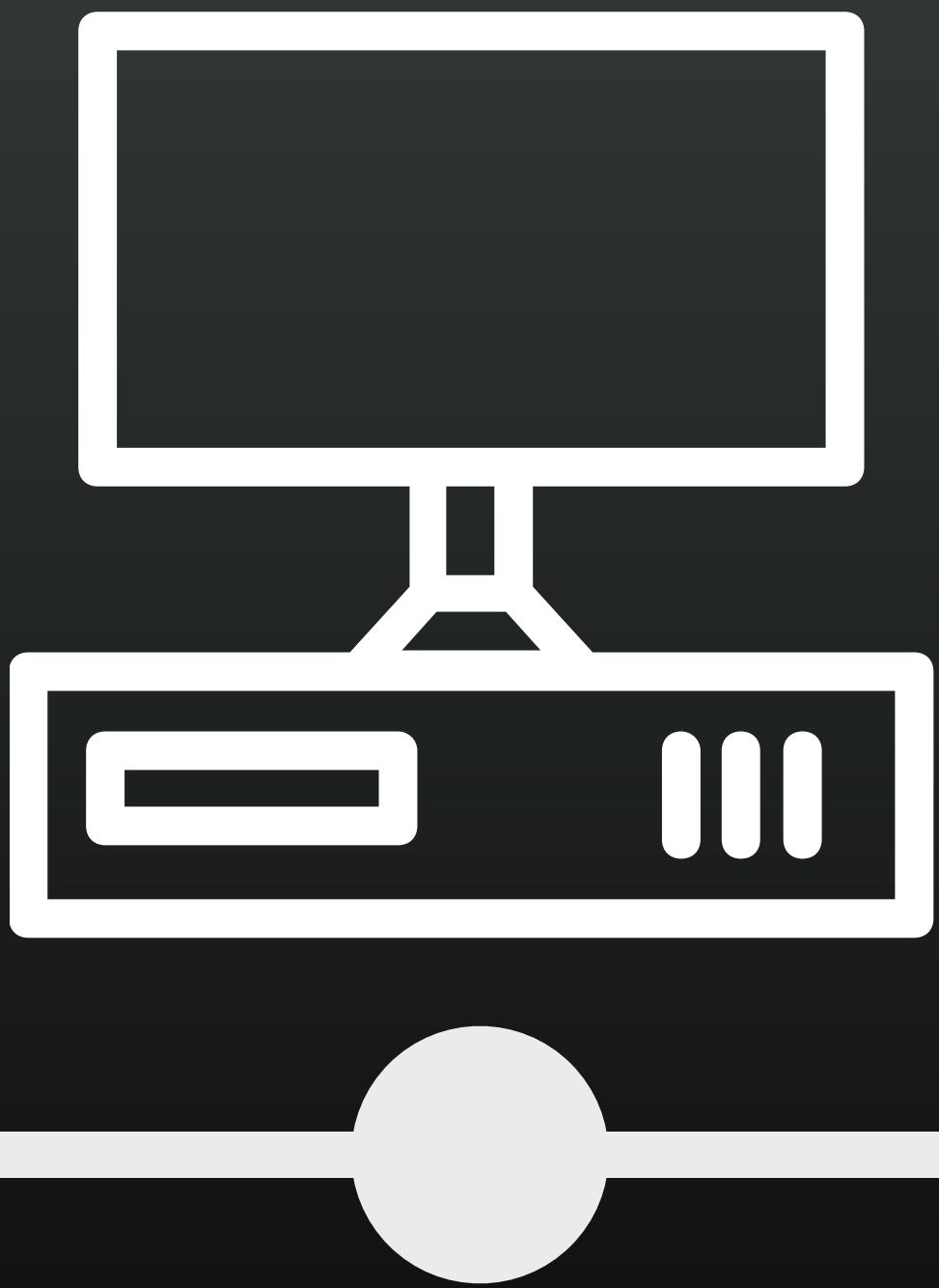


This is a fixed width at 640px center

What is Lorem Ipsum?

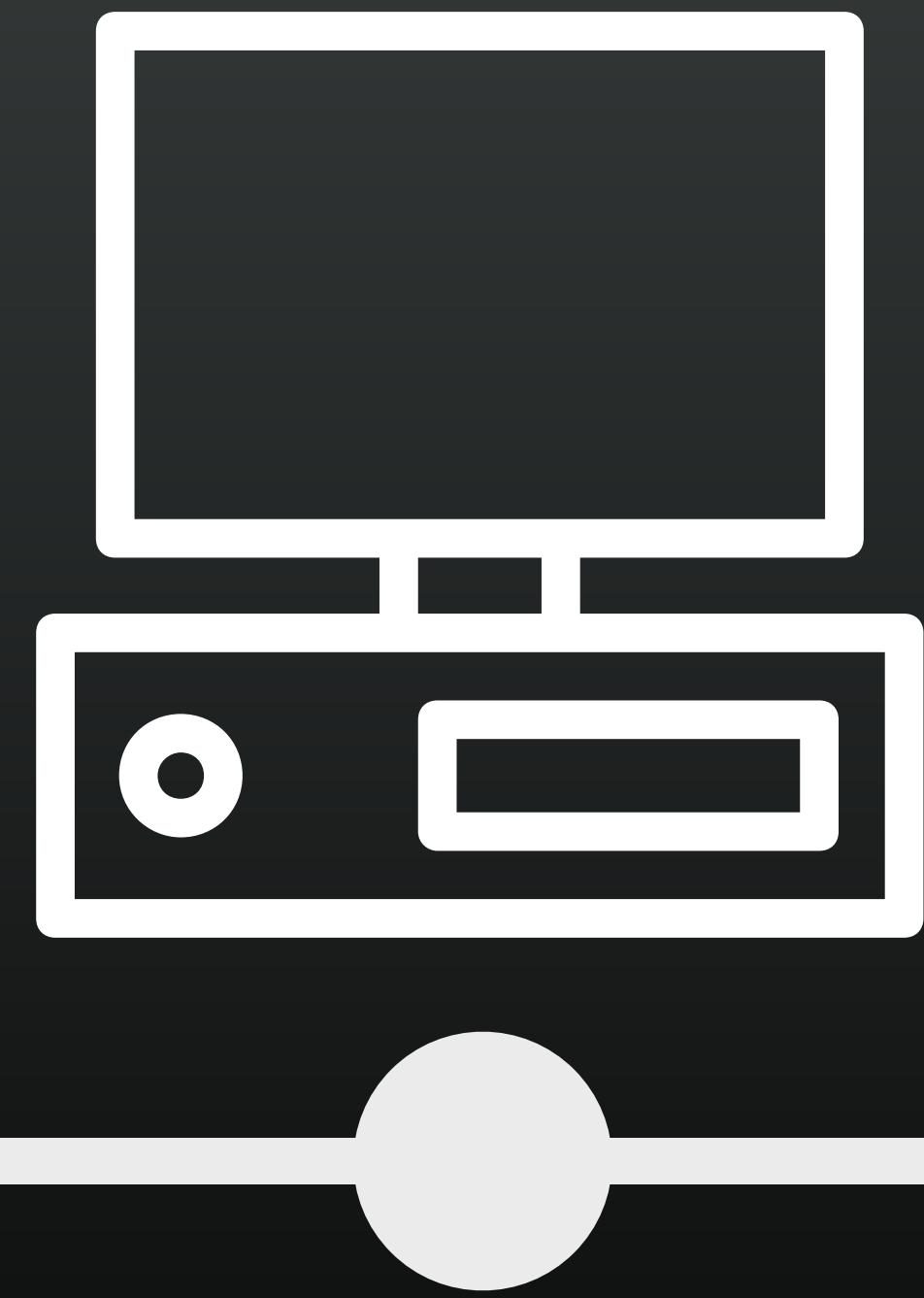
Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

In the beginning...



640 × 480

Ok, we can go a little larger.



800 × 600



This is a fixed width at 800px.

What is Lorem Ipsum?

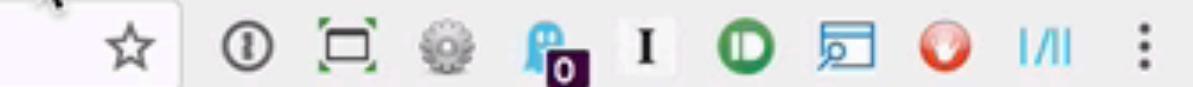
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This is a liquid width.

What is Lorem Ipsum?

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← → C ◻Secure | https://s.codepen.io/aarongustafson/debug/XzXmXG/bZAQWyQXJveM

This is a fixed width.

What is Lorem Ipsum?

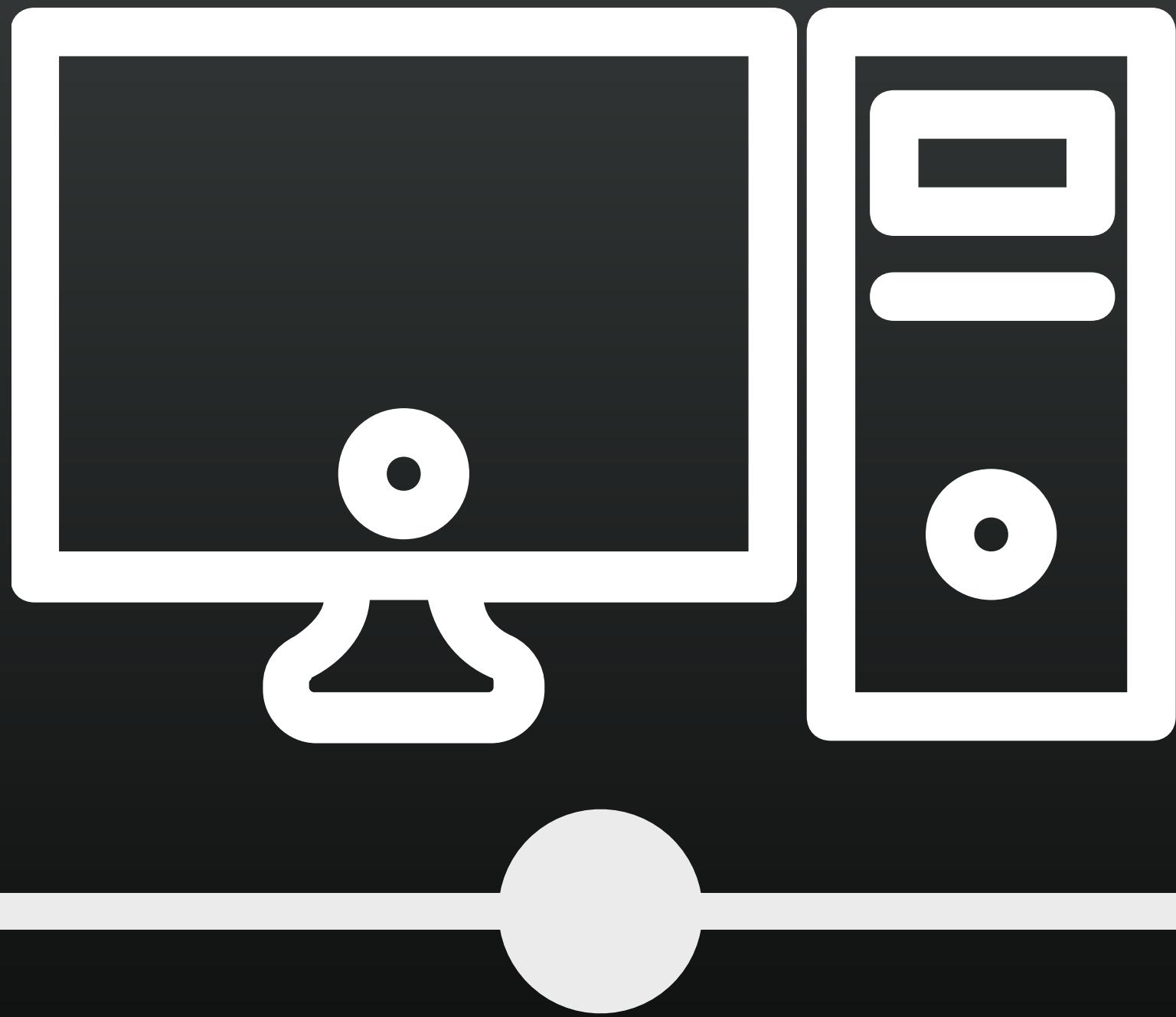
Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Ok, we can go a little larger.



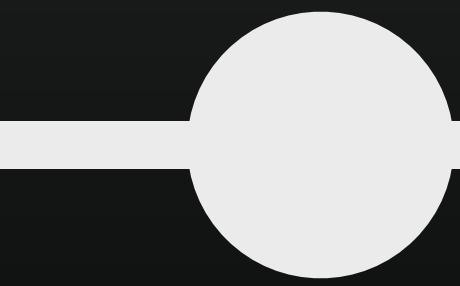
800 × 600

Ok, a bit larger, but that's it.



1024 × 768

Of course laptops...

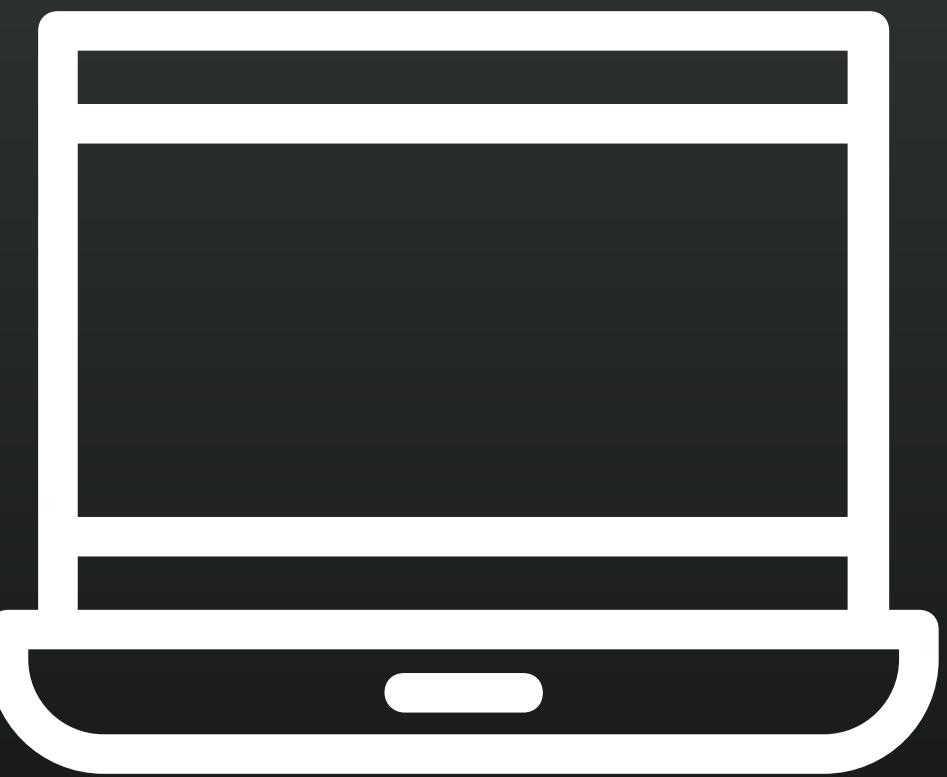


800×600

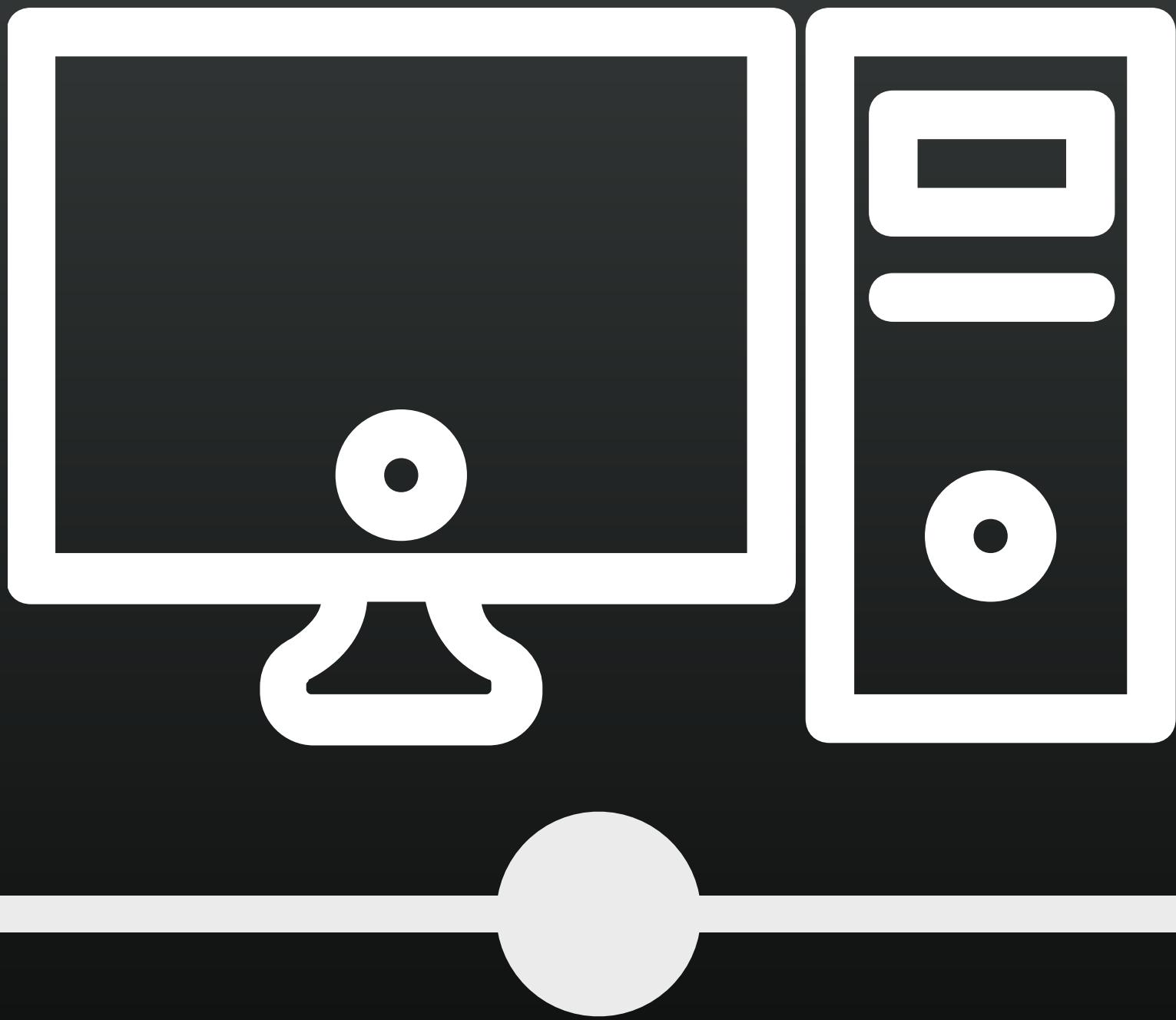
1024×600

1280×800

1366×768

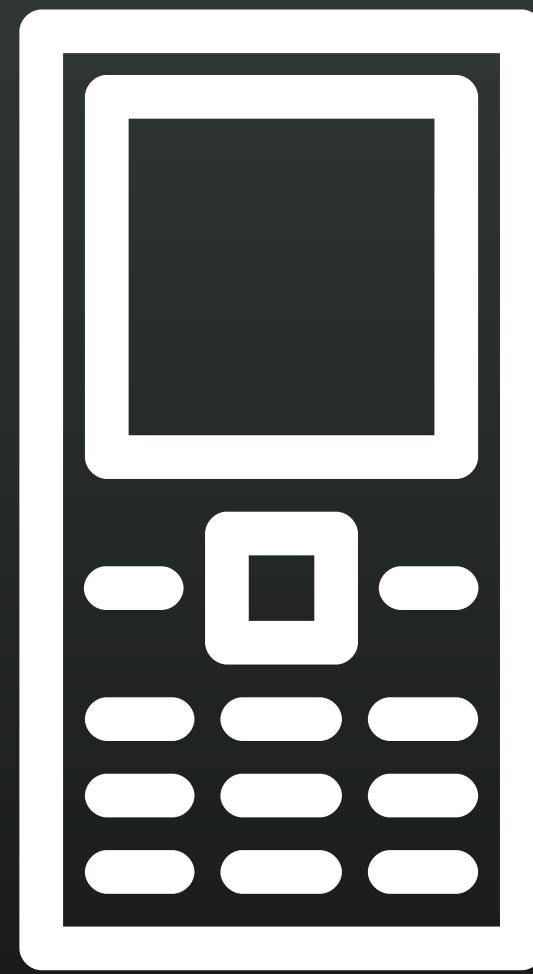


The web's “happy place”.

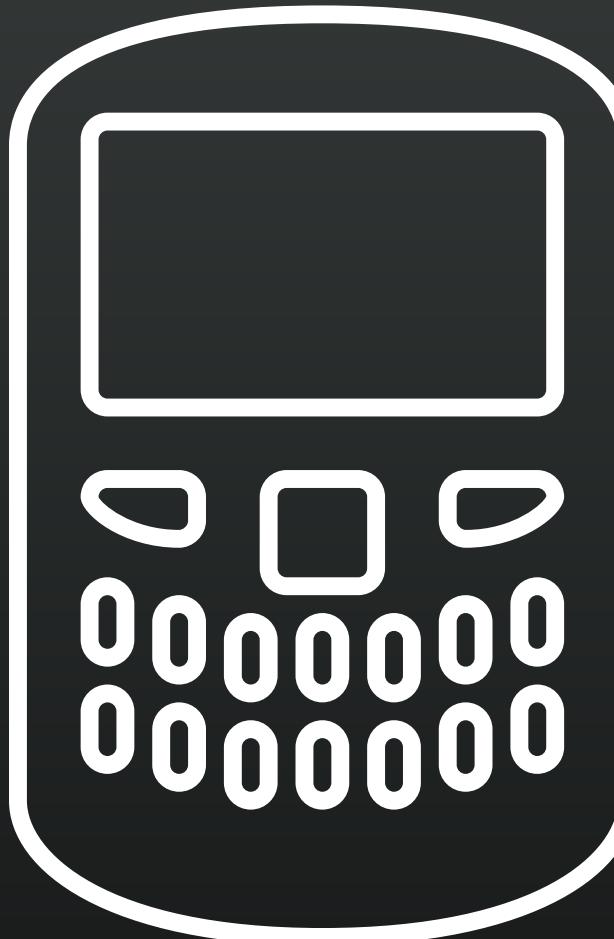


1024 × 768

We were ignoring mobile...

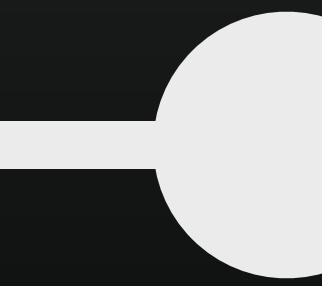
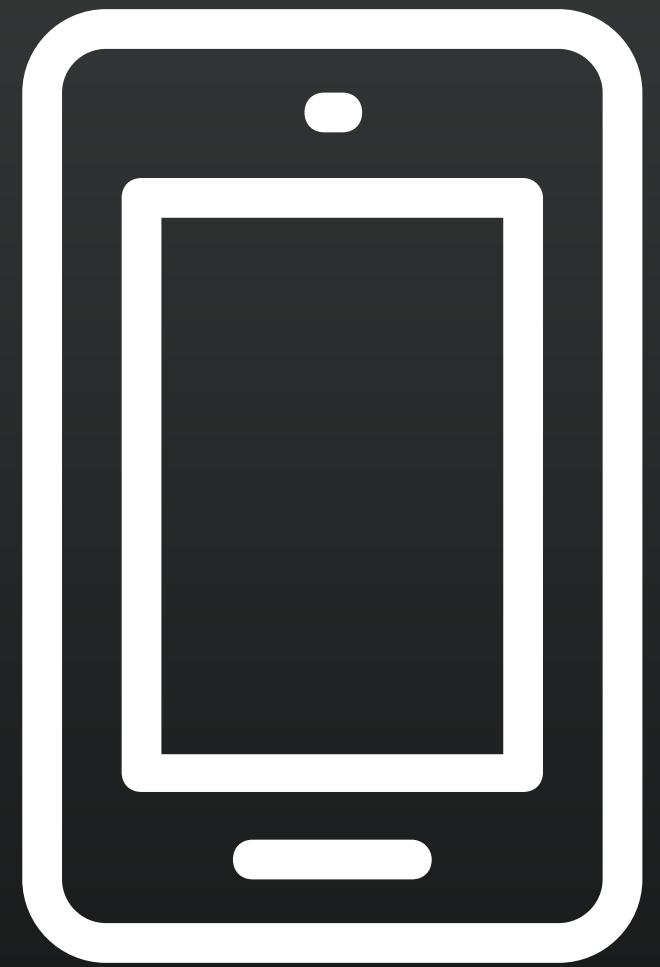


240 × 240

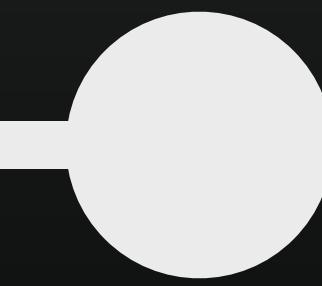


640 × 200

Until this happened.



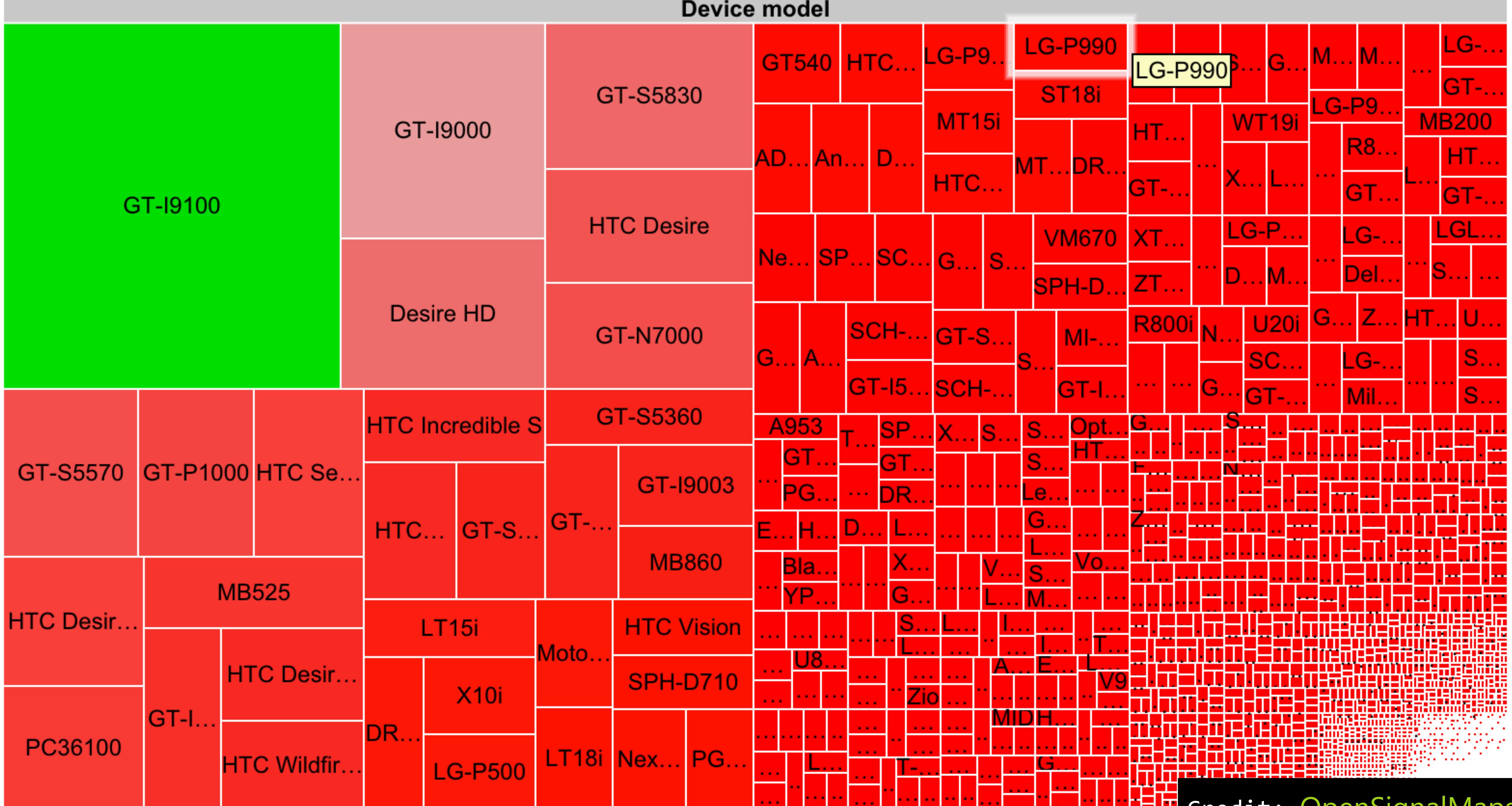
320 × 480

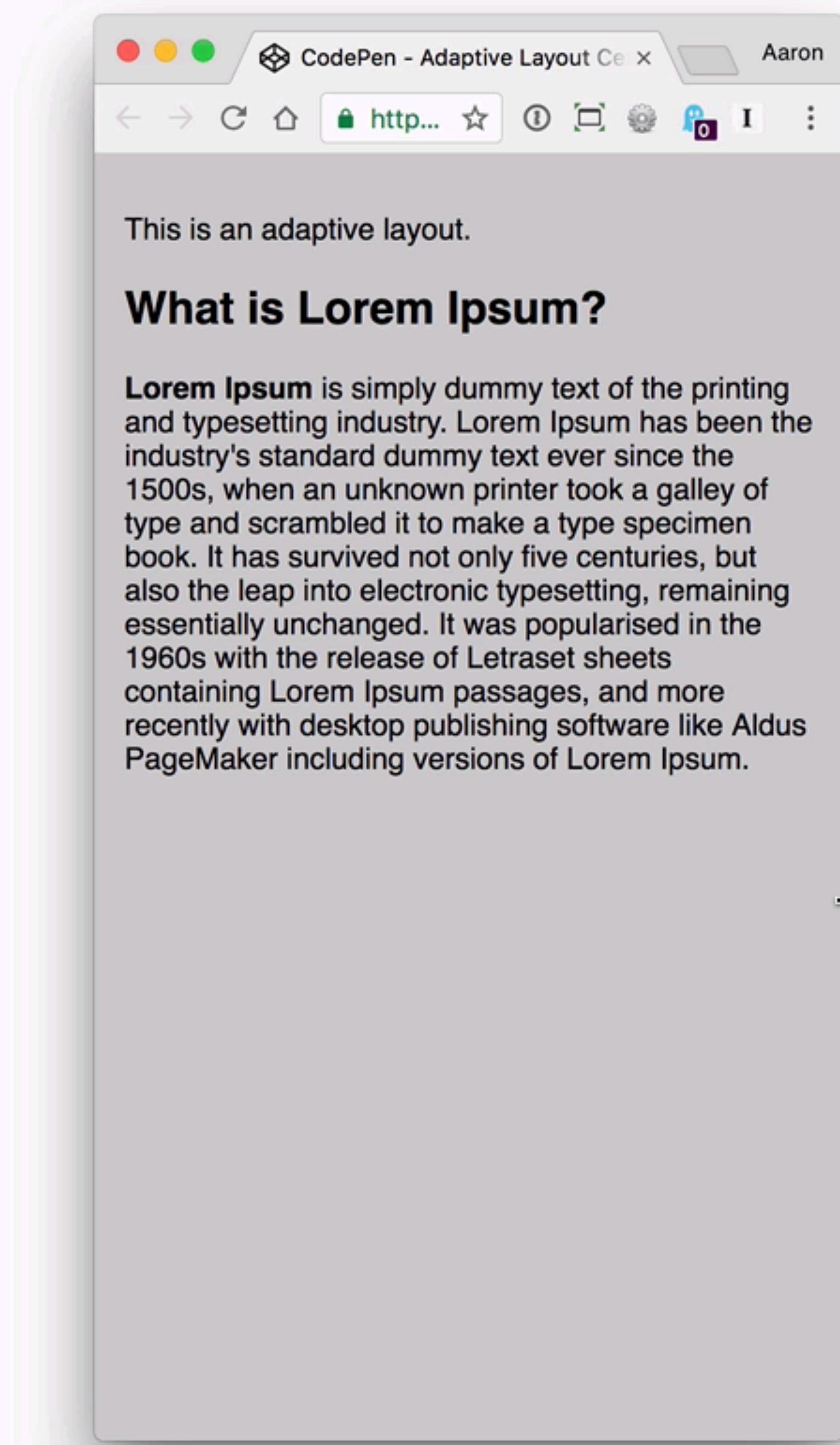


3840 × 2160

Don't even get me
started on tablets.

Device model

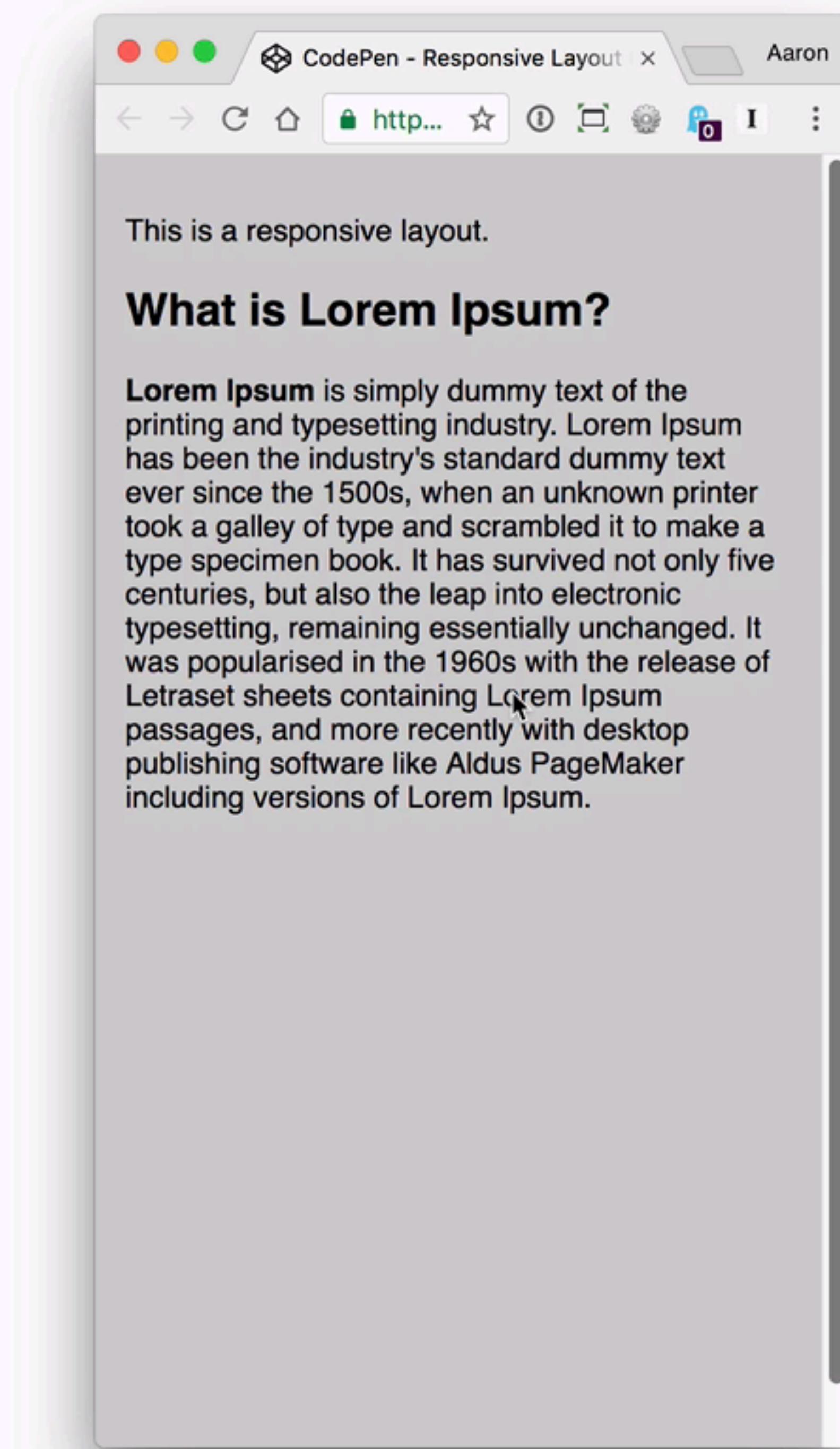




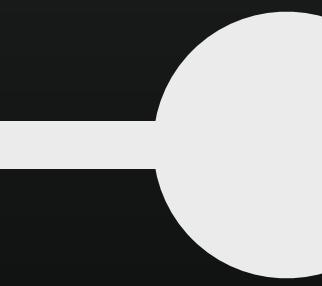
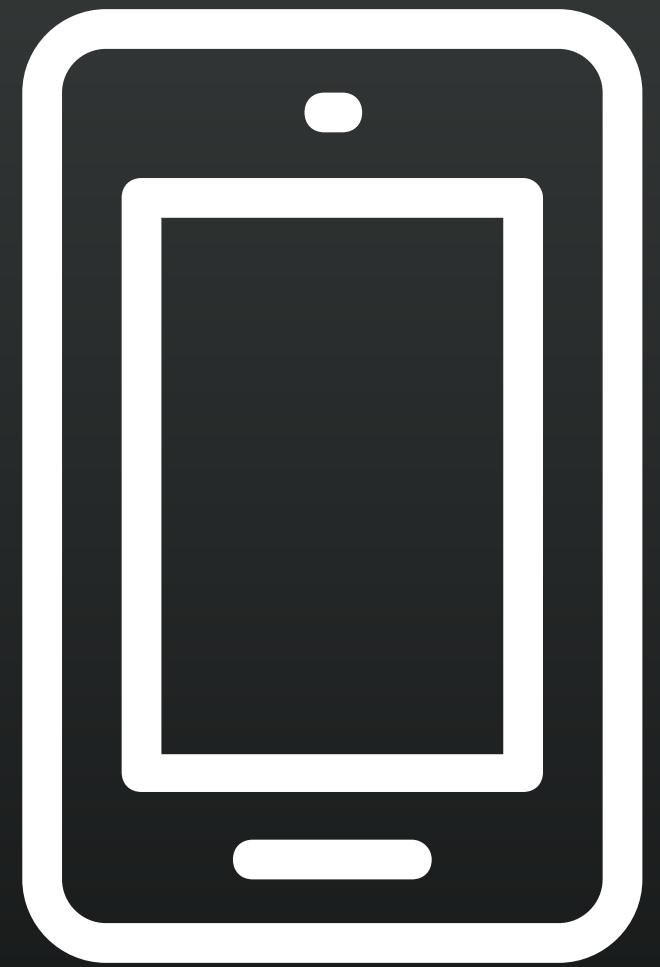
This is an adaptive layout.

What is Lorem Ipsum?

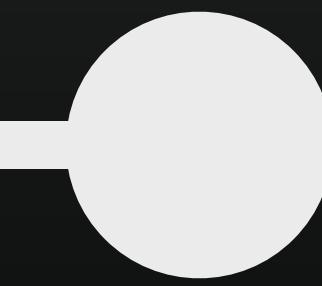
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Until this happened.

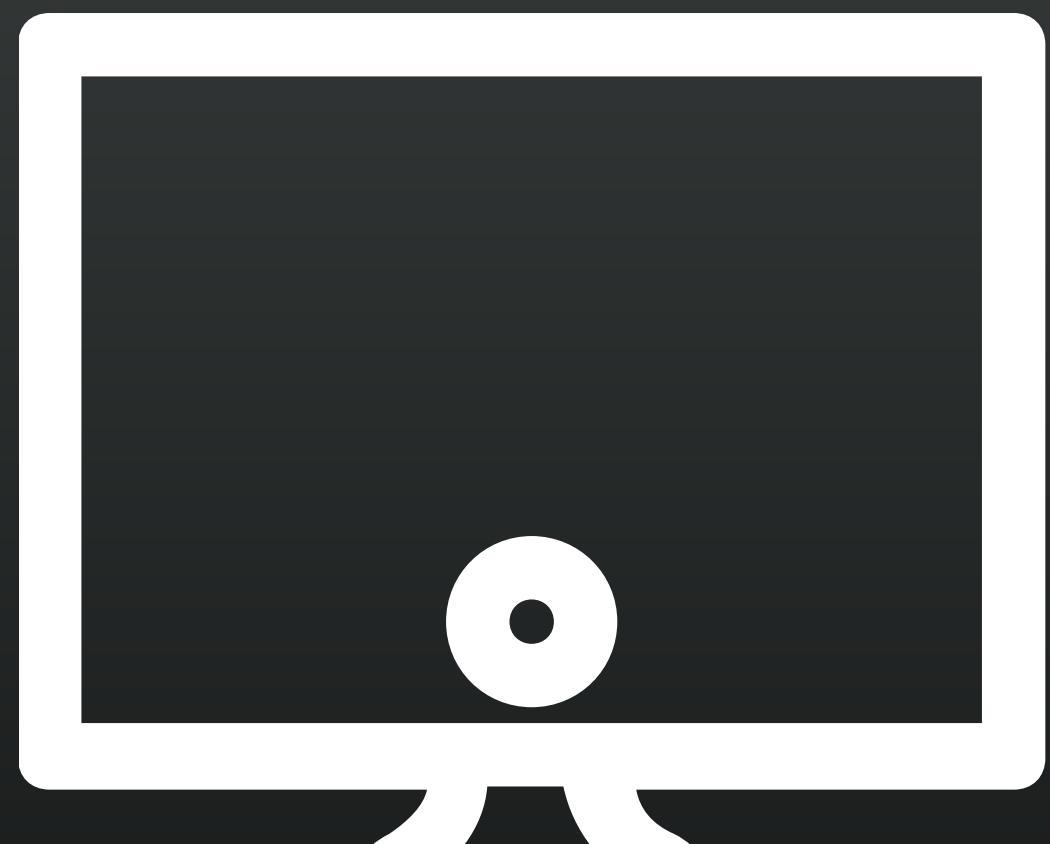


320 × 480

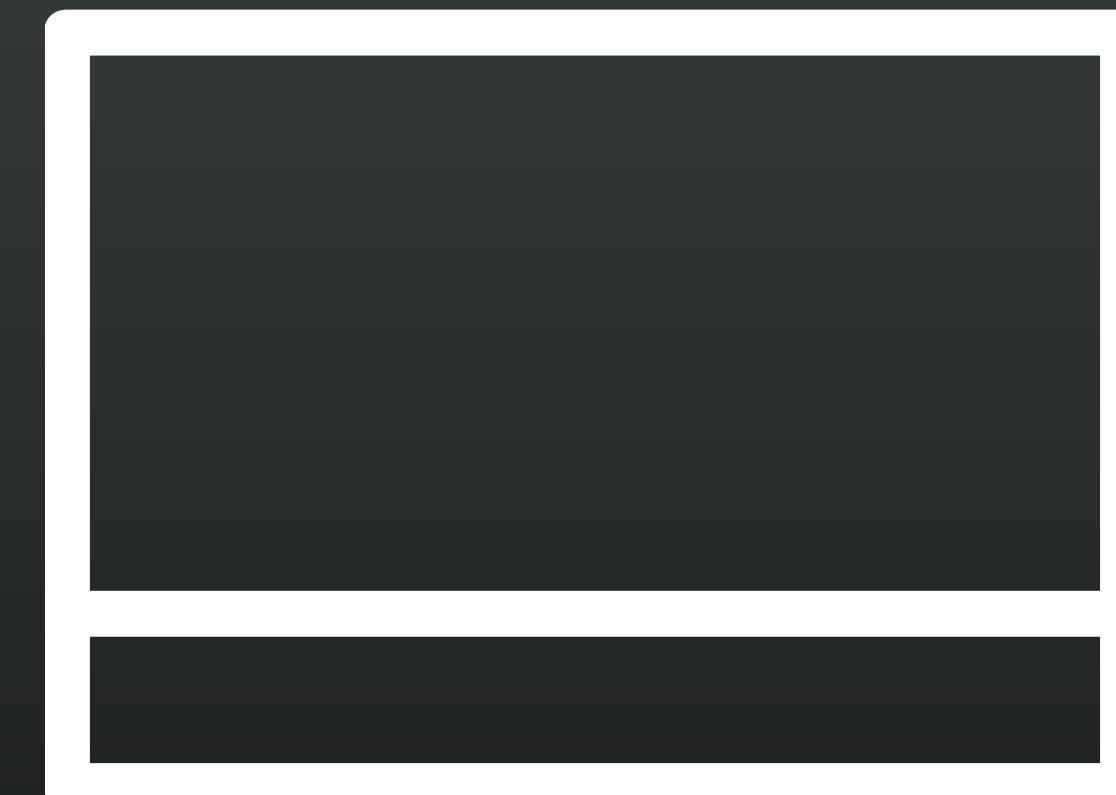


3840 × 2160

Desktops today...



1920 × 1080



7680 × 4320

Chasing screen
sizes is clearly a
fool's errand.

3 years ago!

“ In the second quarter of 2008
we detected 71 different
screen resolutions among our
visitors. In the first quarter of
2014 we detected

1062

One year after the iPhone

— Jason Samuels
IT Manager,
National Council on Family Relations
[Source](#)

“ In 2008, 27 screen resolutions showed up with more than 10 visits, in 2014 that number was **200**

— Jason Samuels
IT Manager,
National Council on Family Relations
[Source](#)

Chasing screen
sizes is clearly a
fool's errand.

Designing
for screens
is hard.

And then there's
everything else.

Your content can and will go
anywhere that's connected



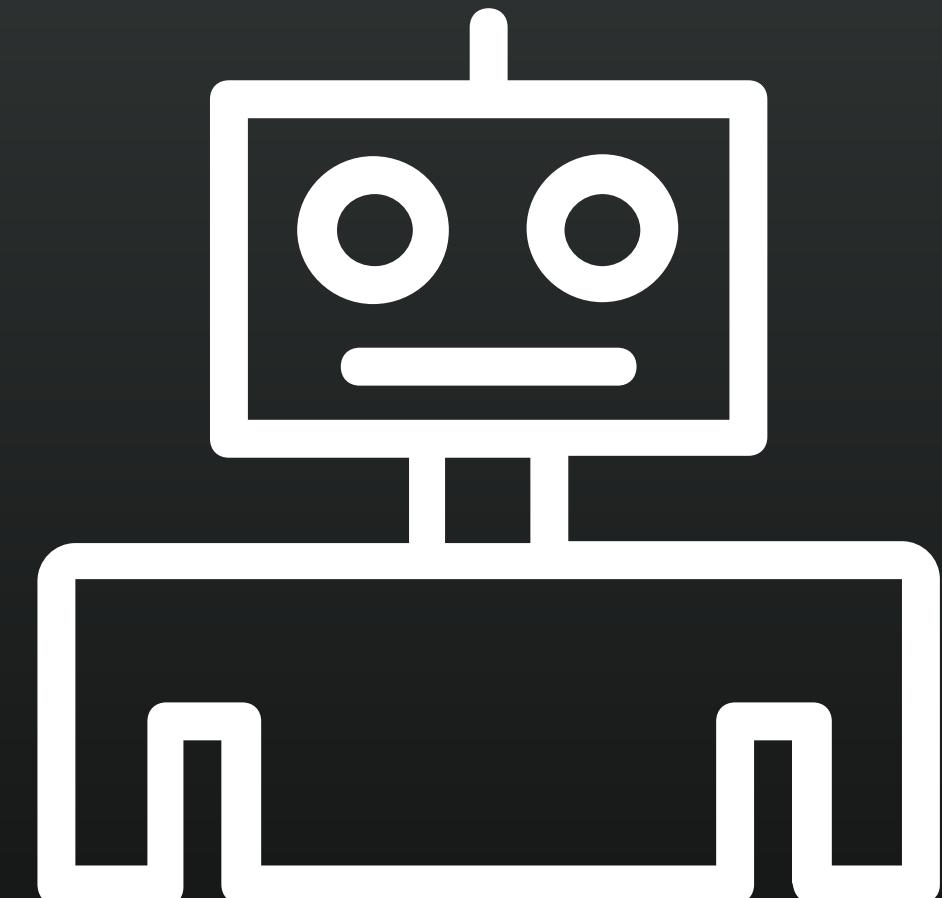
wearables



smart tvs



IoT

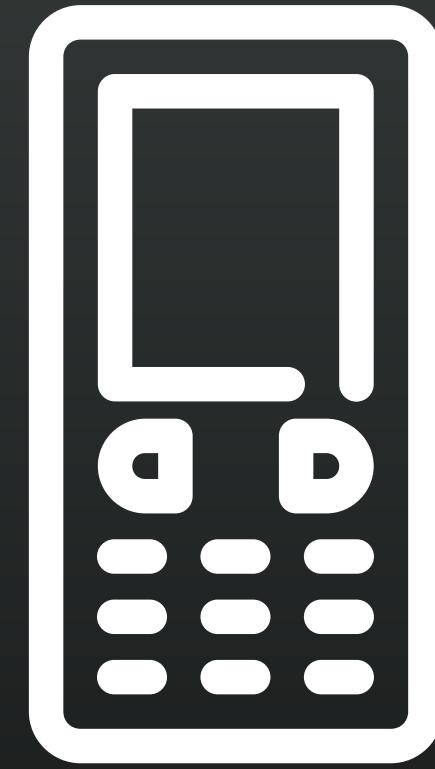


assistants

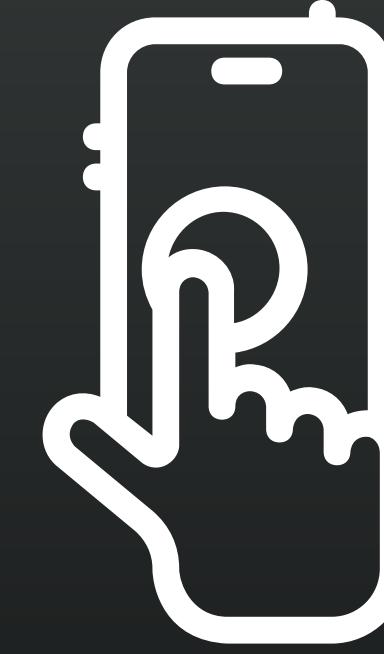
Meaning users will need to interact in different ways



eye tracking



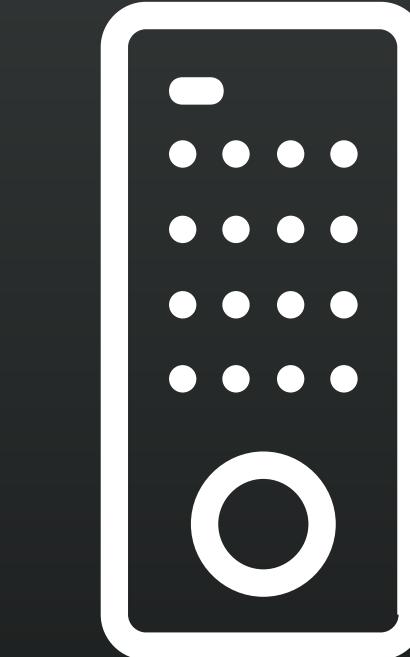
T9



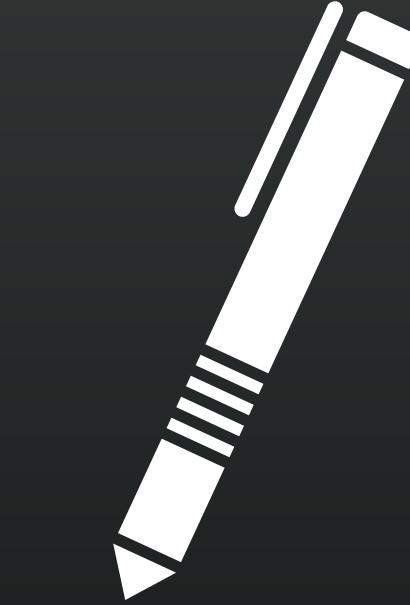
touch



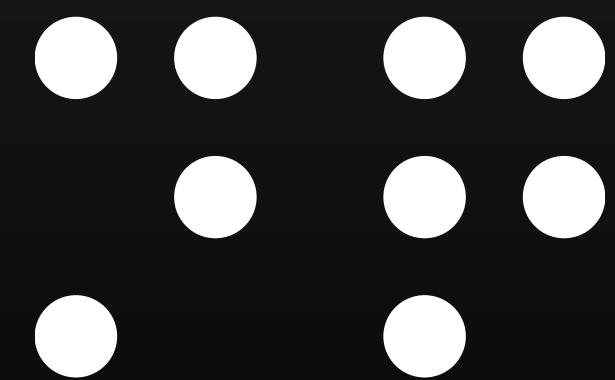
mouse



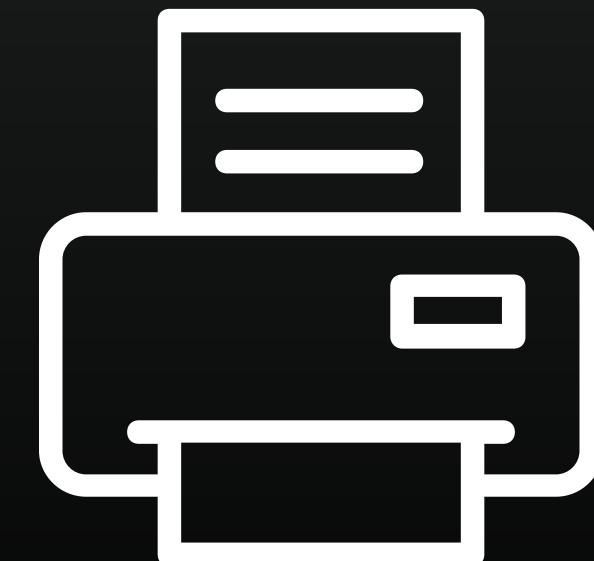
remote



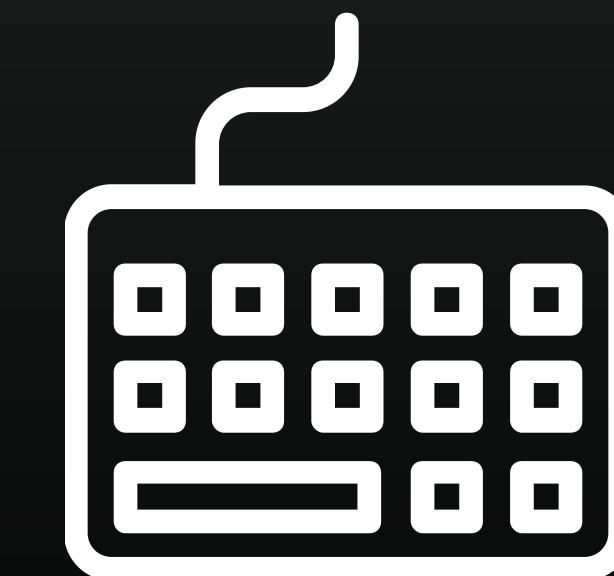
pen



Created from the
National Braille
Association



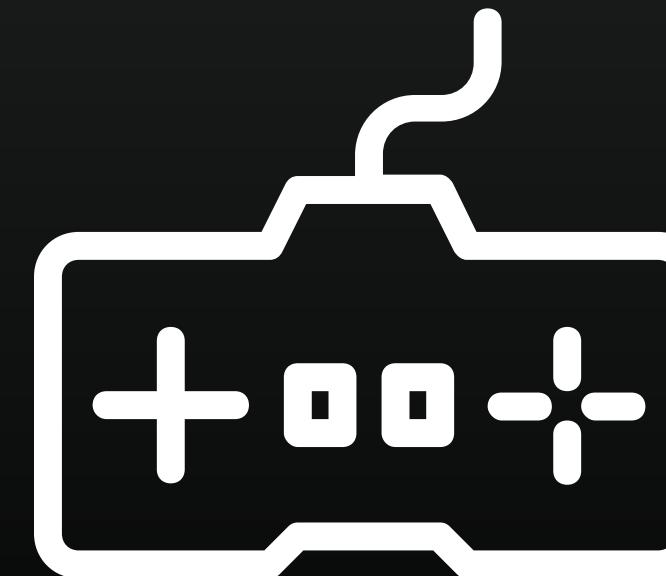
print



keyboard

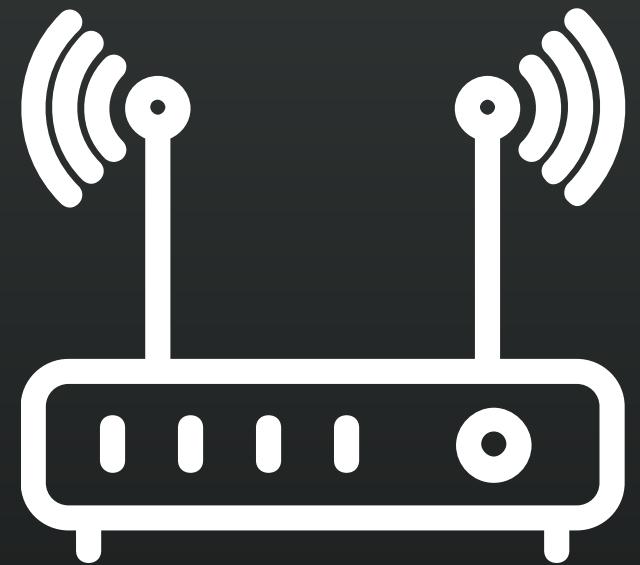


audio



gamepad

Over varied networks and in changing conditions



wifi



hardline



mobile



homes



buildings



cars



buses



trains



airplanes

**And, ultimately, our users all
have different needs too.**



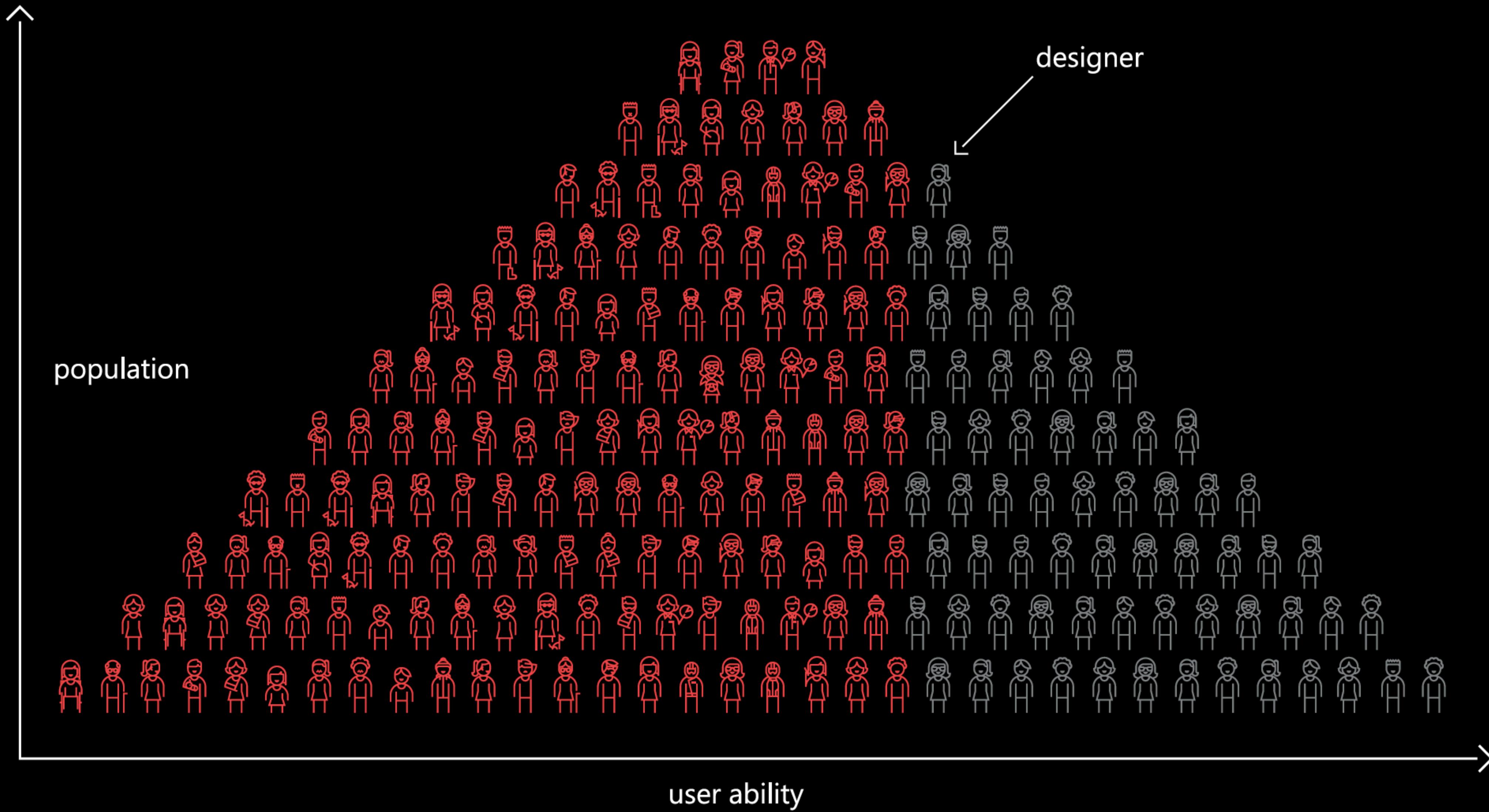
Anyone notice I
haven't even
mentioned
browsers?

;-)

So...?!

Reality check:
Nothing about our users'
experiences of the web
has ever been as
homogenous
as we imagined.

Treat your
ideal scenario
as an **edge case.**



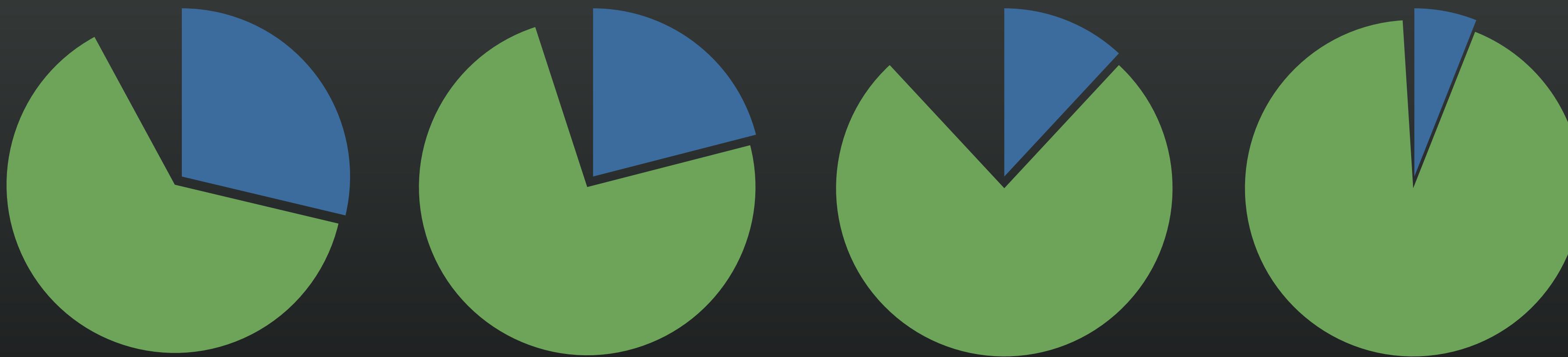
excluded

included





U.S. Smartphone penetration #'s released in January 2017



< \$30k
64%

\$30-50k
74%

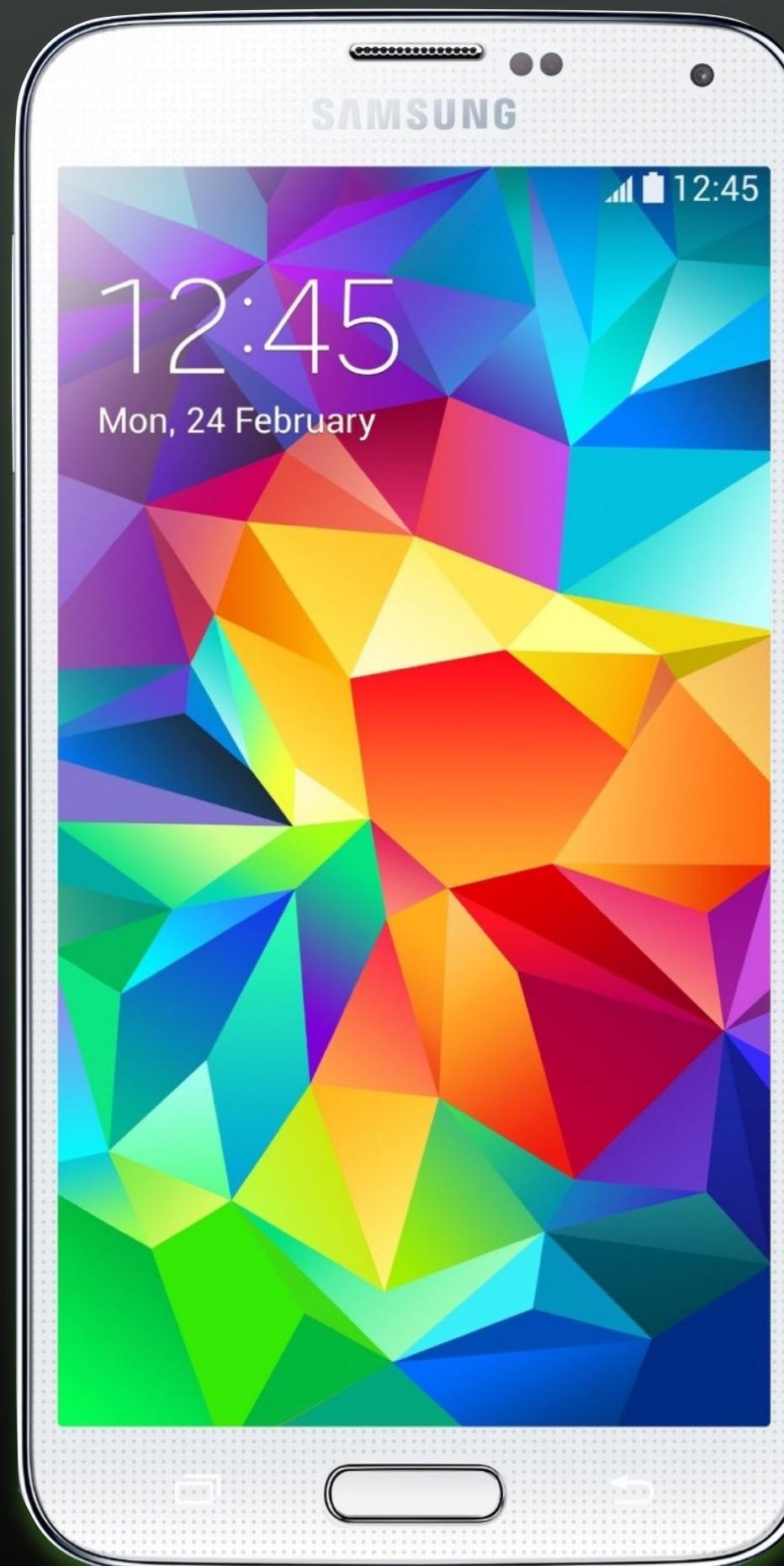
\$50-75k
83%

>\$75k
93%

49.55% of the population

Source

Not all smartphones are equal



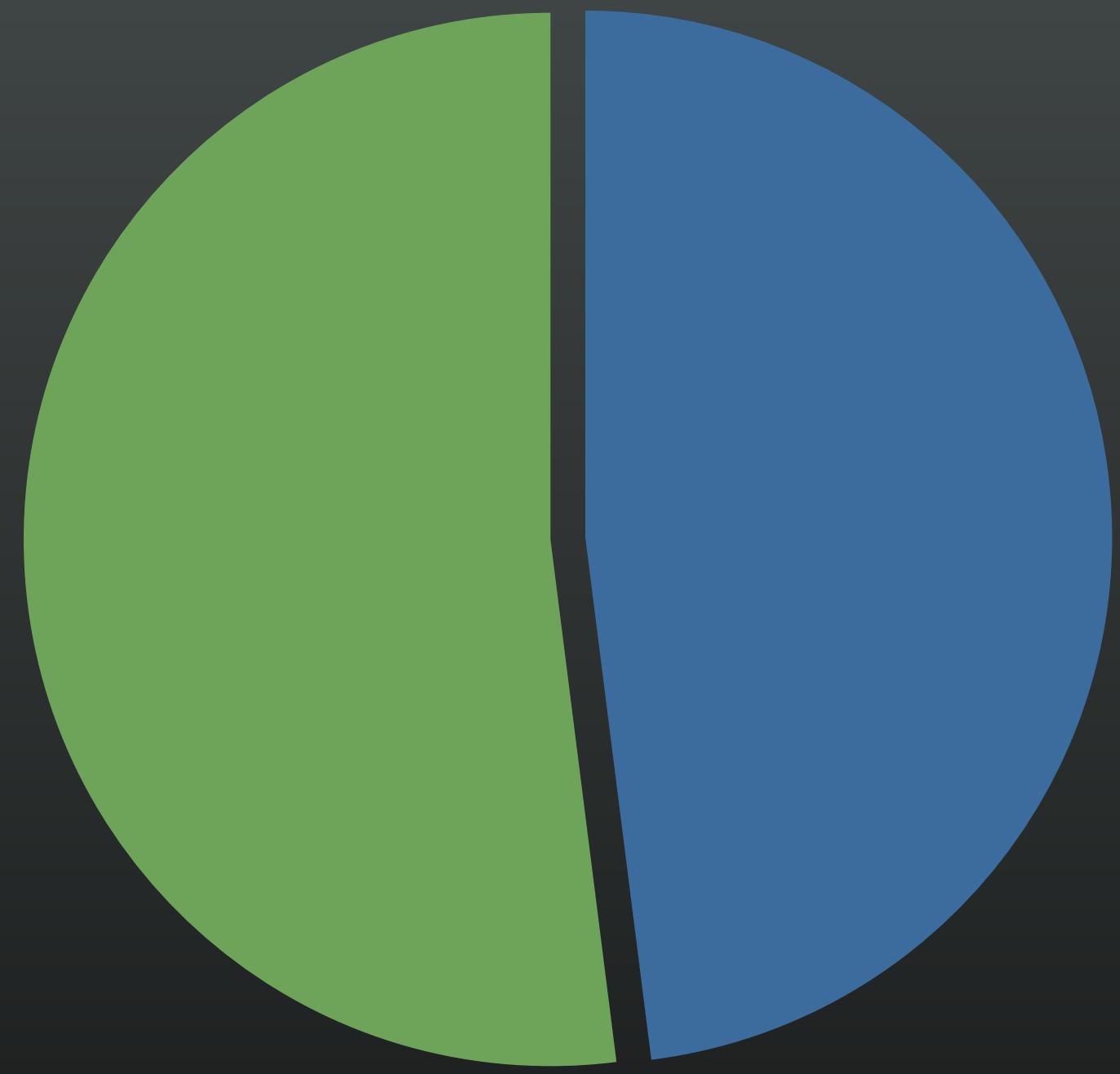
Galaxy S5

5.1" (1920 × 1080)
2GB RAM
16GB Storage
16MP Camera
2.5GHz Quad-core
Android 4.4
\$799

Dash JR K

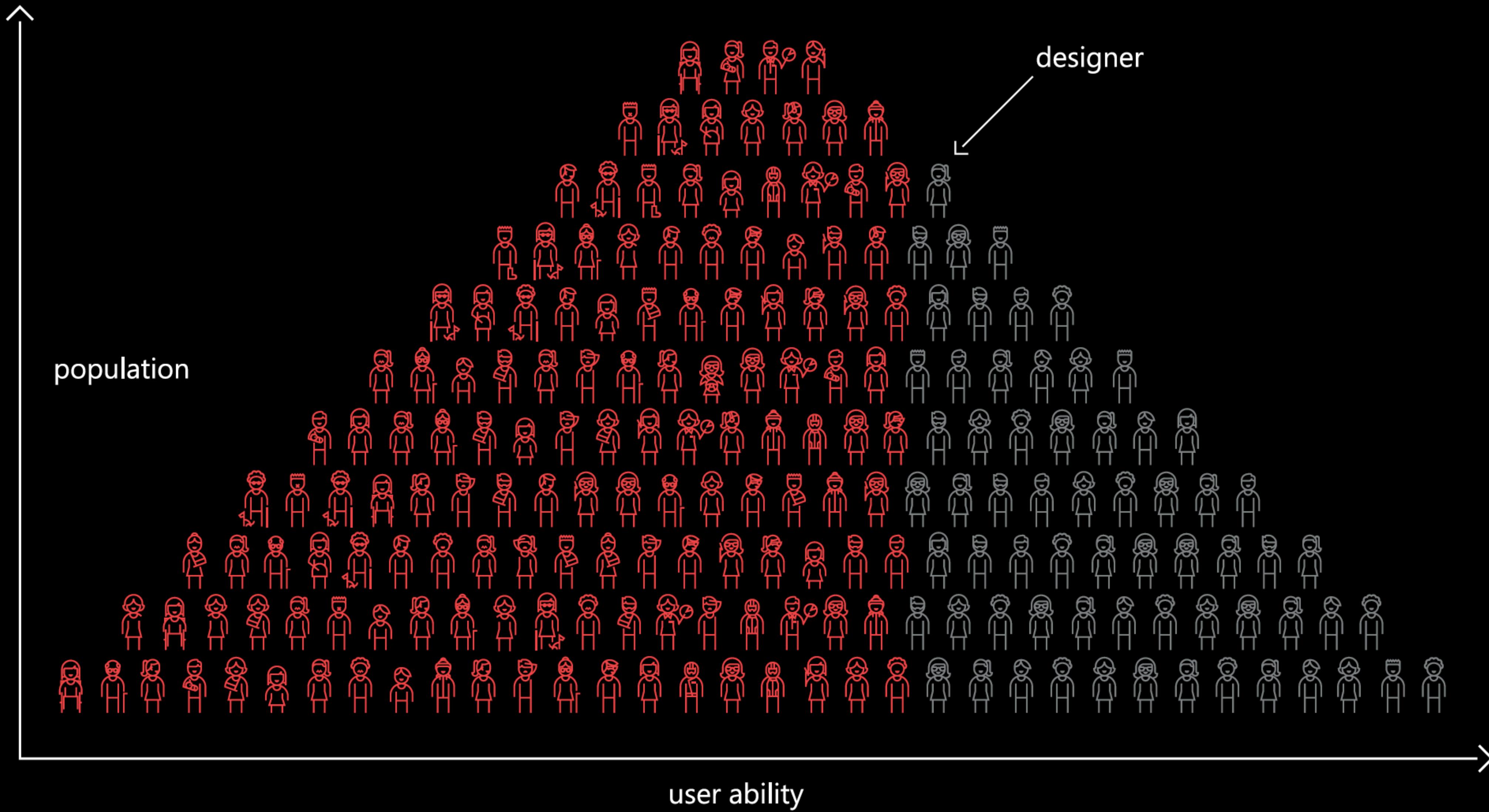
3.5" (480 × 320)
256 MB RAM
512MB Memory
2MP camera
1.3 GHz Dual-core
Android 4.4
\$43





**Smartphone users making < \$30k/yr
experienced app errors
52% of the time**

Source



excluded



included

Inclusive design creates
giant ripples.



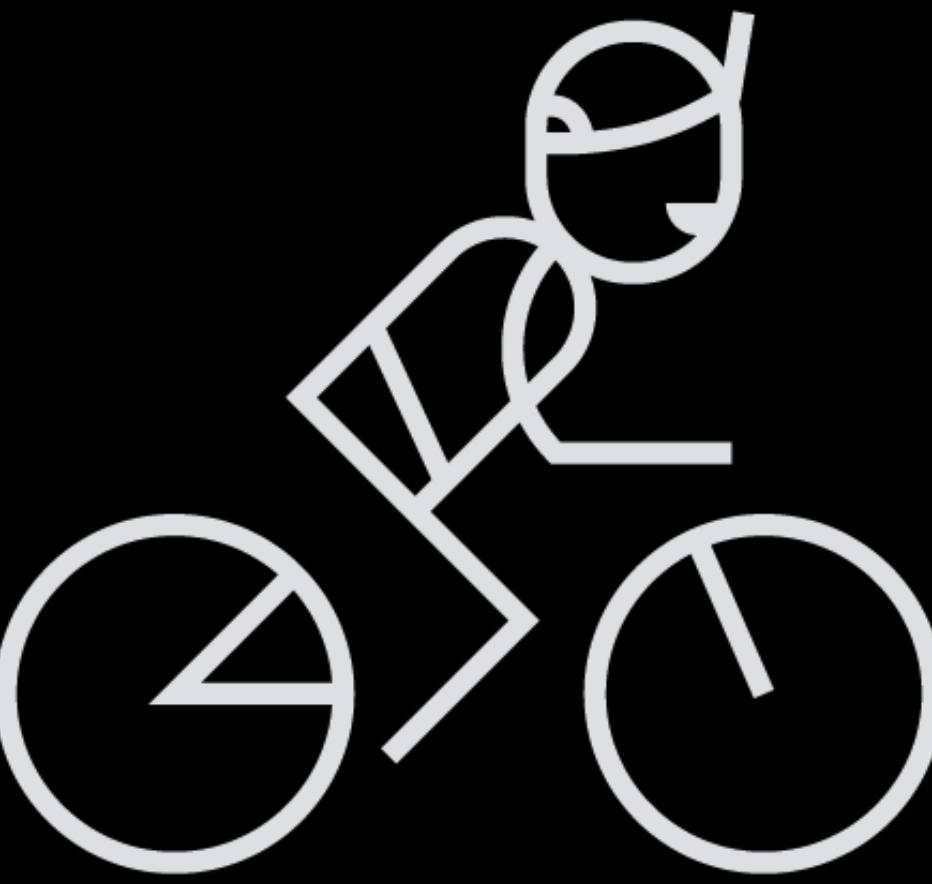
Photo Credit: Dylan Passmore



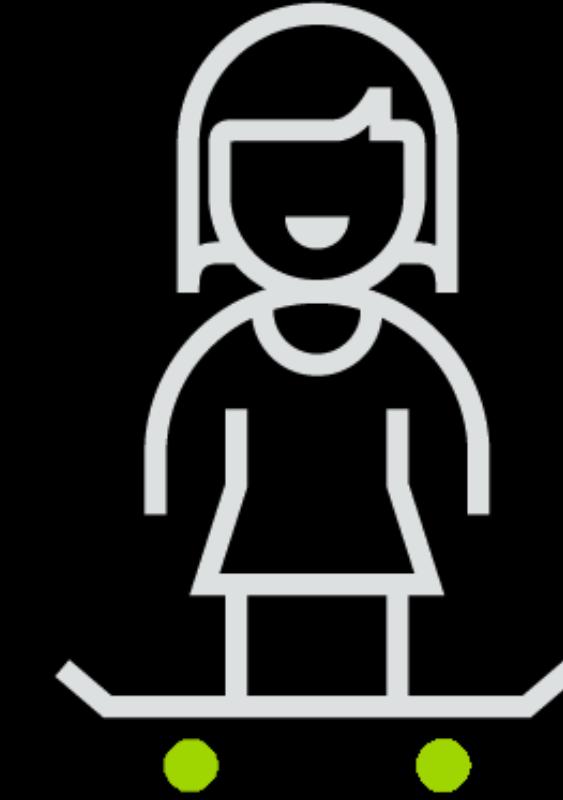
wheelchairs



strollers

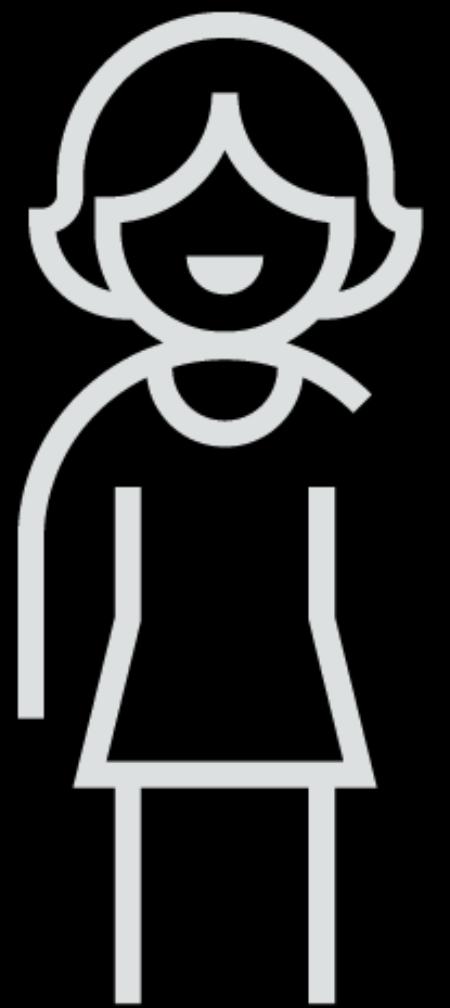


bicycles



skateboards

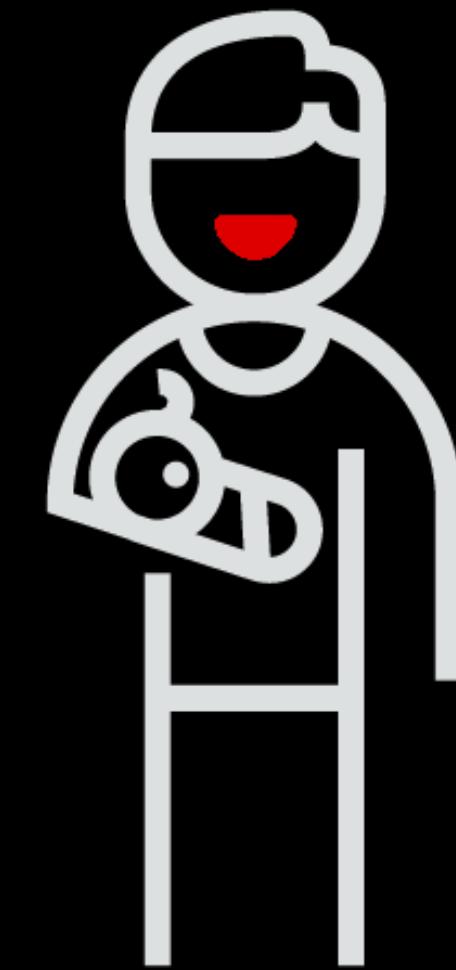




one arm



arm injury

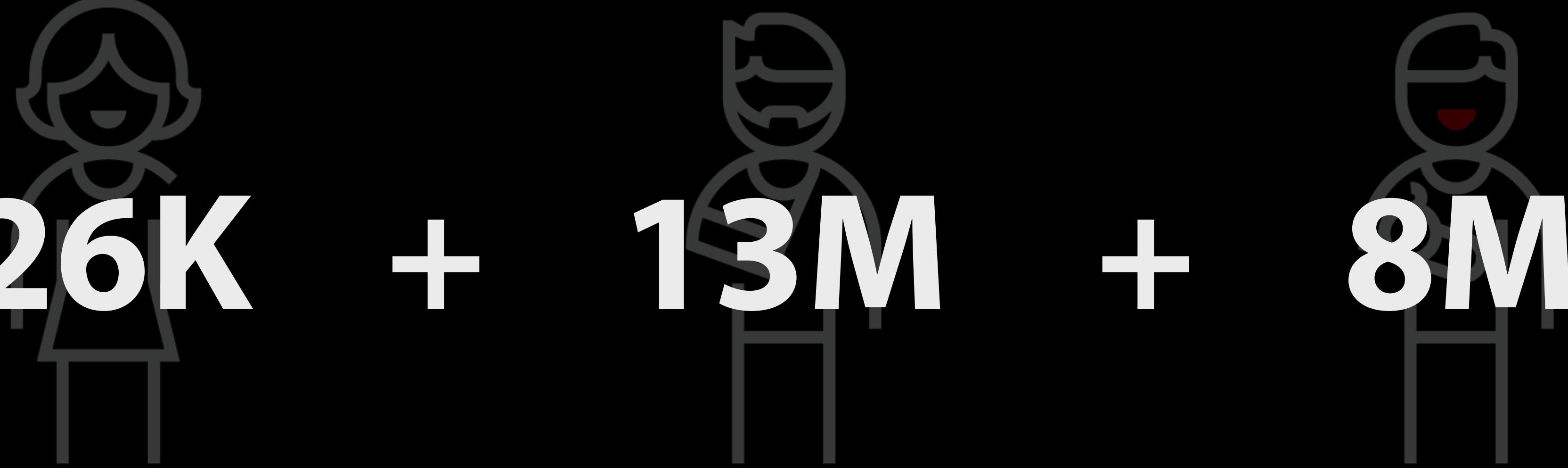


new parent

permanent



situational



26K + 13M + 8M

one arm

arm injury

new parent

permanent



situational

21 Million People

So how can we make
our interfaces work
for everyone?

Approach your job
with an open mind
and empathy for
your users.

We try stuff,
make mistakes,
& learn from them.



Responsive Web Design



Responsive Web Design

- **Fluid Grids**

The overall layout (and grid structure, if used) adapts to the viewport size, filling the width 100% up to a sensible maximum.

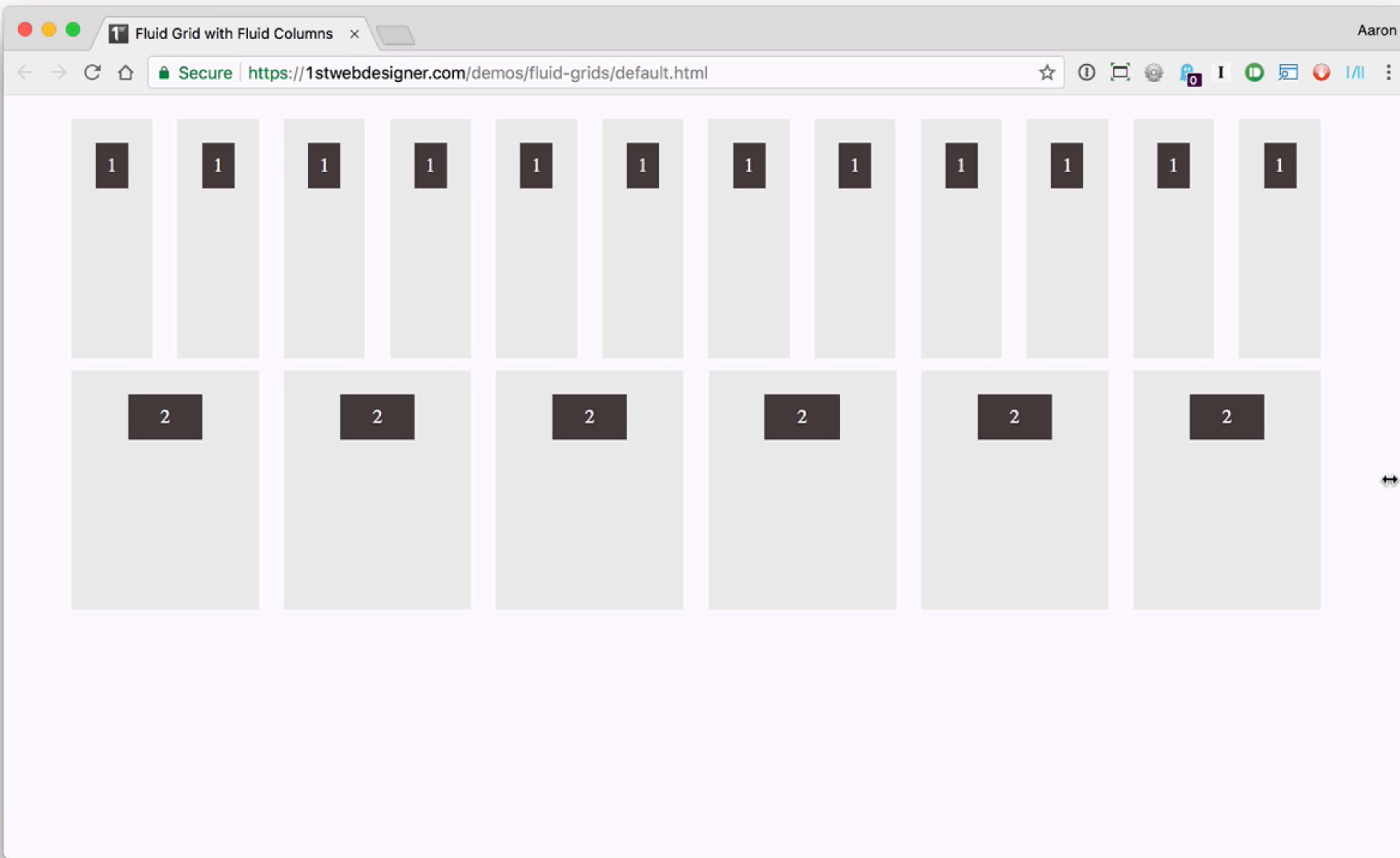
- **Flexible Media**

Images, videos & such scale with the layout and do not break out of their parent

- **Media Queries**

Scoping CSS based on specific characteristics of the screen (width, height, resolution, color depth, etc.)

Fluid Grids



Flexible Media

```
img,  
video {  
  max-width: 100%;  
  height: auto;  
}
```

Ensures the image's
natural aspect ratio
is maintained

Constrains the width
to the width of
the element's parent

Flexible Media

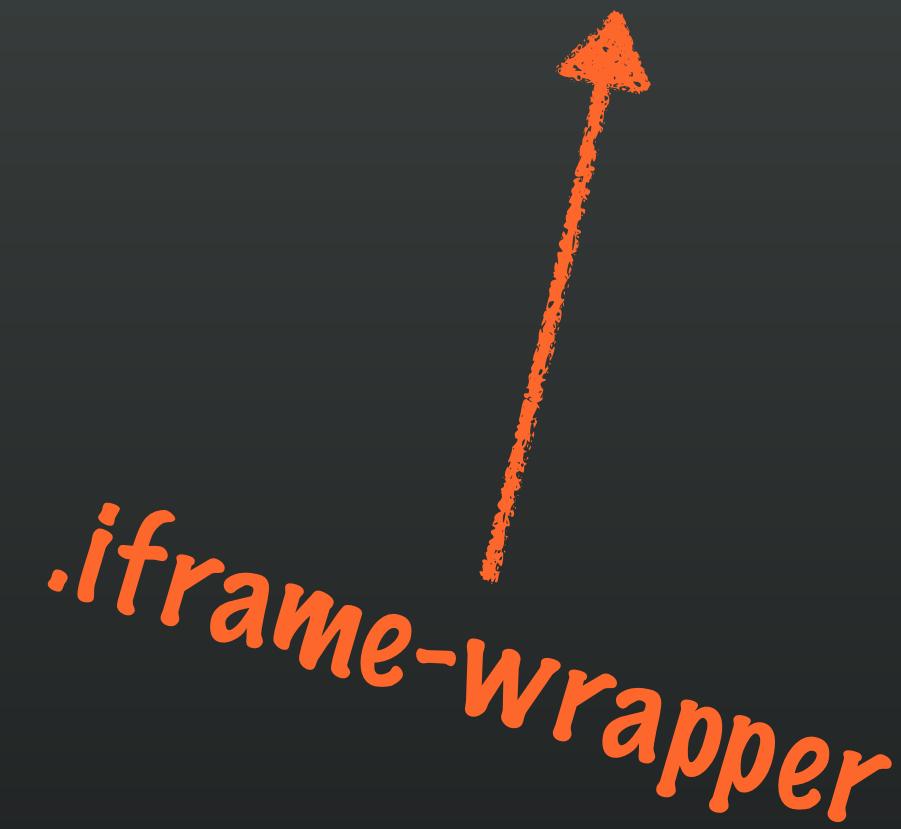
```
iframe {  
  ???  
}
```

Flexible Media

```
.iframe-container {  
    height: 0;  
    overflow: hidden;  
    position: relative;  
}
```

Flexible Media

.iframe-wrapper



Flexible Media



The iframe overflows
and is not shown

Flexible Media

```
.iframe-container {  
    height: 0;  
    overflow: hidden;  
    position: relative;  
}  
iframe {  
    position: absolute;  
    top: 0;  
    left: 0;  
    width: 100%;  
    height: 100%;  
}
```

Flexible Media

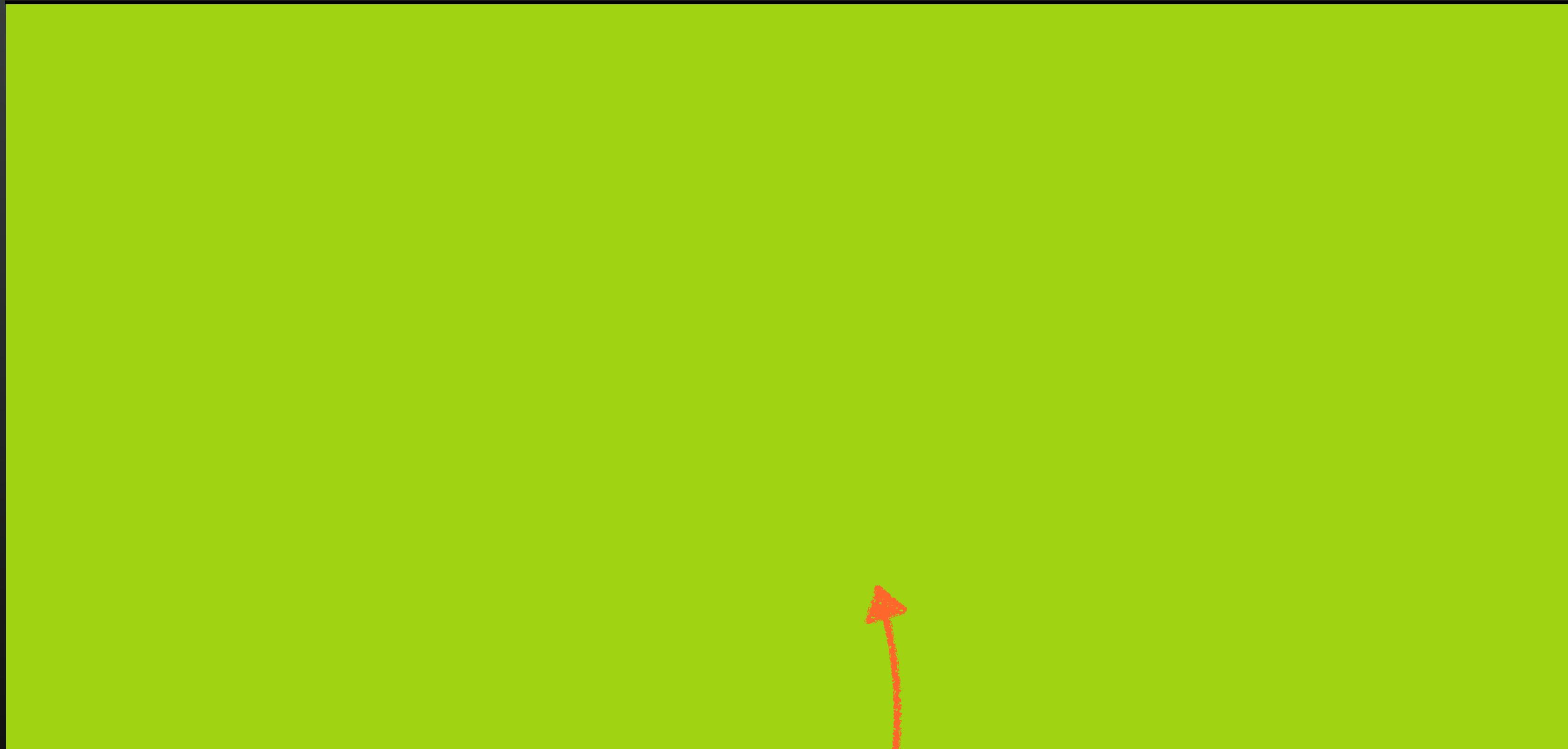


The iframe is 0px high

Flexible Media

```
.iframe-container--16x9 {  
  padding-bottom: 56.25%; /* 9/16*100 */  
}
```

Flexible Media



The iframe is now 16:9

Media Queries

```
@media screen {  
    /* screen styles go here */  
}
```

```
@media print {  
    /* print styles go here */  
}
```

Media Queries

```
@media screen and (min-width: 320px) {  
    /* Only used if in the screen media type  
       and the screen width is at least 320px  
       wide */  
}  
  
@media screen and (max-width: 900px) {  
    /* Only used if in the screen media type  
       and the screen width is less than  
       900px wide */  
}
```

Media Queries

```
@media screen and (min-width: 320px)
  and (max-width: 900px) {
  /* Only used if in the screen media type
  and the screen width is at least 320px
  and less than 900px wide */
}
```

Media Queries

```
@media (min-resolution: 192dpi) {  
    /* Only used if the screen resolution is  
     * equivalent to 192 dots per inch  
     * ("retina") */  
}
```

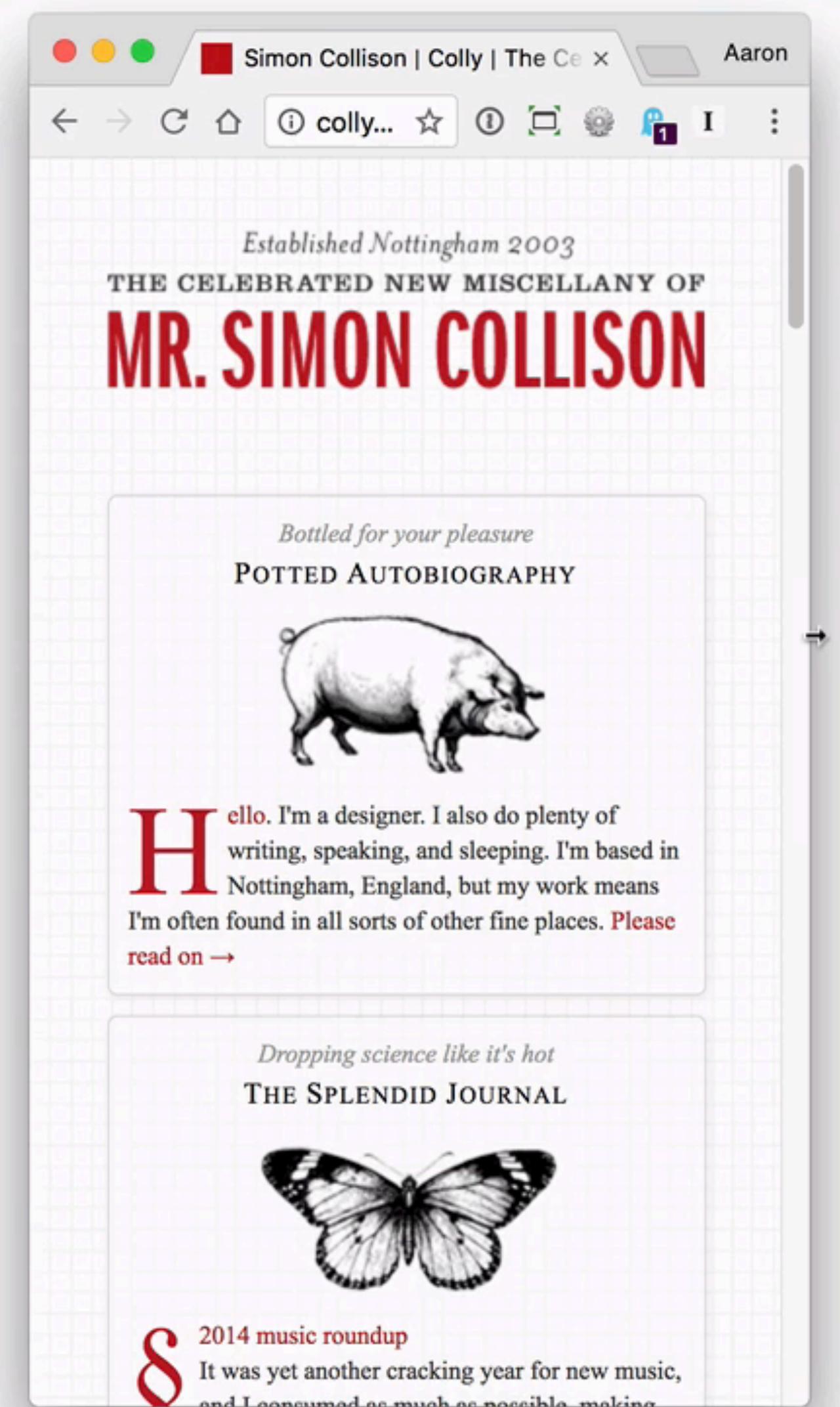
How to pick media queries

1. Begin designing with the smallest size you want to support.
2. Stretch the browser window wider until it looks bad.
3. Add a media query and adjust the design.
4. Go back to Step 2.

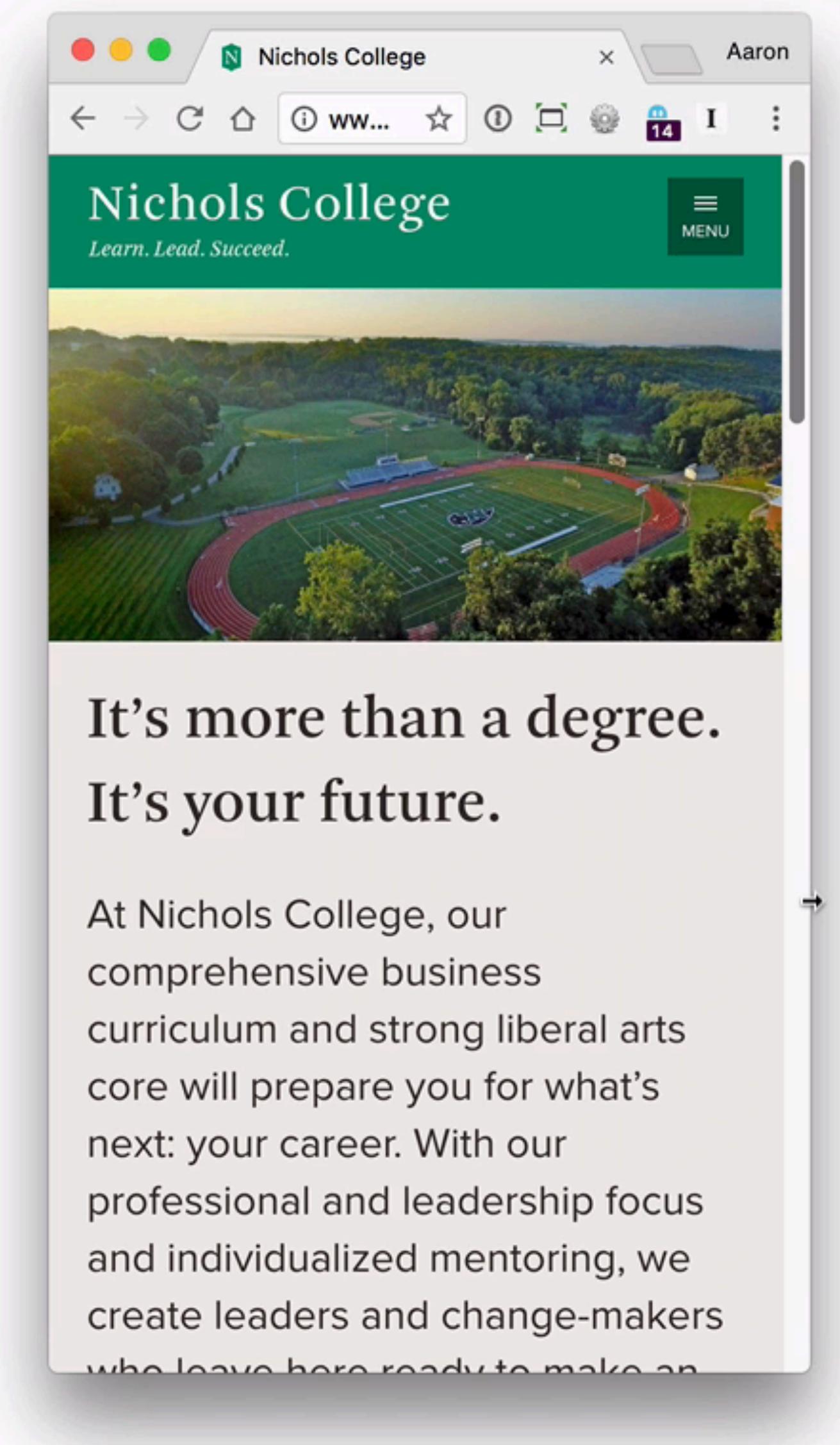
Your media queries
should be **unique**
to your project.

Adaptive Layouts vs. Responsive Layouts

Adaptive Layout



Responsive Layout



Naming things is hard.

- Responsive Web Design
- Adaptive Web Design
- Progressive Enhancement
- Aggressive Enhancement
- Responsible Web Design



Adaptive

Responsive

Mobile-first

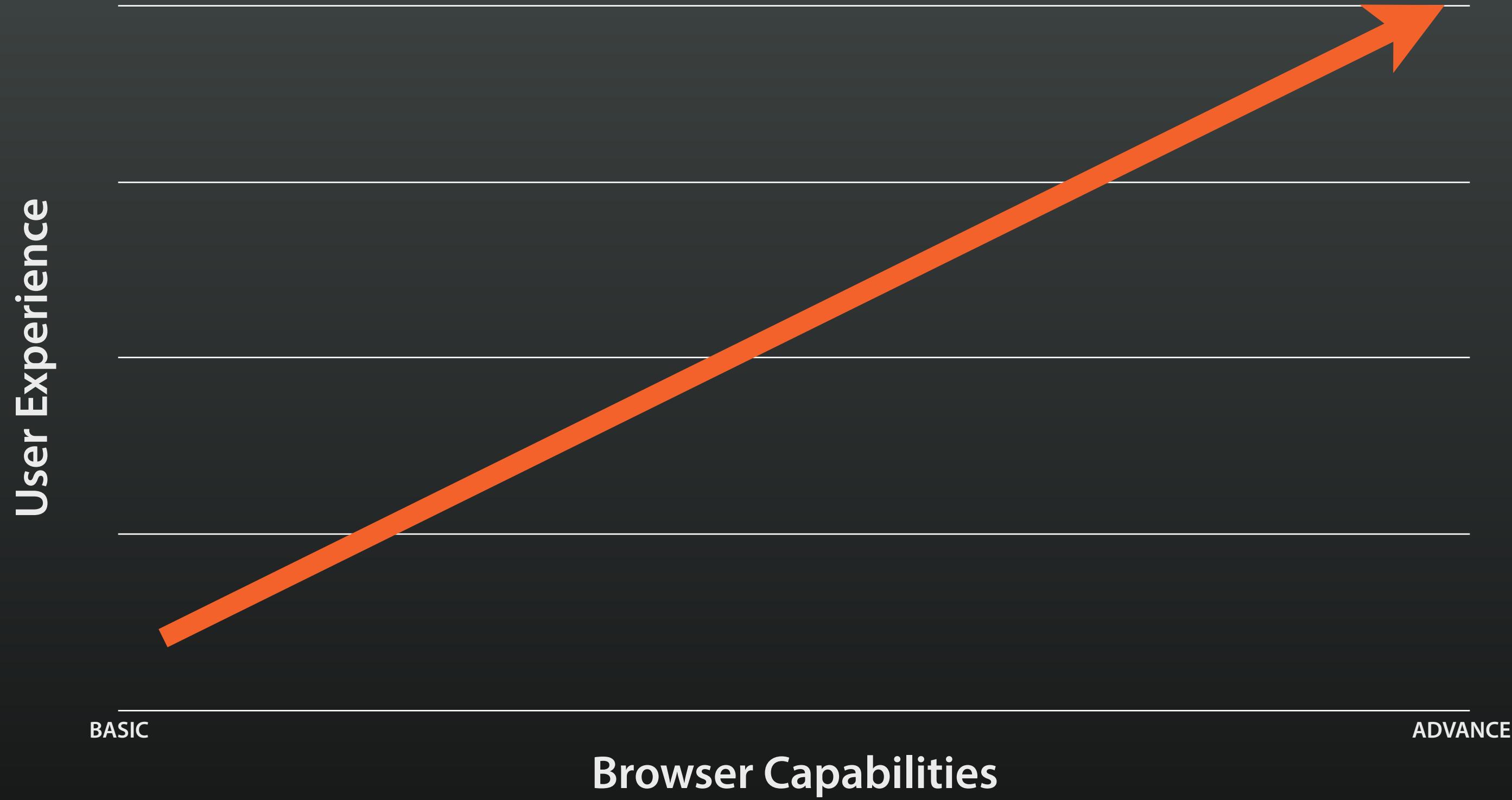
Accessible

Device Agnostic

Cross-platform

Performant

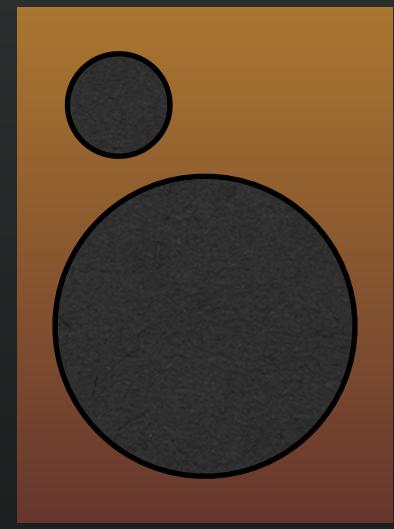
Progressive Enhancement



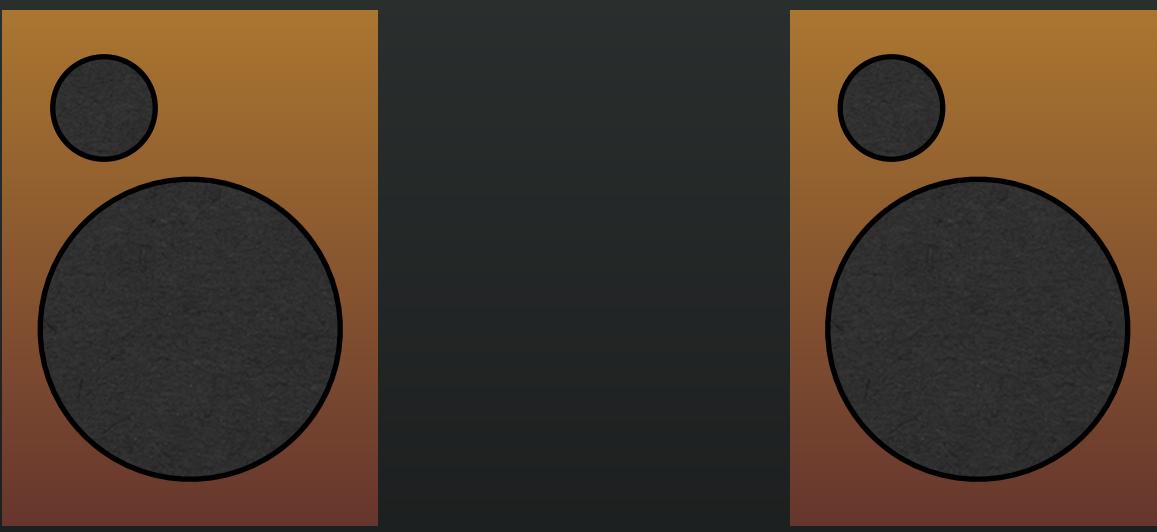
*I like an escalator because
an escalator can never break,
it can only become stairs.*

— Mitch Hedberg



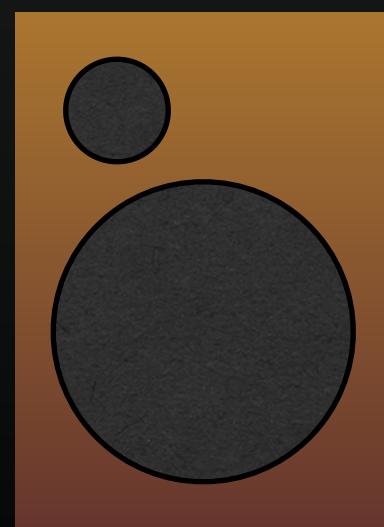
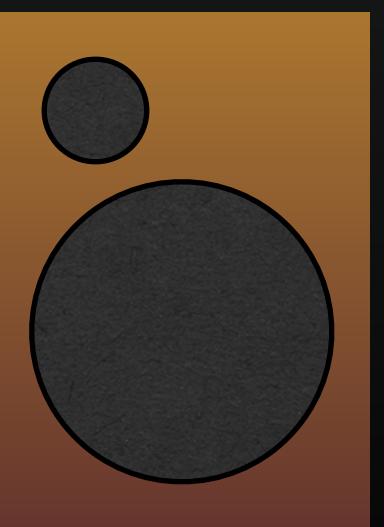
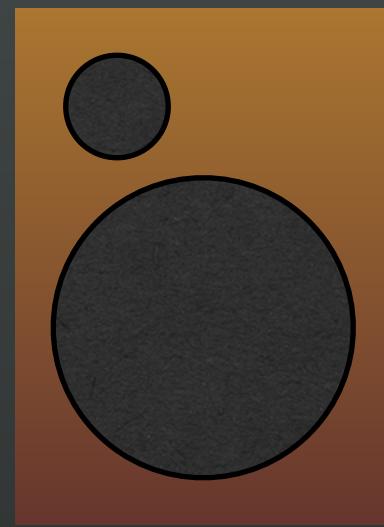
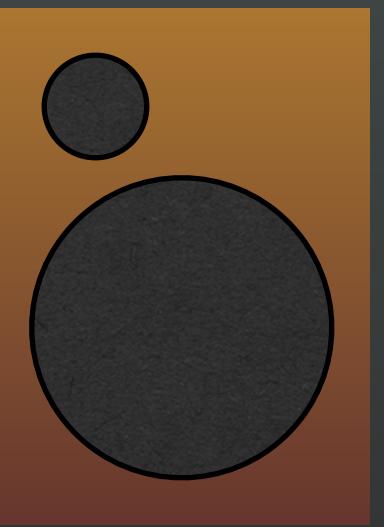


Mono



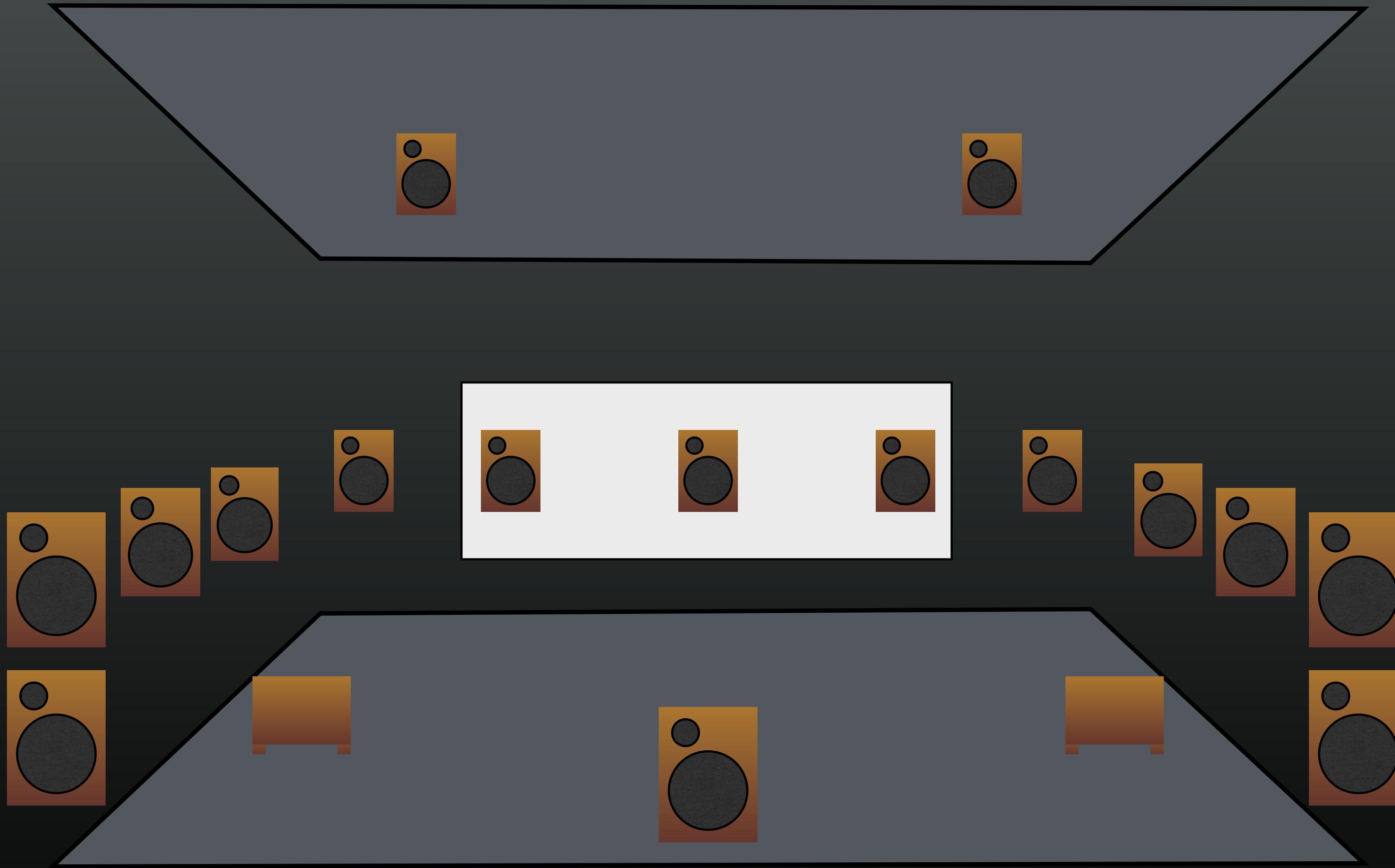
Stereo

Surround Sound

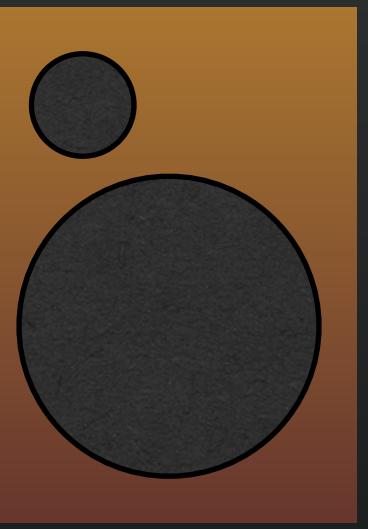


5.1 Channel Surround

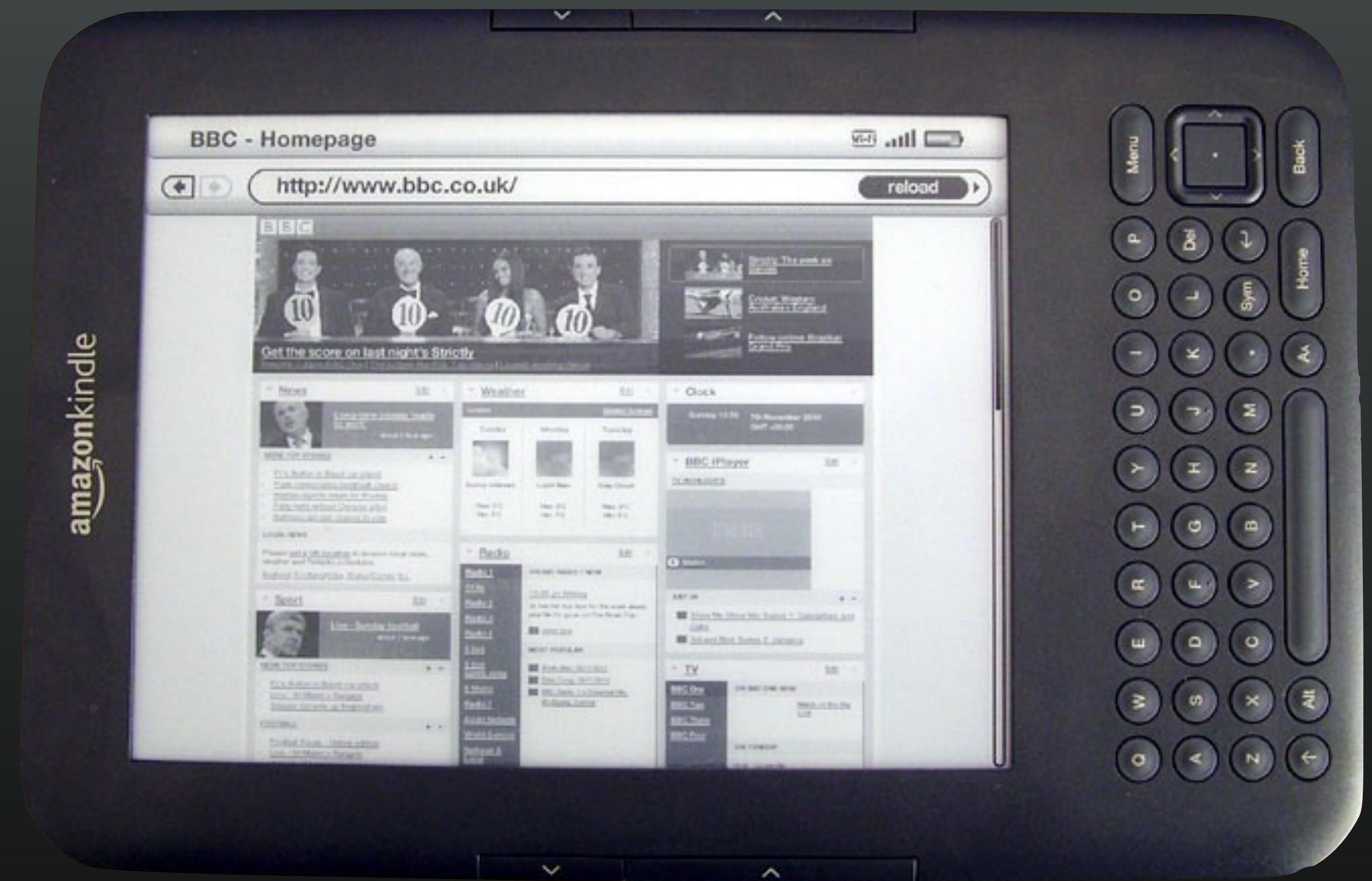
7.1 Channel Surround



16.2 Channel Surround



**Sometimes it's
all you need**



Kindle 3 = Free global data

Graceful Degradation

Modern Browsers



Older Browsers

Modern Browsers



Older Browsers



Andrew Wight
@AndrewUX

Progressive enhancement is an escalator that becomes stairs.
Graceful degradation is building a lift then having to add
stairs.

14 May 12

Reply Retweet Favorite

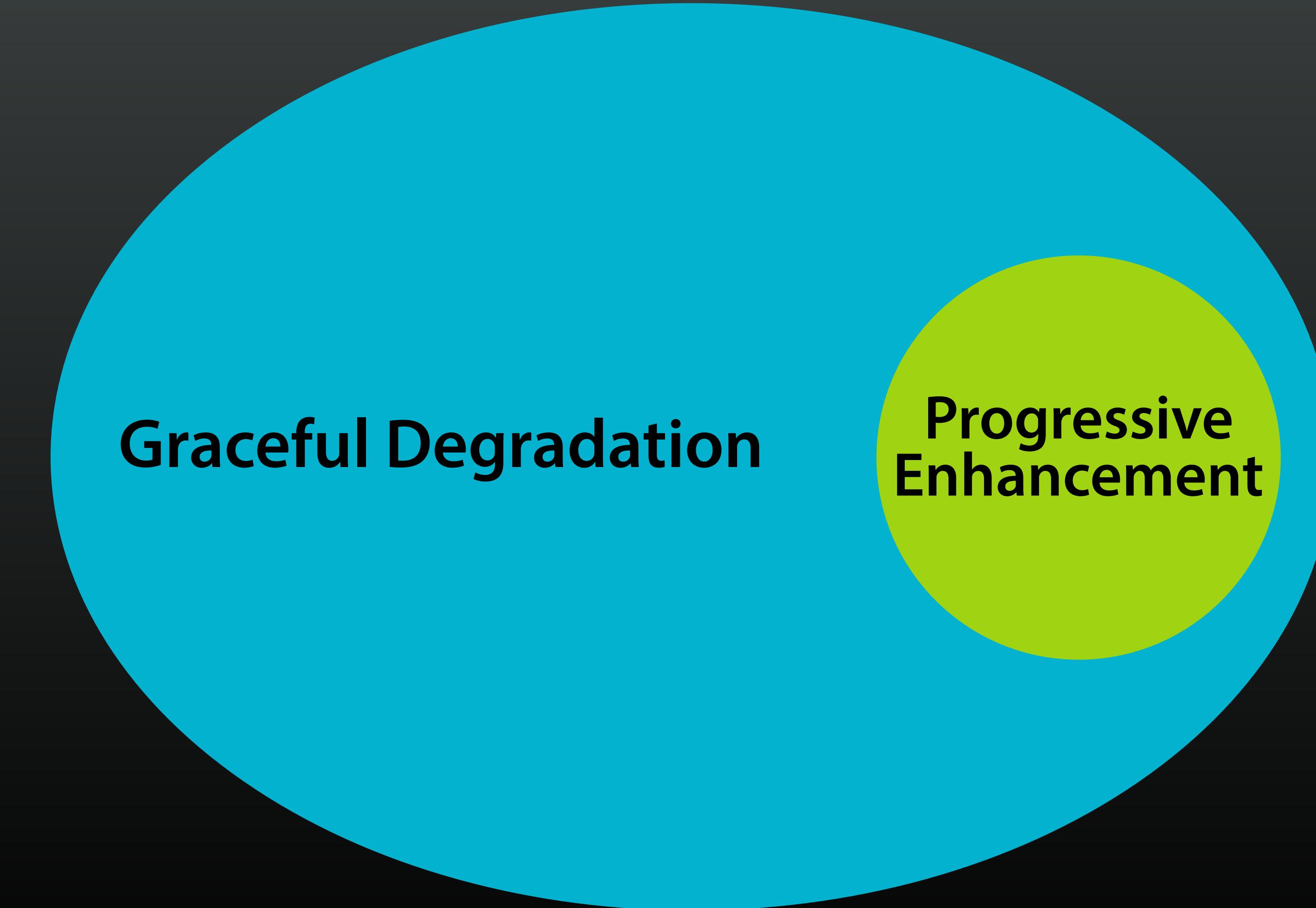


I'm sorry,
you need
more channels



**YOU MUST BE THIS TALL
TO RIDE WITH AN ADULT**

They're actually related





Technological
restrictions

[News](#) | [US](#) | [World](#) | [Sports](#) | [Comment](#) | [Culture](#) | [Business](#) | [Money](#) | [Environment](#) | [Science](#) | [Travel](#) | [Tech](#) | [Media](#) | [Life & style](#) | [Data](#)

[News](#) > [Technology](#)

Sky's internet service mistakenly blocks web-critical plugin

Sky blocked jQuery, a plugin crucial to the operation of many of the internet's biggest websites, after wrongly classifying it as malware on Sunday night

Alex Hern

[Follow @alexhern](#)

[Follow @guardiantech](#)

[theguardian.com](#), Tuesday 28 January 2014 07.51 EST

[Jump to comments \(42\)](#)



Parts of the web were broken after a crucial plugin was mistakenly blocked.
Photograph: Culture RM/Alamy

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[Email](#)

[Print](#) [Email](#) [Gmail](#)

Technology

Web filtering · Internet · Broadband · Malware

Media

BSkyB

Business

BSkyB

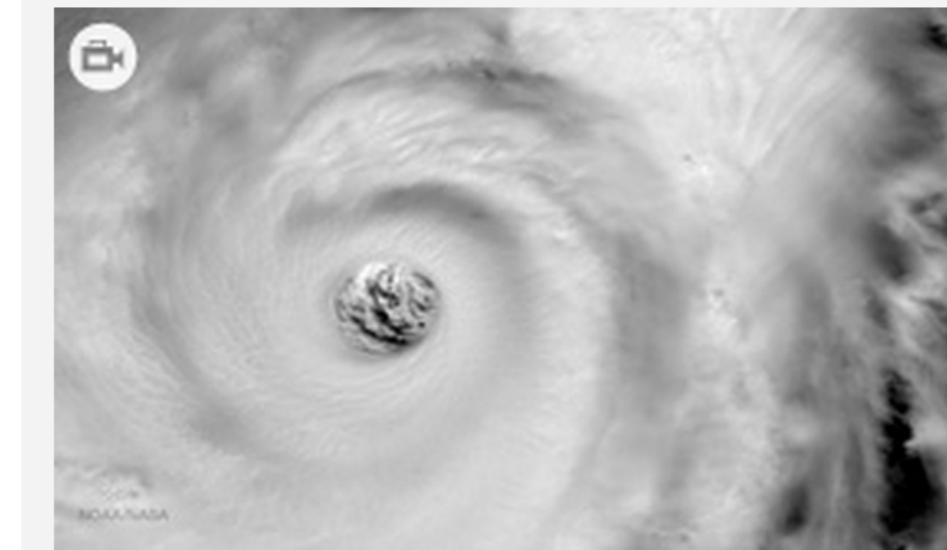
More news

More on this story



BSkyB signs new five-year deal for exclusive rights to HBO TV catalogue
Broadcaster struck

Today's best video



Japan's Typhoon Vongfong seen from International Space Station - video

Nasa footage shows the powerful eye of Typhoon Vongfong as it makes its way towards Okinawa, Japan



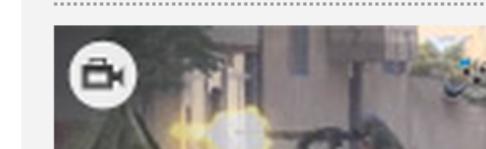
Ukrainian Darth Vader makes election run

Who knew Star Wars villain Darth Vader was in fact a Ukrainian Cossack at heart?



Robotic suit helps explore ancient wreck

New artifacts found in Greek island shipwreck, which sank in first century BC



Isis video 'shows street battle in Kobani'

Video posted on social

Sections ≡

The Washington Post

Search



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Subscribe

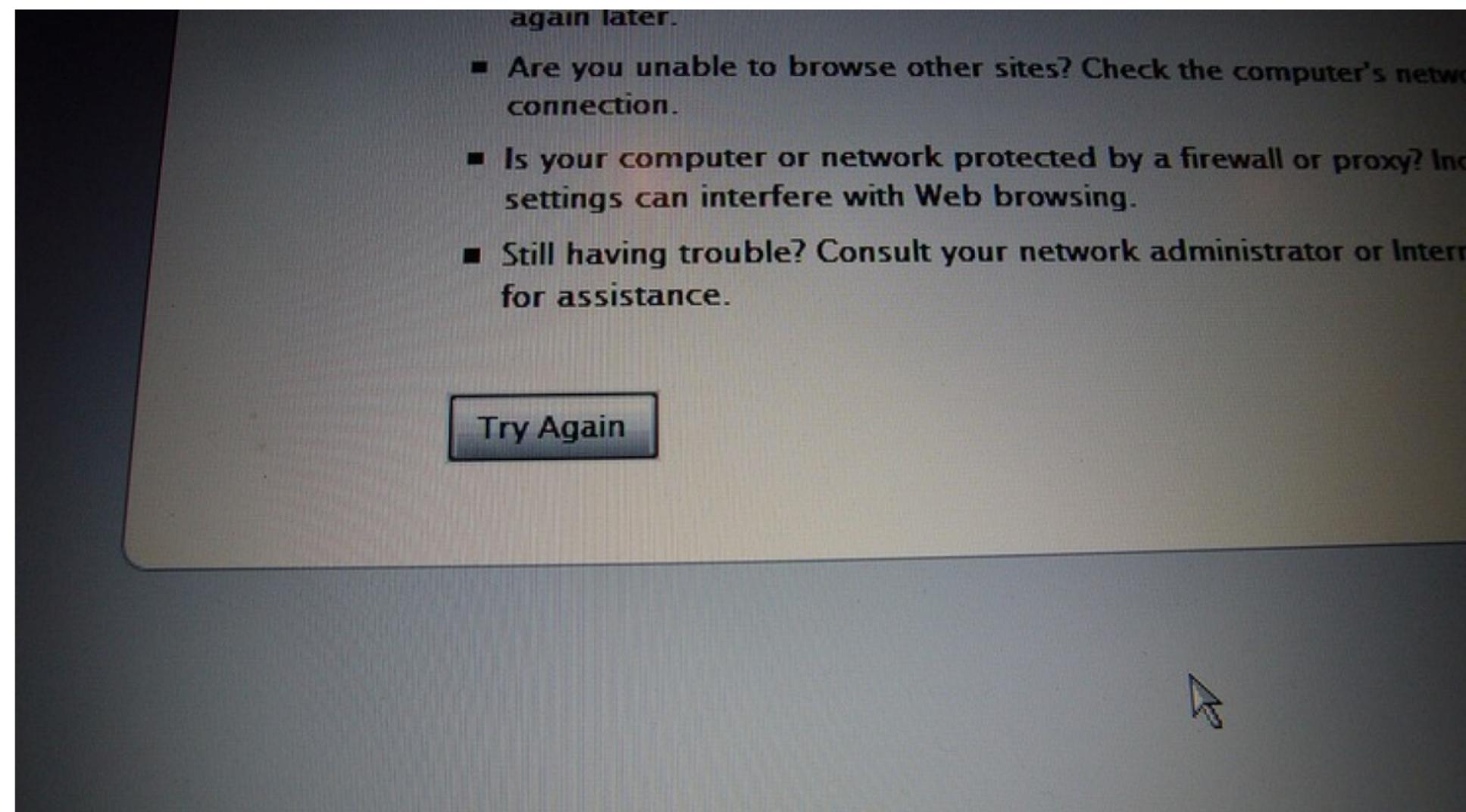
The Switch

FCC to Marriott: No, you can't force your customers onto terrible hotel WiFi



By Brian Fung October 3 Follow @b_fung

Advertisement



HTTP Error 413: Request Entity Too Large

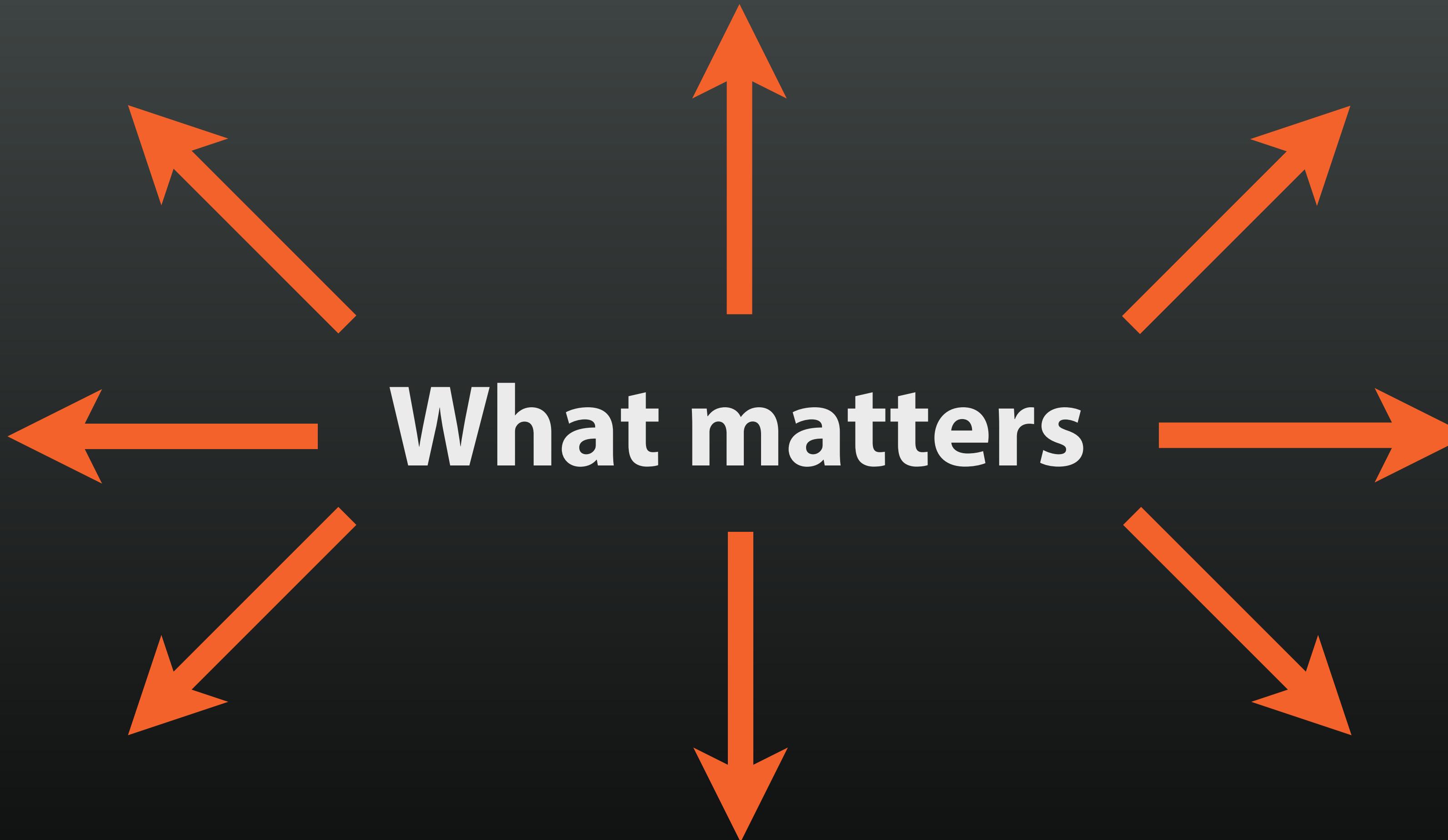
The page you requested could not be loaded. Please try loading a different page.

OK

Details

Loading...

What matters



“Mobile first”

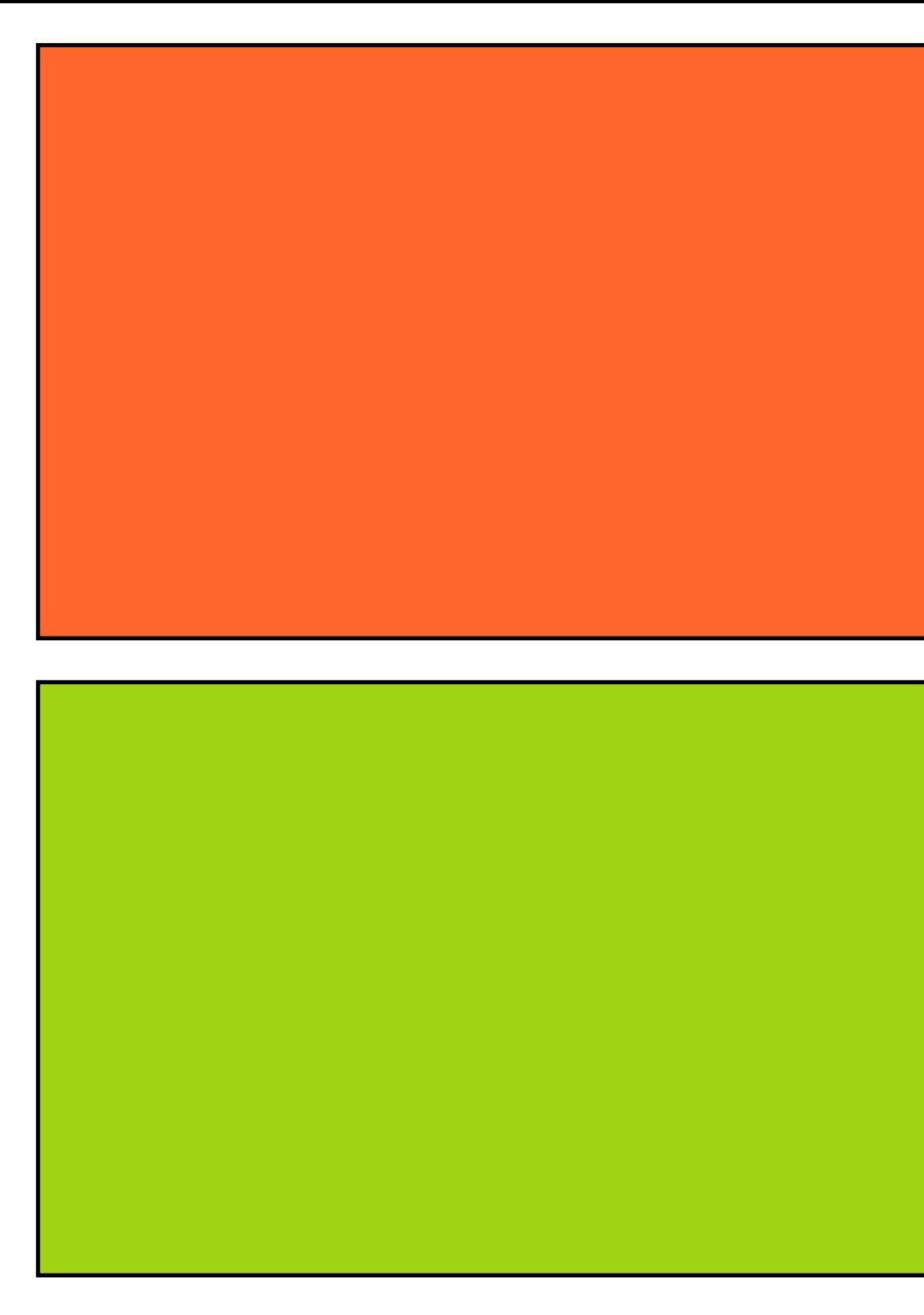
“Mobile first”
vs.
“Desktop first”

“Small screen first”

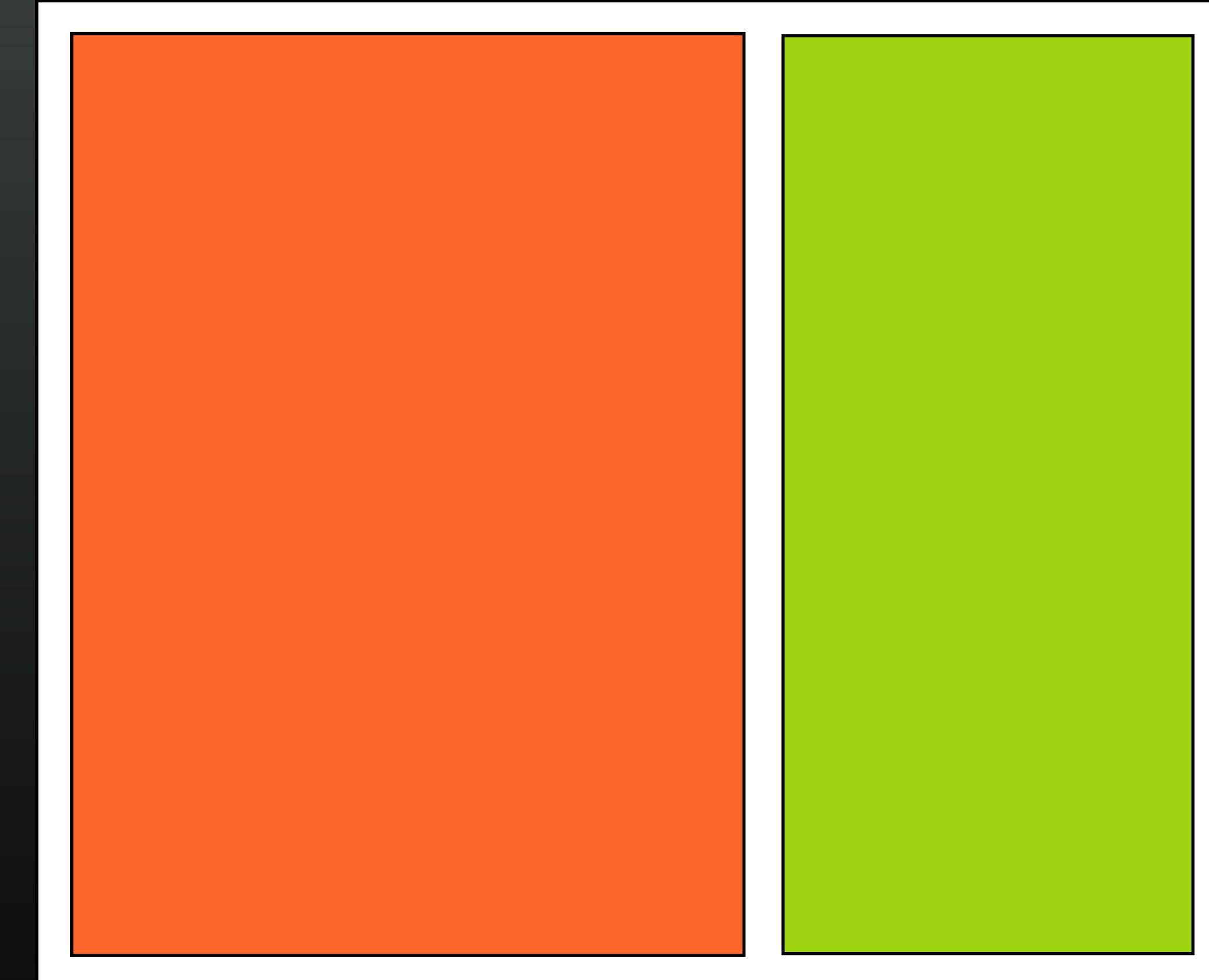
vs.

“Large screen first”

A quick comparison



narrow



wide

Compare: large screen first

```
.primary {  
    float: left;  
    width: 68%;  
}  
.secondary {  
    float: right;  
    width: 32%;  
}  
  
@media (max-width:599px) {  
    .primary, .secondary {  
        float: none;  
        width: auto;  
    }  
}
```

Compare: small screen first

```
@media (min-width:600px) {  
    .primary {  
        float: left;  
        width: 68%;  
    }  
    .secondary {  
        float: right;  
        width: 32%;  
    }  
}
```

Ultimately,
it's about working
with layout defaults.

How to pick media queries

1. Begin designing with the smallest size you want to support.
2. Stretch the browser window wider until it looks bad.
3. Add a media query and adjust the design.
4. Go back to Step 2.

Now for **your**
part in this

Option 1: Carousel/Slider

The image shows the homepage of the Fraunhofer-Gesellschaft website. At the top left is the Fraunhofer logo. To its right are links for JOBS / CAREER, PRESS, CONTACT, and DEUTSCH. A search icon is also present. The main navigation bar includes links for ABOUT FRAUNHOFER, INSTITUTES, RESEARCH, MEDIA CENTER, and EVENTS AND TRADE FAIRS. Below the navigation is a large banner image depicting a futuristic cityscape at night with binary code floating in the air. On the left side of the banner, there is a blue overlay containing the text "Smart Data – The stuff innovations are made of" and a paragraph about digitalization. A "MORE INFO" button and a small photo credit are also visible. The overall design uses a clean, modern aesthetic with a focus on technology and innovation.

Fraunhofer

Fraunhofer-Gesellschaft

JOBS / CAREER PRESS CONTACT DEUTSCH

ABOUT FRAUNHOFER INSTITUTES RESEARCH MEDIA CENTER EVENTS AND TRADE FAIRS

Smart Data – The stuff innovations are made of

Digitalization is a phenomenon that increases the industry's need for data protection, secure data exchange, and sovereignty over proprietary data that represents the economic lifeblood of many companies.

MORE INFO

© Photo Fotolia

Option 2: Navigation

The screenshot shows the Amazon.com homepage with a prominent orange hand-drawn style border around the top navigation area. The top navigation bar includes links for "NEW & INTERESTING FINDS ON AMAZON", "EXPLORE", "5 TO 20", "OH FOR SAKE", and various decorative icons. A large banner on the right side reads "HOLIDAY Toy LIST". The main content area features a "COUNTDOWN TO black friday DEALS WEEK" banner. Below it, there are four sections: "PRIME" (Exclusively for members: Wickedly Prime by Amazon), "VIDEO" (Recommended for you: Red Oaks Season 1), "MUSIC" (Recommended for you: Where Have All The Flowers ...), and "ALEXA" ("Alexa, open Jeopardy."). On the left, a sidebar lists various product categories under "Departments". The URL at the bottom is https://www.amazon.com/gp/site-directory/ref=nav_shopall_btn.

Option 3: Shopping Cart

The screenshot shows a shopping cart interface for a website. At the top, there's a logo for "Friends of Trieste" featuring a green, hand-drawn style font. To the right of the logo is a "CART" section showing "2 items \$75.00", with "VIEW CART" and "CHECKOUT" buttons below it.

The main area is titled "CART" and contains a table of items:

ITEM	PRICE	QTY	TOTAL	
Amperspooning by Aaron Carambula	\$30.00	1	\$30.00	Remove
You Make Me Happy	\$45.00	1	\$45.00	Remove

Below the table, there's a "Shipping to:" dropdown menu with the placeholder "Select your country...". To the right of the table is a button labeled "Update your cart total".

At the bottom of the cart area, it says "TOTAL: \$75.00" and has a "Checkout" button.

I'll work on content teasers

Latest News



• GOVERNMENT

Obamacare sign-ups begin; cost-sharing reduction still available

By CHLOÉ MORRISON



• LIFESTYLE

Citywide Thanksgiving potluck returns

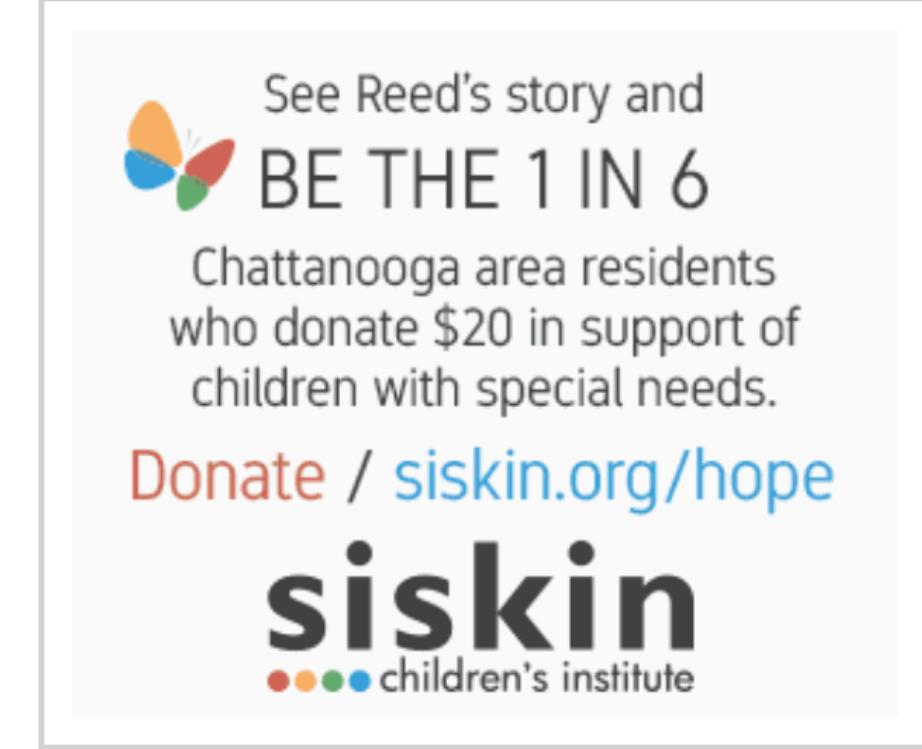
By SEAN PHIPPS



• MUSIC

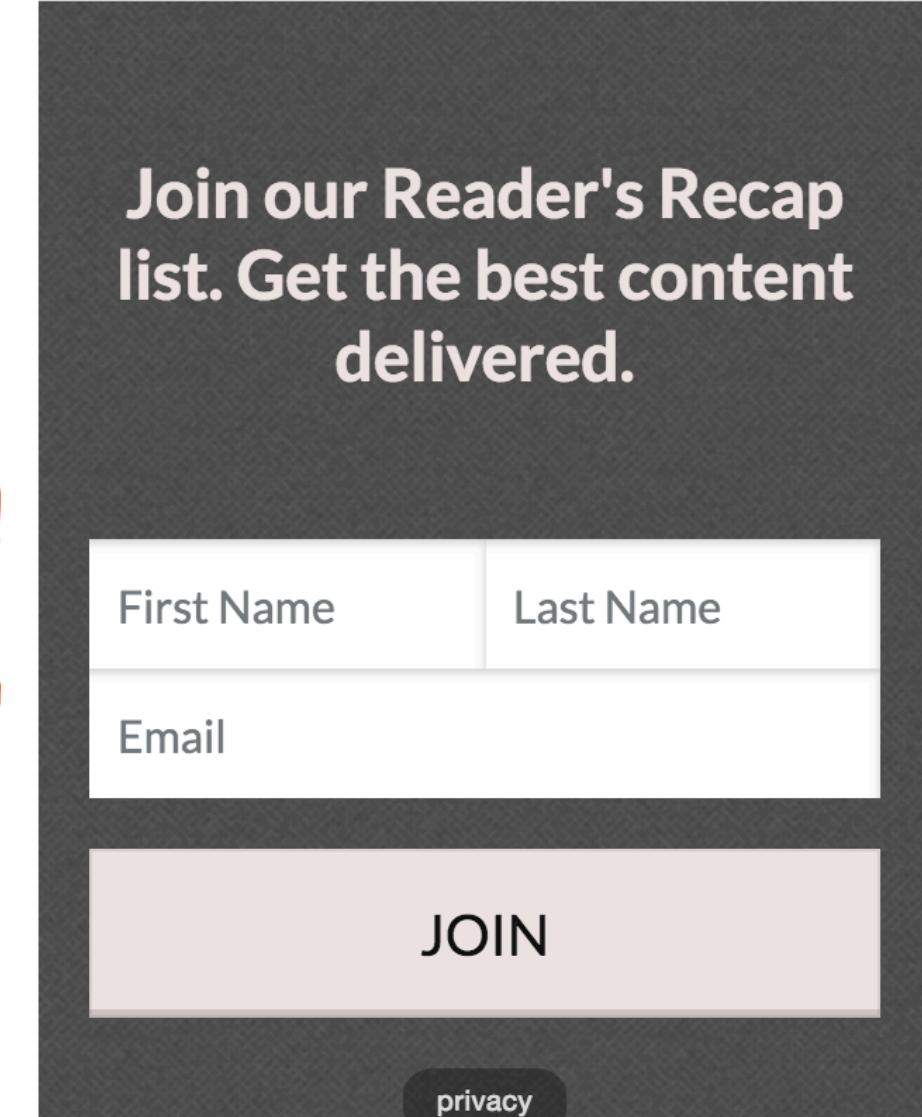
Notes From Left of the Dial: Fovea and more

By JOSHUA PICKARD



See Reed's story and
BE THE 1 IN 6
Chattanooga area residents
who donate \$20 in support of
children with special needs.
Donate / siskin.org/hope

siskin
children's institute



Join our Reader's Recap
list. Get the best content
delivered.

First Name Last Name
Email
JOIN

privacy



It's all about
process

Step by step

1. Focus on what matters.

The essential nugget



• GOVERNMENT

Obamacare sign-ups begin; cost-sharing reduction still available

By CHLOÉ MORRISON

Step by step

2. Write it out, then read it back.

How does this photo make you feel?

- Embarrassing
- Upsetting
- Saddening
- Bad Photo
- Other it's embarrassing

Step by step

2. Write it out, then read it back.

Please describe the photo

- It's embarrassing
- It's a bad photo of me
- It makes me sad

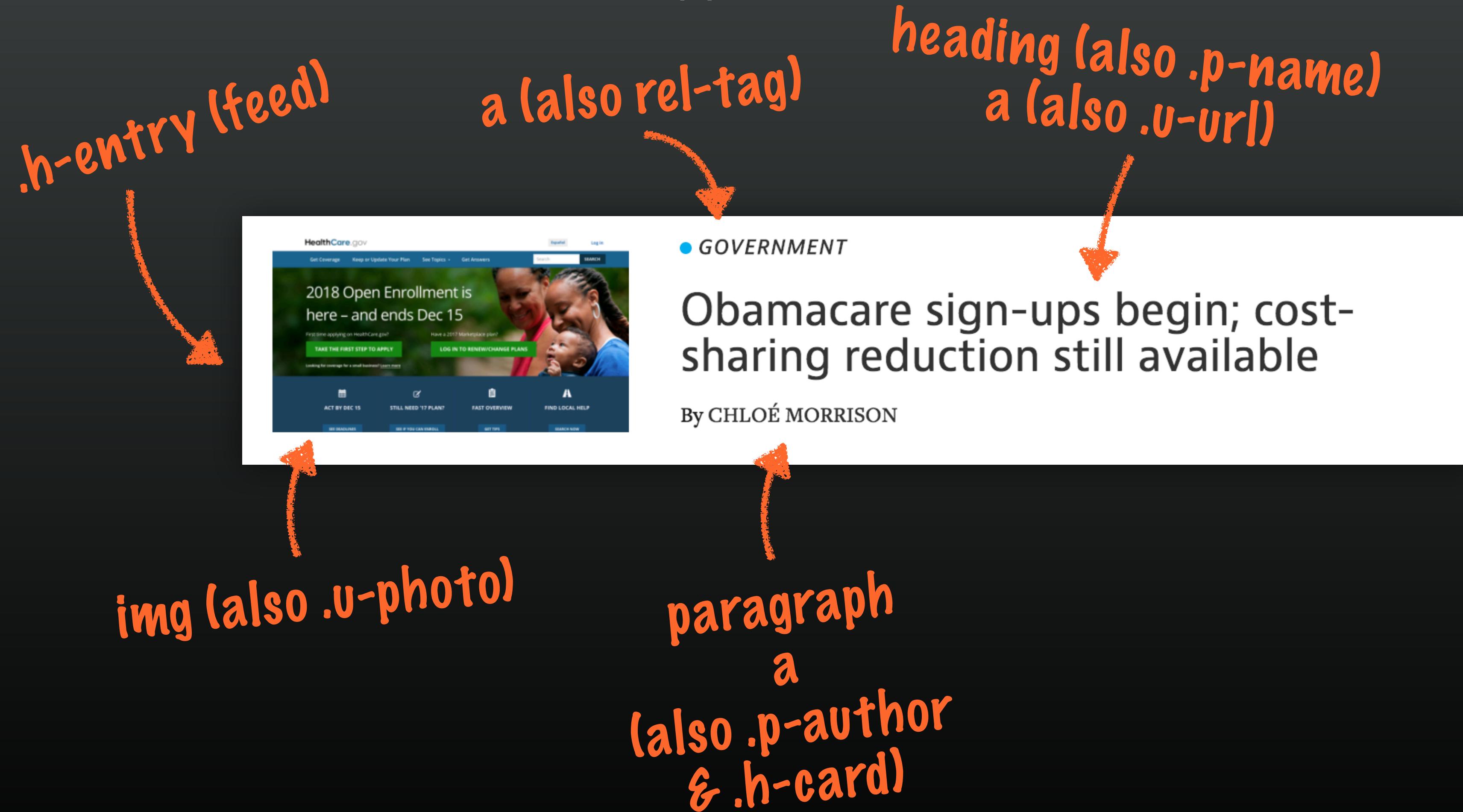
Step by step

3. Look for semantics that support 1 & 2.



Step by step

3. Look for semantics that support 1 & 2.



Step by step

4. Think about how design can improve comprehension.

Less important &
distinct from content



visually the most
important text

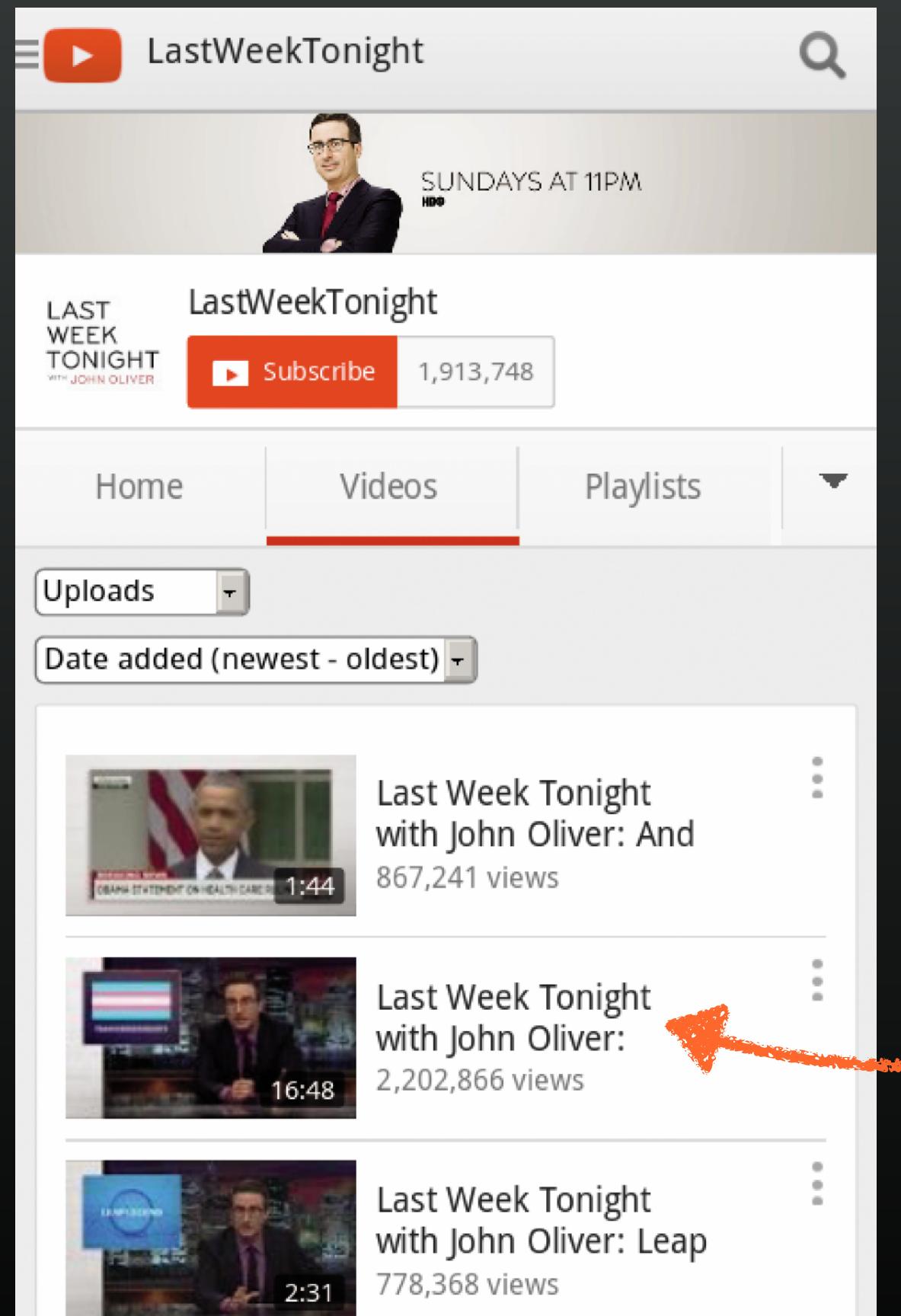
• GOVERNMENT
Obamacare sign-ups begin; cost-sharing reduction still available

By CHLOÉ MORRISON

distinct from the
content & diminished
in importance

Step by step

5. Consider how your design choices impact the reading experience.

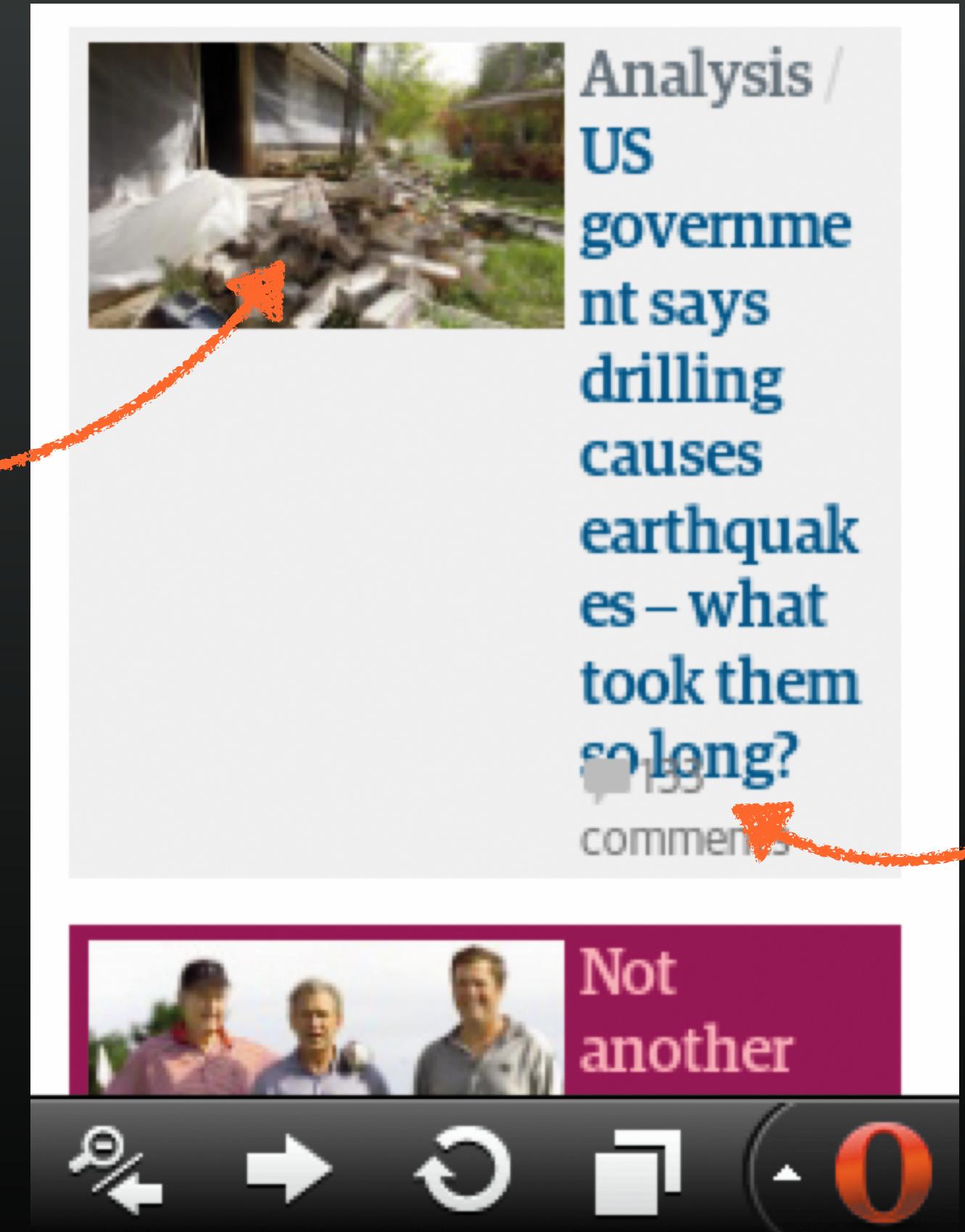


Can't tell what the
episode is called

Step by step

5. Consider how your design choices impact the reading experience.

Floated images crush the
text on small screens

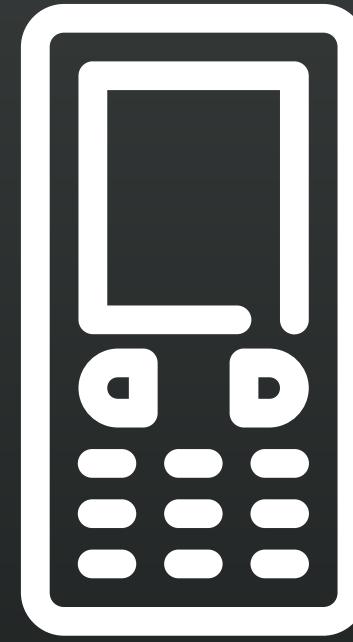


Step by step

6. Think about the many different ways folks might interact.



eye tracking



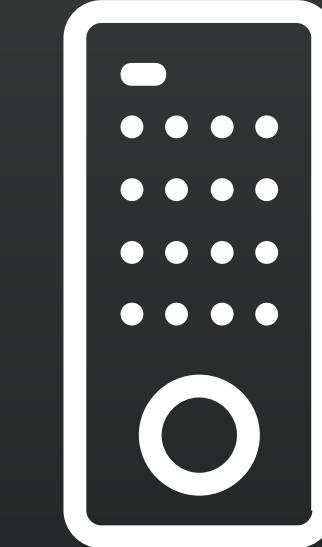
T9



touch



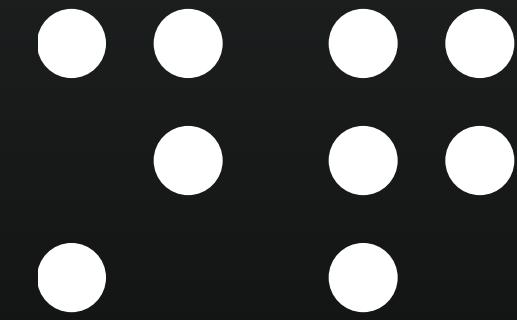
mouse



remote



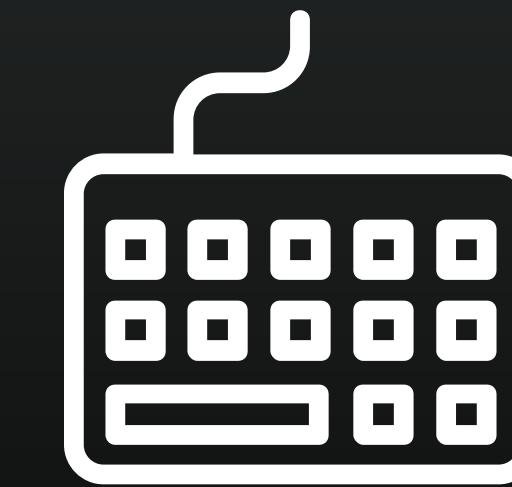
pen



braille



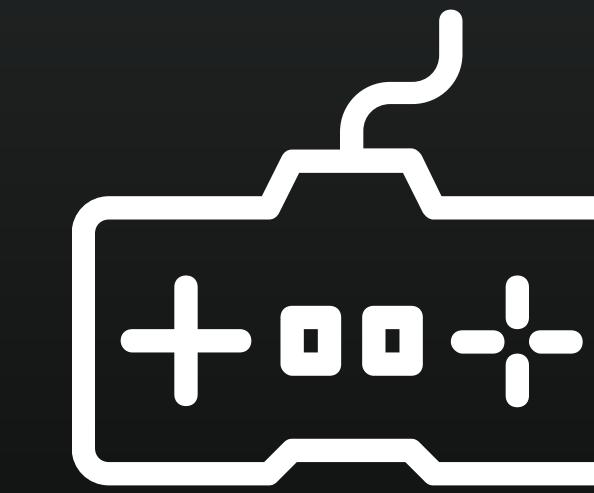
print



keyboard



audio



gamepad

Created by
from the Noun Project

Step by step

6. Think about the many different ways folks might interact.



eye tracking



touch



mouse

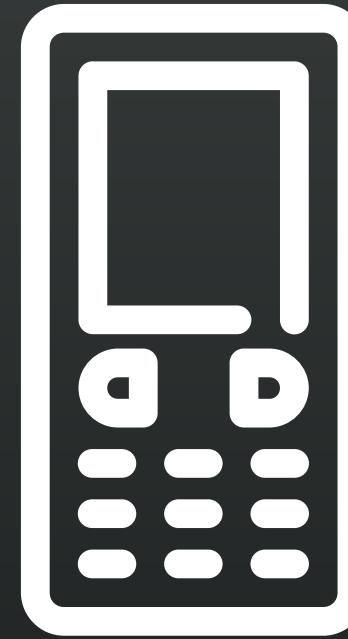
Hover?

Step by step

6. Think about the many different ways folks might interact.



eye tracking



T9



touch



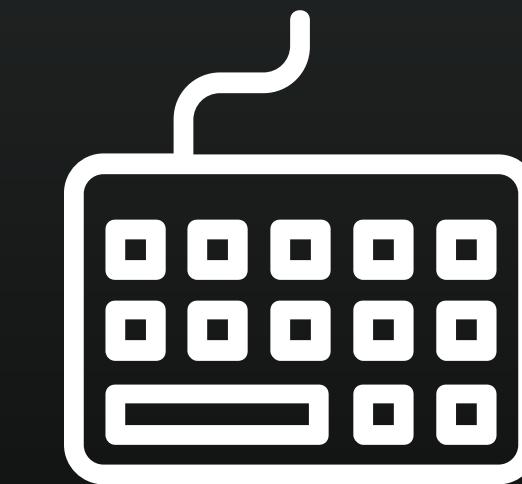
mouse



remote



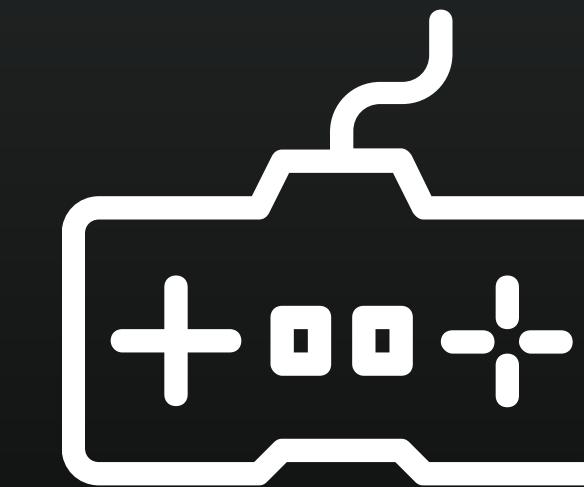
pen



keyboard



audio



gamepad

Focus & target?

Step by step

6. Think about the many different ways folks might interact.



touch



mouse

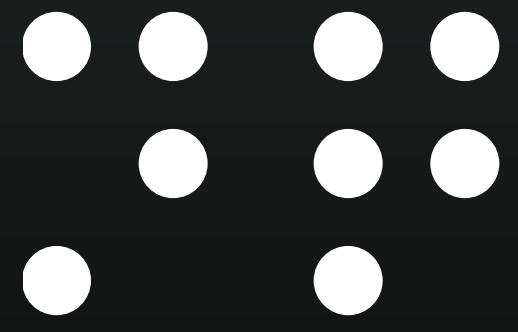


pen

Gestures?

Step by step

6. Think about the many different ways folks might interact.



braille



print

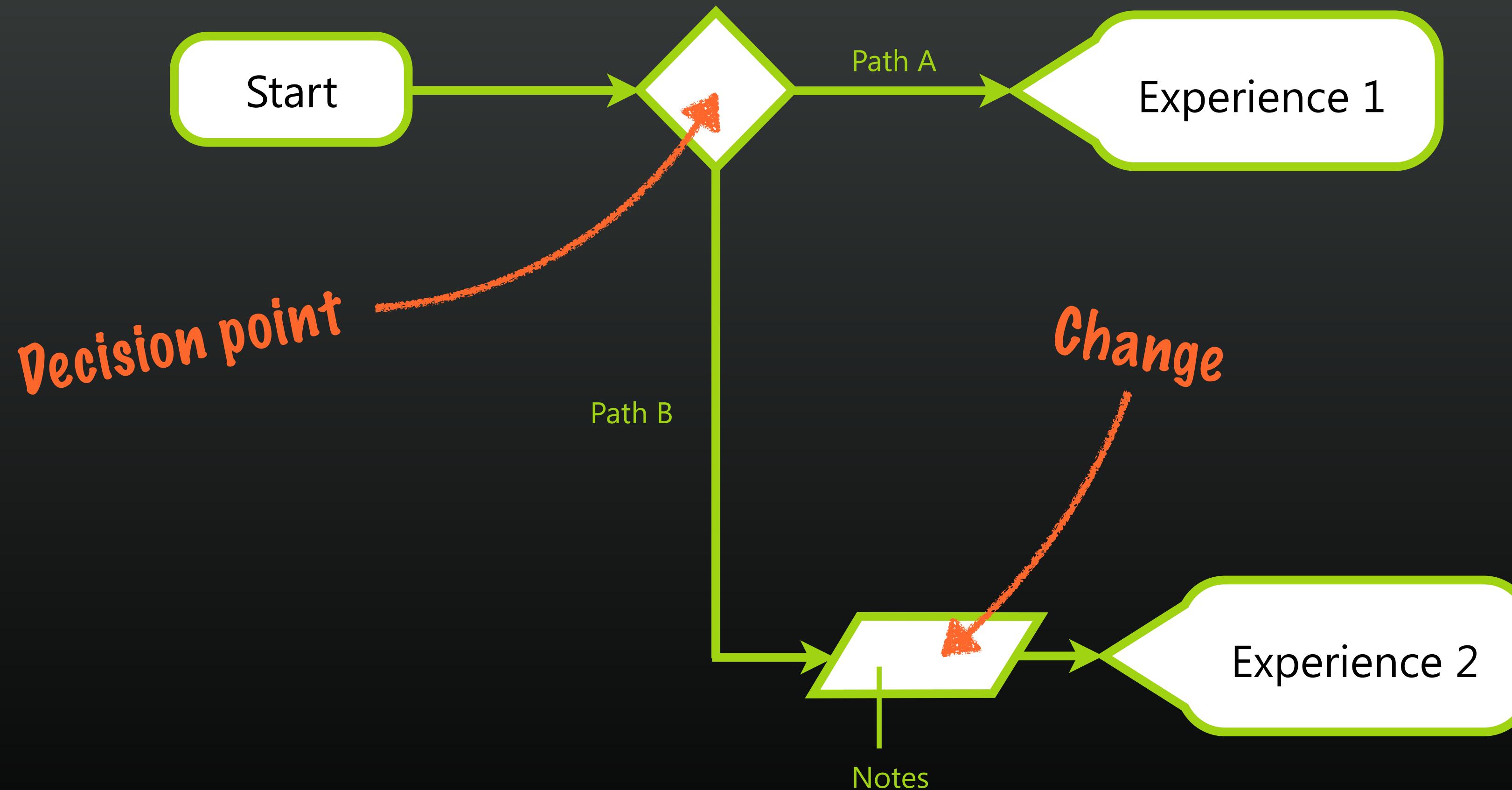


audio

Text expansions?

Step by step

7. Map the potential experiences.

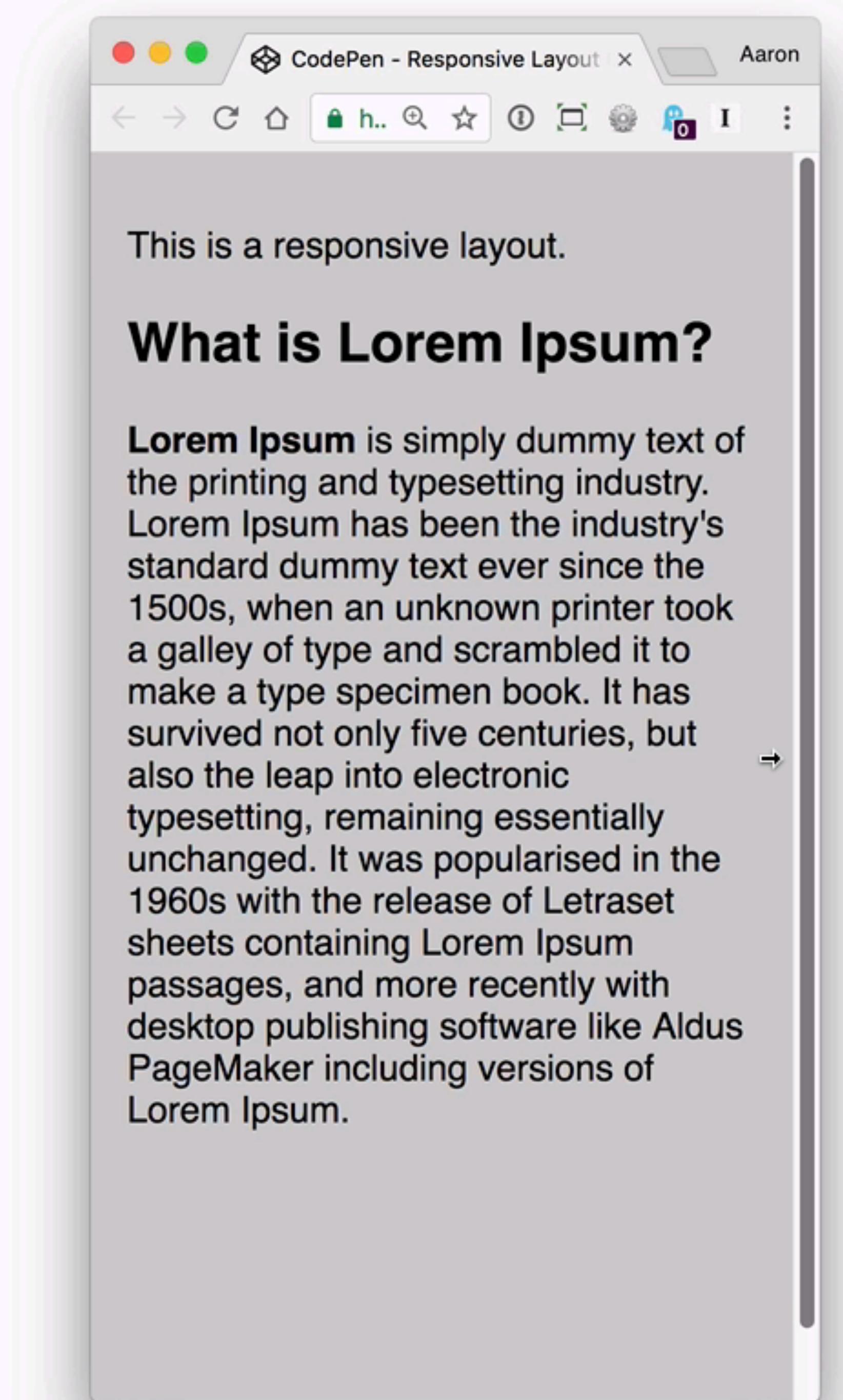


Step by step

1. Focus on what matters.
2. Write it out, then read it back.
3. Look for semantics that support 1 & 2.
4. Think about how design can improve comprehension.
5. Consider how your design choices impact the reading experience.
6. Think about the many different ways folks might interact.
7. Map the potential experiences.
8. Iterate.



Typography in a responsive context

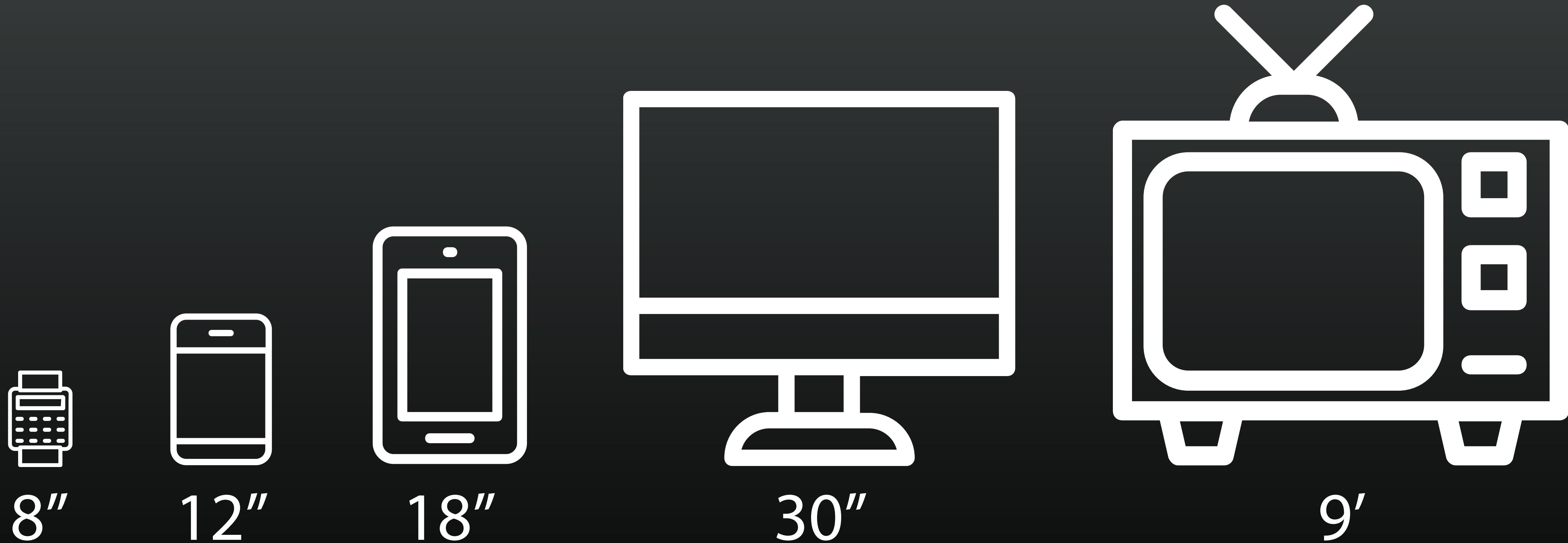


This is a responsive layout.

What is Lorem Ipsum?

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Average viewing distances





Even Better Than the Real Thing

Introduction

Where are you? What are you doing? Why are you doing what you are doing? Do you remember how you got here? What happened before that? Does what your memory of the past connect to your present? These questions form a test that will help you to reassure yourself that you are awake. Ironically, this test will not work when you are dreaming. And strangely, this test might also fail if you sit in front of a computer. Sitting in front a computer we often don't know what we are doing, and we don't know who we are.

In the state of dream, you can be either overwhelmed by up. Once you are awake, down until a certain point.

The similarity of dream and wake is easier to understand just like sitting at the computer (or another synchronous app on Twitter?) or by being in a dream. Once you regain full control over who you are, you can go back. But, All the while, especially what you were doing when you were heading up. At a general blurriness feeling your dreams, the computer

Alice was beginning to get very tired of sitting by her sister on the bank and of having nothing to do; once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, "and what is the use of a book," thought Alice, "without pictures or conversations?"

So she was considering, in her own mind (as well as she could, for the hot day made her feel very sleepy and drowsy), whether the pleasure of making a daisy-chain would be worth the trouble of getting up and picking the daisies, when suddenly a white rabbit with pink eyes ran close by her.

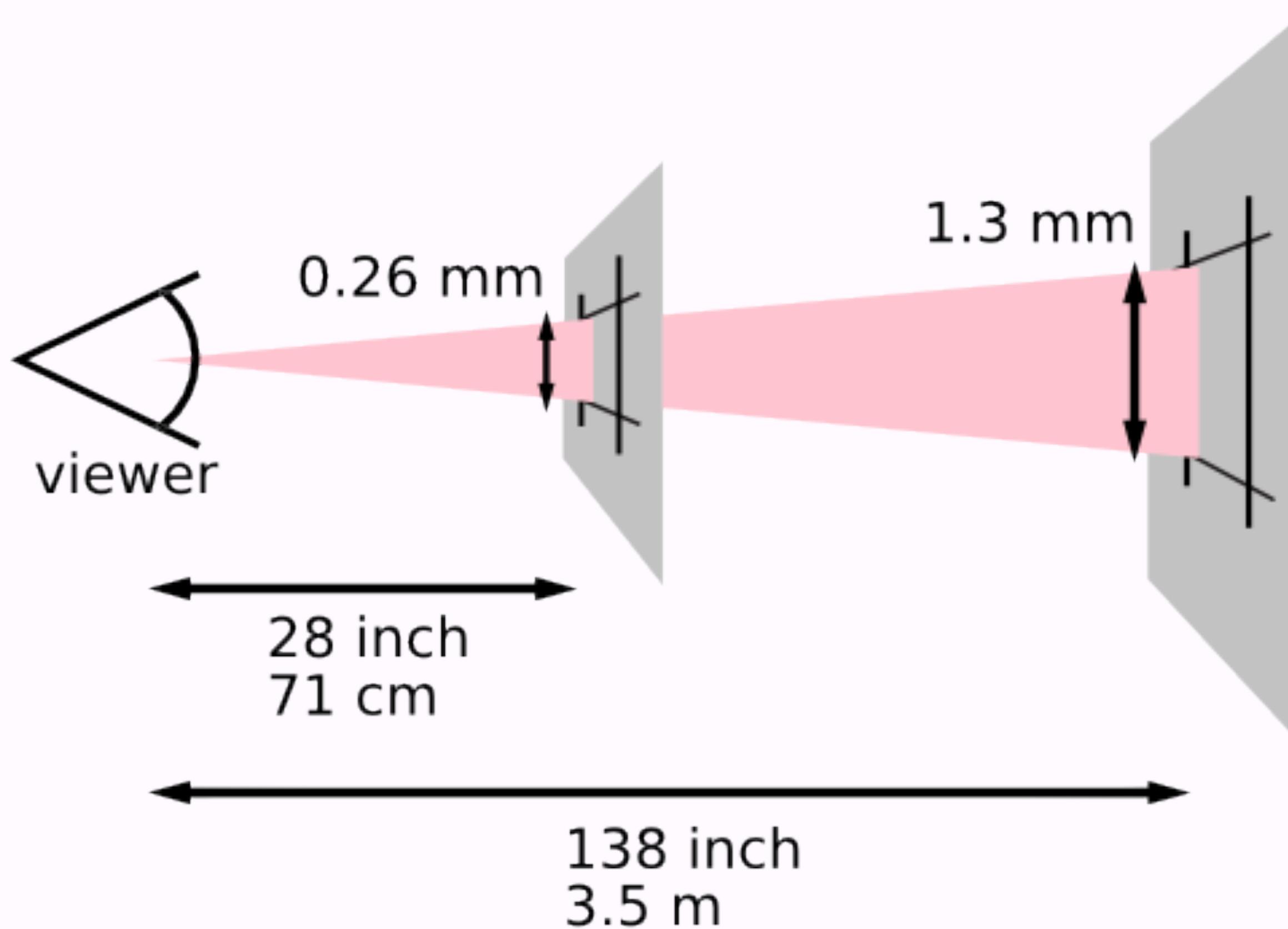
There was nothing so very remarkable in that; you did Alice think it an very much out of place. The Rabbit say to itself "Oh dear! Oh dear! I shall be too late!" (when she thought it over afterwards it occurred to her that she ought to have wondered at this, but at the time it all seemed quite natural); but, when the Rabbit actually took a watch out of its waistcoat-pocket, and looked at it, and then hurried on, Alice started to her feet, for it flashed across her mind that she had never before seen a rabbit with either a waistcoat-pocket, or a watch to take out of it, and burning with curiosity, she ran across the field after

Alice was Beginning to get very tired of sitting by her sister on the bank and of having nothing to do; once or twice she had peeped into the book her sister was reading, but it had no pictures or conversations in it, "and what is the use of a book," thought Alice, "without pictures or conversations?"

So she was considering, in her own mind (as well as she could, for the hot day made

Did you know that
pixel size is relative?

From the W3C Docs



**This is why pixel
fonts scale now**
(they didn't used to)

Scaling up

```
html {  
    font-size: 16px;  
    line-height: 1.3;  
}  
@media (min-width: 800px) {  
    html { font-size: 18px; }  
}  
@media (min-width: 1200px) {  
    html {  
        font-size: 20px;  
        line-height: 1.4;  
    }  
}
```

Modularscale X

www.modularscale.com/?1&em&1.5 ☆ ...

Table Text +

Modular Scale

Not sure how this calculator works? [Here are some tips.](#)

Bases

1em +

Ratio

1.5

Web Sass JS

This site is built & maintained by [Scott Kellum](#) and [Tim Brown](#). Copyright © 2010–2017 Tim Brown.

#slack

All the tools your team needs in one place. Slack: Where work happens.
ads via Carbon

The quick brown fox jumps over the lazy dog

The quick brown fox jumps over the lazy dog

The quick brown fox jumps over the lazy dog

The quick brown fox jumps over the lazy dog

?

Modular scale

```
/* Assumes html styles from
previous screen */

h1 {
  font-size: 3.125em; // 50 ÷ 16 = 3.125
}
h2 {
  font-size: 2.3125em; // 37 ÷ 16 = 2.3125
}
h3 {
  font-size: 1.75em; // 28 ÷ 16 = 1.75
}
```

Aaron

CodePen - Responsive Typogr...

Secure | https://codepen.io/zellwk/full/OMmEqg/

Responsive Typography – Relative Units

A PEN BY Zell Liew

Heart Fork Change View



Come in, and shut the door, it's cold out there!

Large Text Example:

Medium Text Example:

Small Text Example:

Very Small Text Example:

Very Very Small Text Example:

Em vs. Rem: All in the context

```
html {  
    font-size: 16px;  
}  
h1 {  
    font-size: 2em;  
}  
#section {  
    font-size: 20px;  
}
```

This is an h1

This is some normal text.

This is an h1 inside #section

This is text in #section.

Em vs. Rem: All in the context

```
html {  
    font-size: 16px;  
}  
h1 {  
    font-size: 2rem;  
}  
#section {  
    font-size: 20px;  
}
```

This is an h1

This is some normal text.

This is an h1 inside #section

This is text in #section.

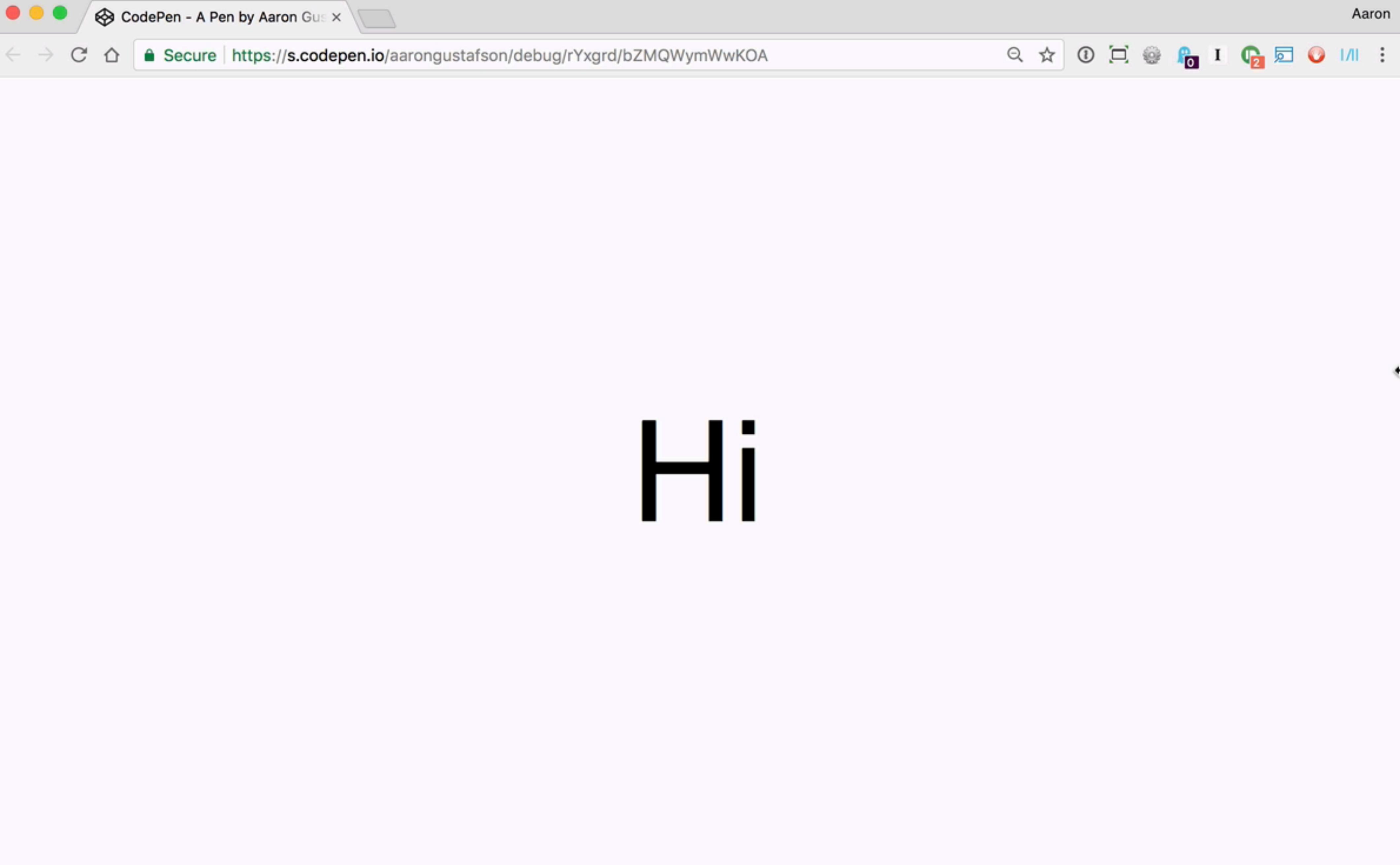
Modular scale

```
/* Assumes html styles from
previous screen */

h1 {
  font-size: 3.125rem; // 50 ÷ 16 = 3.125
}
h2 {
  font-size: 2.3125rem; // 37 ÷ 16 = 2.3125
}
h3 {
  font-size: 1.75rem; // 28 ÷ 16 = 1.75
}
```

Viewport-based sizing

```
html {  
  font-size: 10vw; /* 1/10 viewport width */  
}
```



Fluid Typography

```
html {  
  font-size: calc(  
    16px +  
    (24 - 16) *  
    (100vw - 400px) /  
    (800 - 400)  
  );  
}
```

minimum font size

maximum font size - minimum font size

minimum screen size

maximum screen size - minimum screen size

Responsive Font Size And Fluid x Aaron

Secure | https://www.smashingmagazine.com/2016/05/fluid-typography/

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Responsive And Fluid Typography With vh And vw Units

By Michael Riethmuller

May 10th, 2016

CSS, Responsive Web Design, Typography

32 Comments

Embracing fluid typography might be easier than you think. It has wide browser support, is simple to implement and can be achieved without losing control over many important aspects of design.

CODING

- CSS
- HTML
- JavaScript
- Techniques

DESIGN

- Web Design
- Responsive
- Typography
- Inspiration

MOBILE

- iPhone & iPad
- Android
- Design Patterns

GRAPHICS



Smashing Newsletter

Subscribe to our email newsletter for useful tips and valuable resources, sent out every second Tuesday.

email address **Subscribe**

234,898 Subscribers powered by MailChimp



As designing static pages has become untenable, many have started to approach design in a modular way. In this book, we'll identify what makes an **effective design system** that empowers teams to create great digital products. [Get the book now →](#)

Let's look at the
content teaser



● GOVERNMENT

Obamacare sign-ups begin; cost-sharing reduction still available

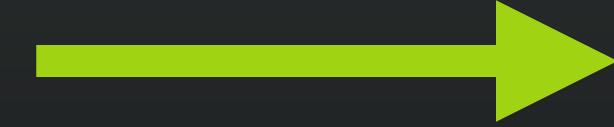
By CHLOÉ MORRISON

Further away, larger type

• GOVERNMENT

Obamacare sign-ups begin; cost-sharing reduction still available

By CHLOÉ MORRISON



• GOVERNMENT

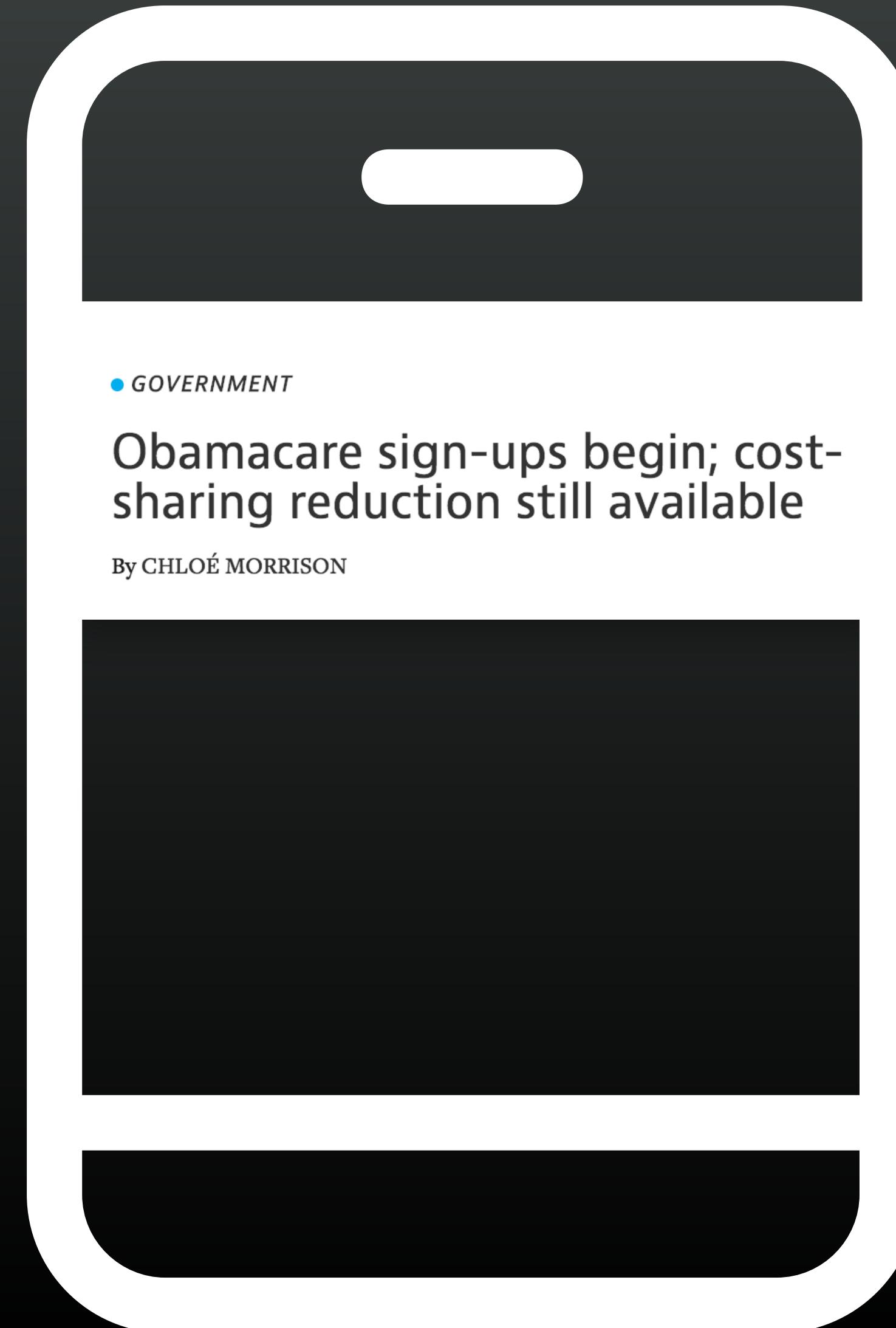
Obamacare sign-ups begin; cost-sharing reduction still available

By CHLOÉ MORRISON

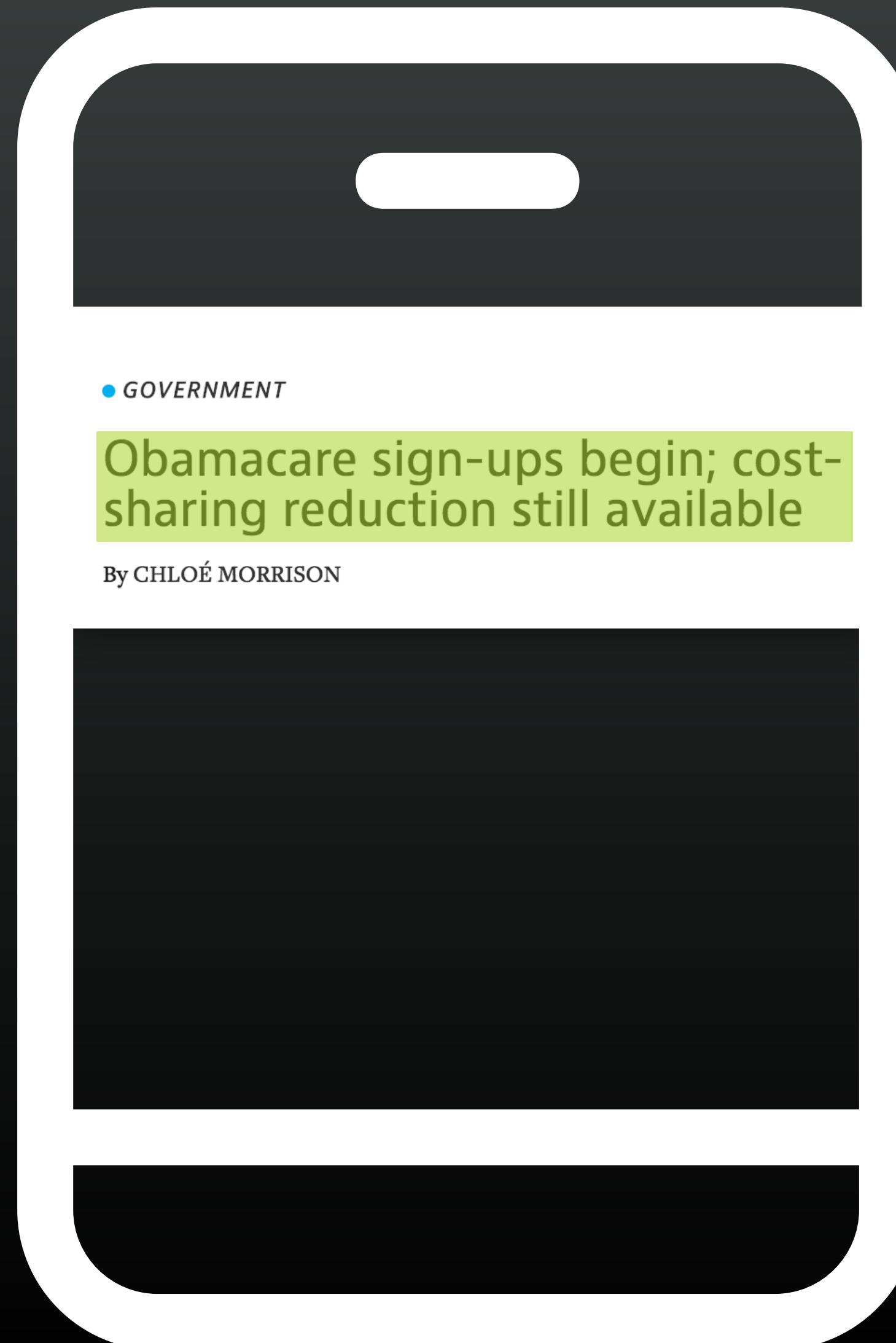
8"

9'

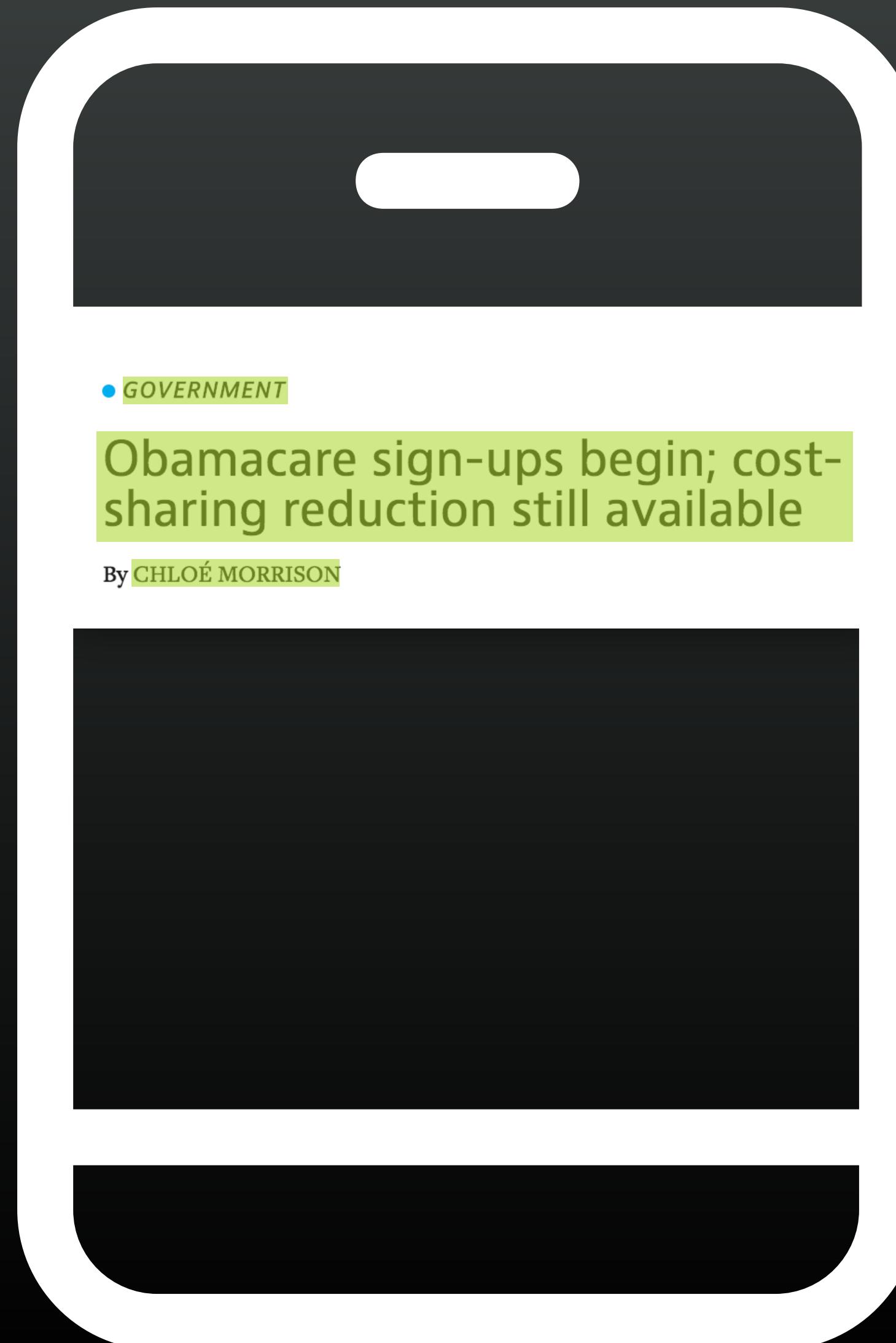
Consider tap targets too



Consider tap targets too



Consider tap targets too



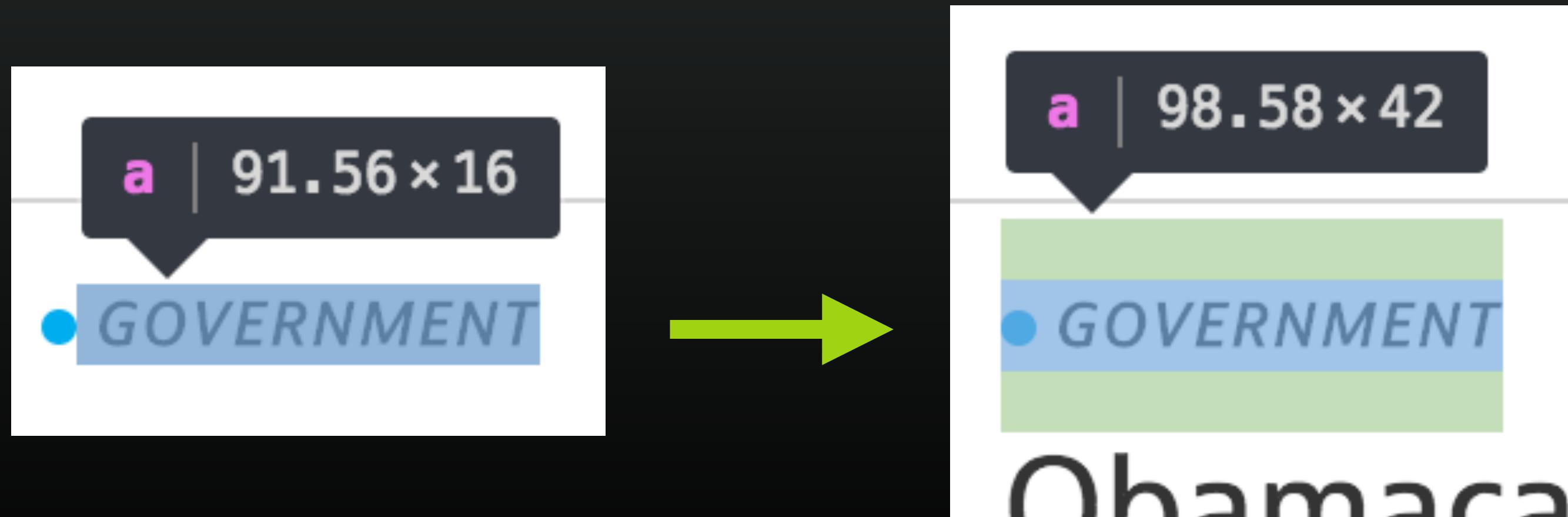
Enlarging tap targets

```
.category a {  
  display: inline-block;  
  margin: -1em 0;  
  padding: 1em 0;  
}
```



Enlarging tap targets

```
.category a {  
  display: inline-block;  
  margin: -1em 0;  
  padding: 1em 0;  
}
```



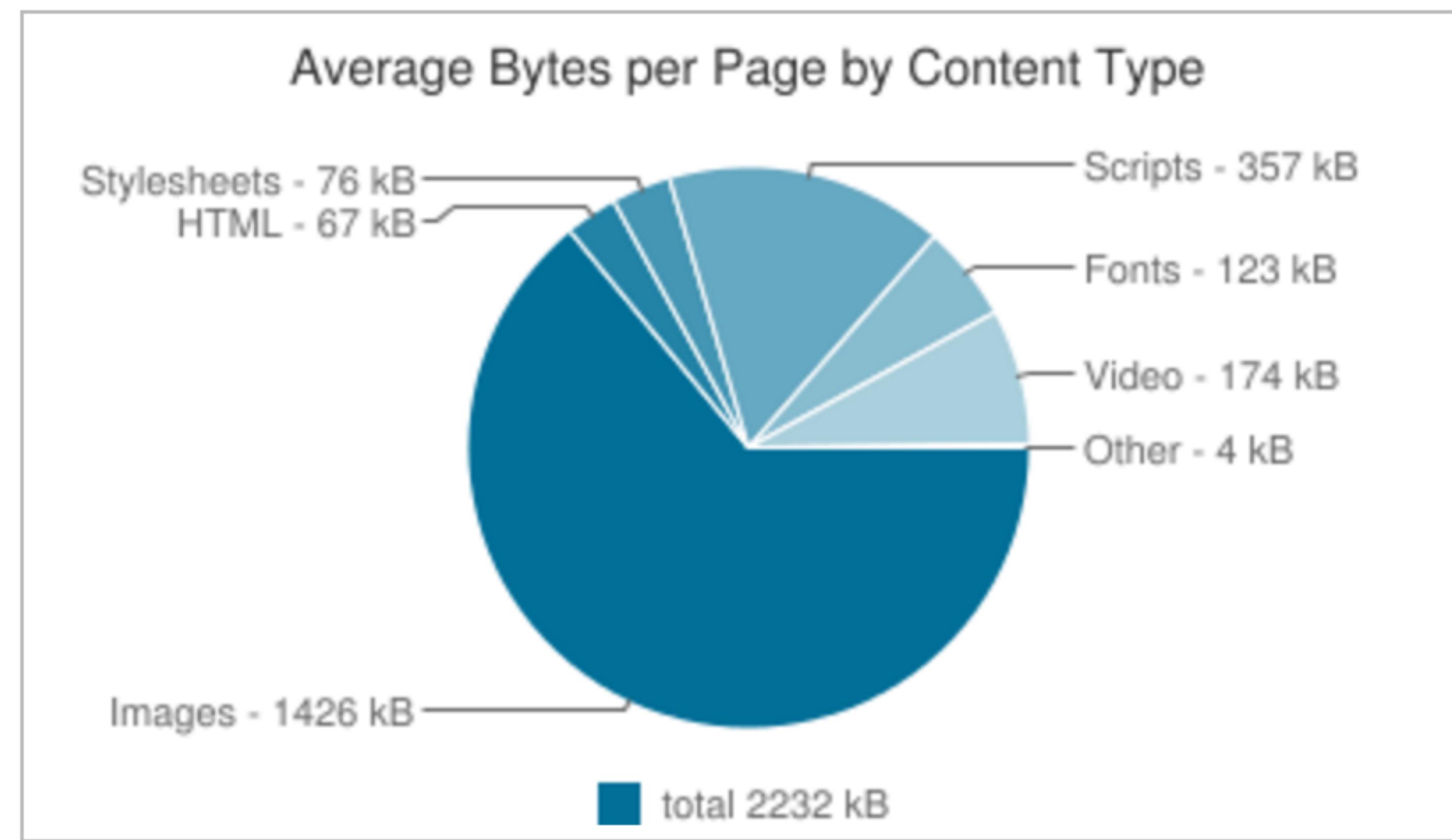


Imagery in a responsive context

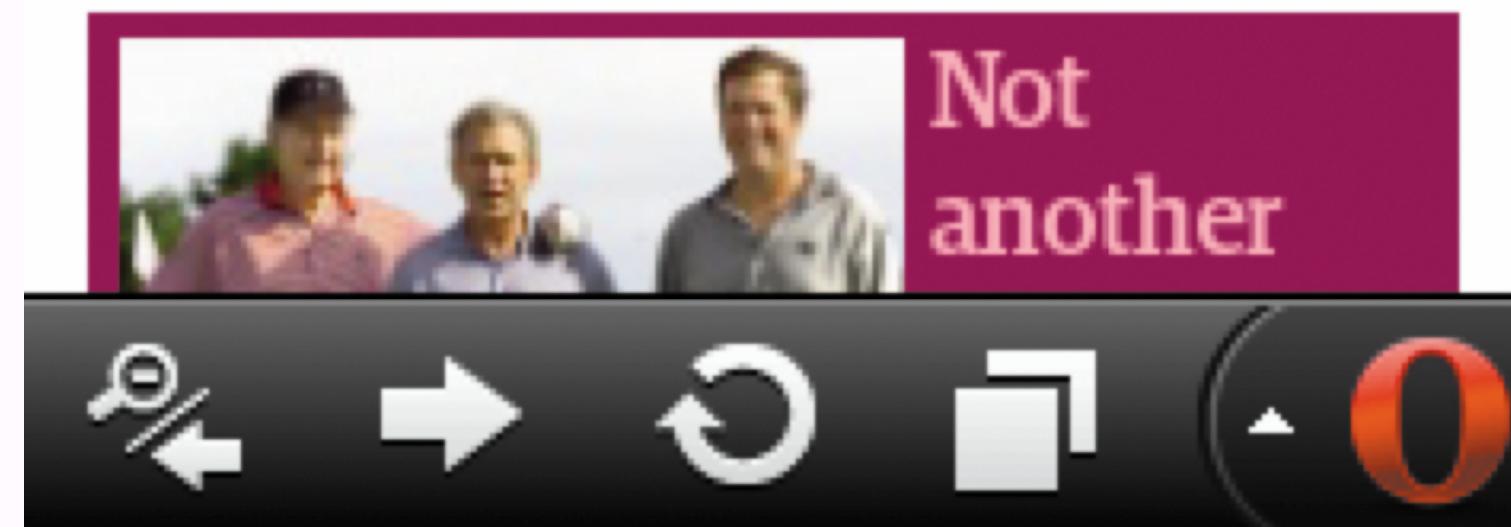
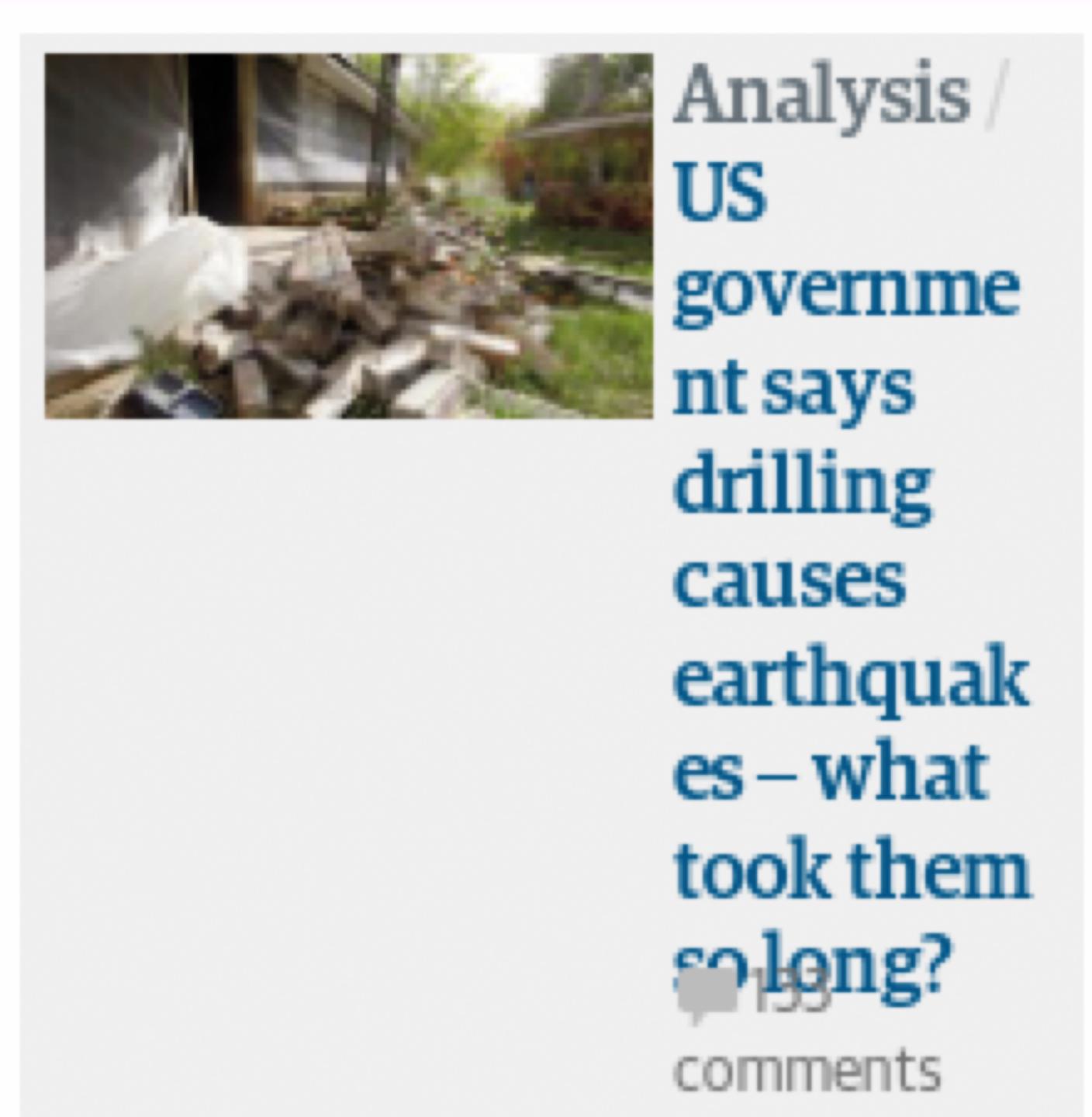
Evaluate images case-by-case

- Does the image reiterate information found in the surrounding text?
- Is the image necessary to understand the surrounding content?
- Does the image contain text?
- Is the image a graph, chart, or table?
- Could the content of the image be presented in a different format that would not require an image?
- Is the image purely presentational?

Images account for 63% of the average web page.



And they don't always fit



If you can
avoid using an
image, do it

If you need an
image, choose
the best **format**

Quick format recap

- **GIF**

- ▶ for images with large swaths of solid colors
- ▶ Binary transparency

- **JPG**

- ▶ For photographs and images with gradations of color
- ▶ Can be compressed (introduces artifacts)

Quick format recap

- **PNG (8-Bit)**

- ▶ Alternative to GIF
- ▶ Can support alpha transparency (with the right creation software)

- **PNG (24-bit)**

- ▶ Alternative to JPG
- ▶ Usually larger than JPGs
- ▶ Supports alpha transparency

Quick format recap

- **WebP**

- ▶ Newer format, not universally supported
- ▶ Smaller than JPGs and 24-bit PNGs
- ▶ Support alpha transparency

- **JPEG 2000**

- ▶ Newer format, not universally supported
- ▶ Like JPG, but with better compression

Indicating alternate formats

```
<picture>
  <source type="image/webp" srcset="my.webp">
    
  </picture>
```

*first choice if
WebP is supported*

*fallback image
if it isn't*

Indicating alternate formats

```
<picture>
  <source type="image/svg+xml"
          srcset="my.svg">
  <source type="image/webp" srcset="my.webp">
  
</picture>
```

You can also supply
different images
based on screen size,
resolution, etc.

Indicating alternate sizes

```

```

*image will always
be displayed at full width*

*browser should choose
the best option based
on these sizing hints*

Indicating alternate densities

```

```

fallback

indicates higher
resolution option

You can also “art direct”



You can also “art direct”

```
<picture>
  <source srcset="my-wide.png" ←
    media="(min-width: 600px)"
  
</picture>
```

widescreen image,
landscape crop

smaller,
portrait crop

Let's look at the
content teaser



● GOVERNMENT

Obamacare sign-ups begin; cost-sharing reduction still available

By CHLOÉ MORRISON

The essential nugget



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Nice to have



The essential nugget

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Focus on what matters



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ideal

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minimum viable interface

Focus on what matters



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ideal

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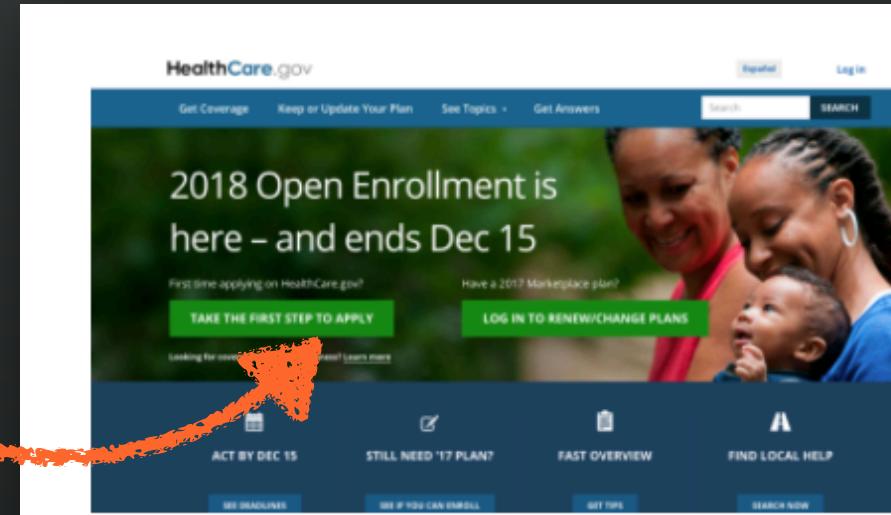
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minimum viable interface

Let's plan this out

Lazy load



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IxMap



IxMap

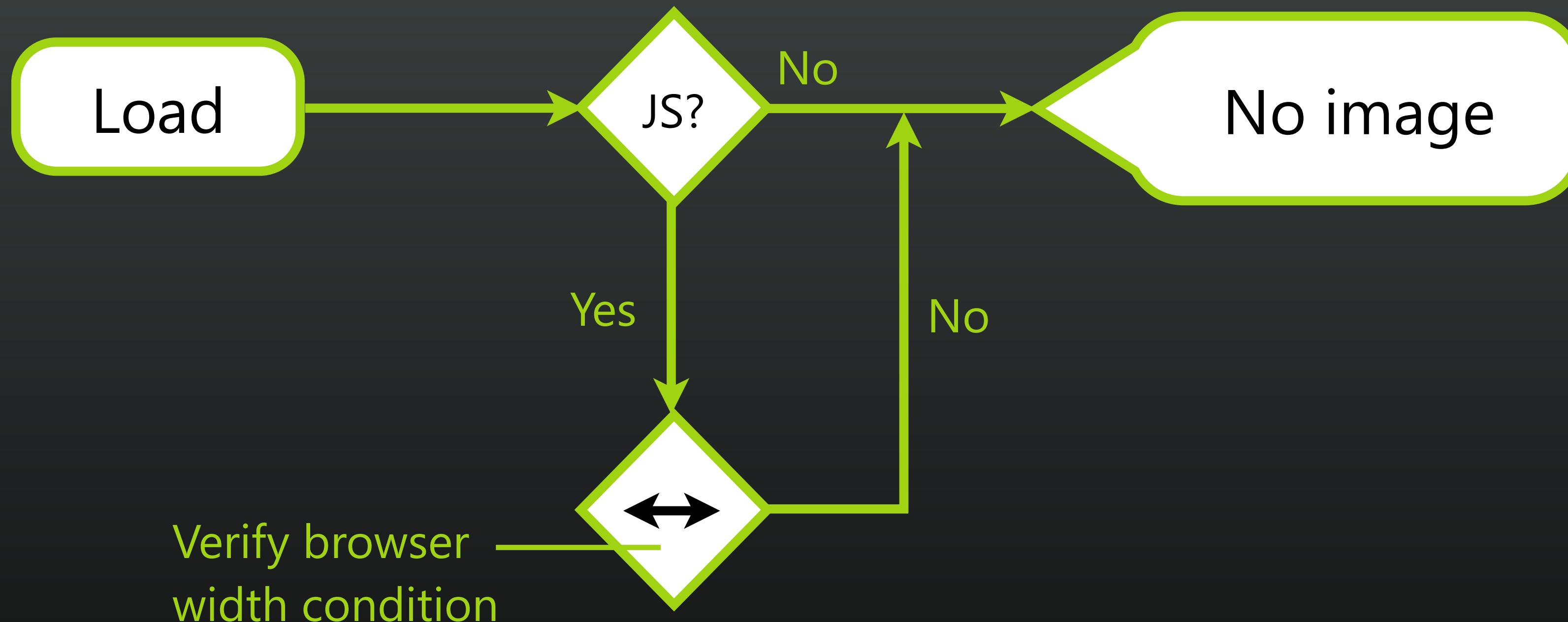


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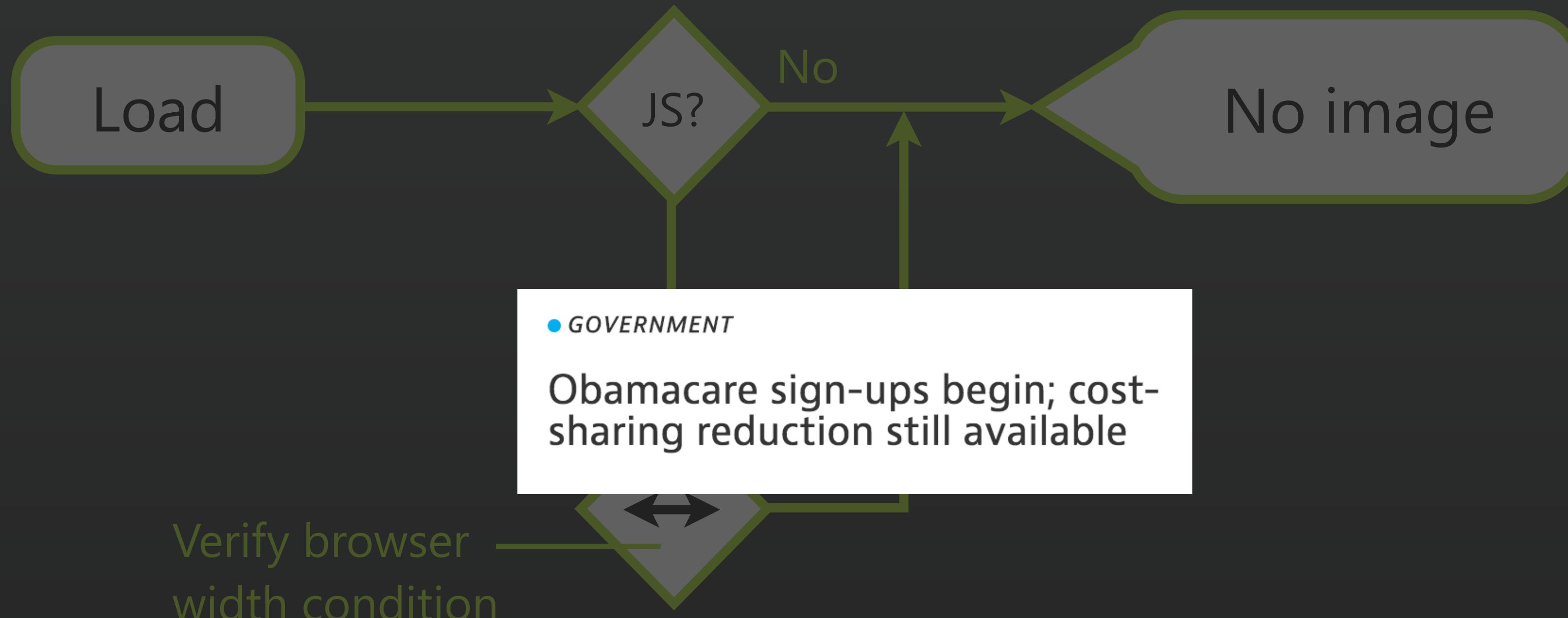
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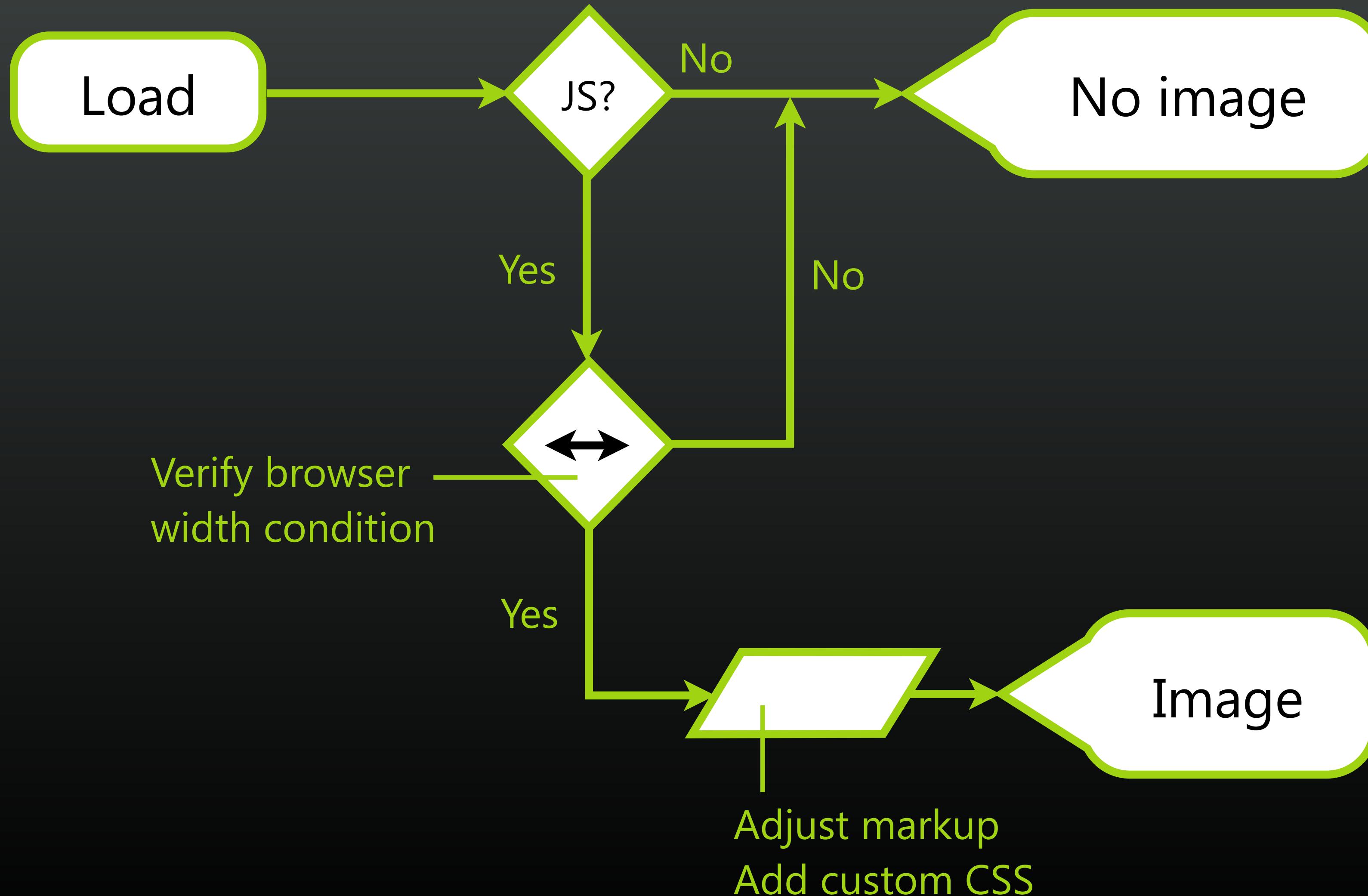
IxMap



IxMap



IxMap



IxMap



There is no image...

```
<div class="entry-image"  
     data-image-src="/i/sample.jpg"></div>
```

Until there is

```
<div class="entry-image"  
     data-image-src="/i/sample.jpg"></div>
```



```
<div class="entry-image"  
     data-image-src="/i/sample.jpg"  
     data-has-image="true">  
       
</div>
```

CSS at rest

```
[data-image-src] {  
    display: none;  
}
```

CSS at play

```
[data-image-src][data-image-loaded] {  
    display: block;  
}
```

JS Watcher

```
window.watchResize = function(callback)
{
    var resizing;
    function done() {
        clearTimeout( resizing );
        resizing = null;
        callback();
    }
    window.onresize = function(){
        if ( resizing ) {
            clearTimeout( resizing );
            resizing = null;
        }
        resizing = setTimeout( done, 50 );
    };
    callback();
};
```

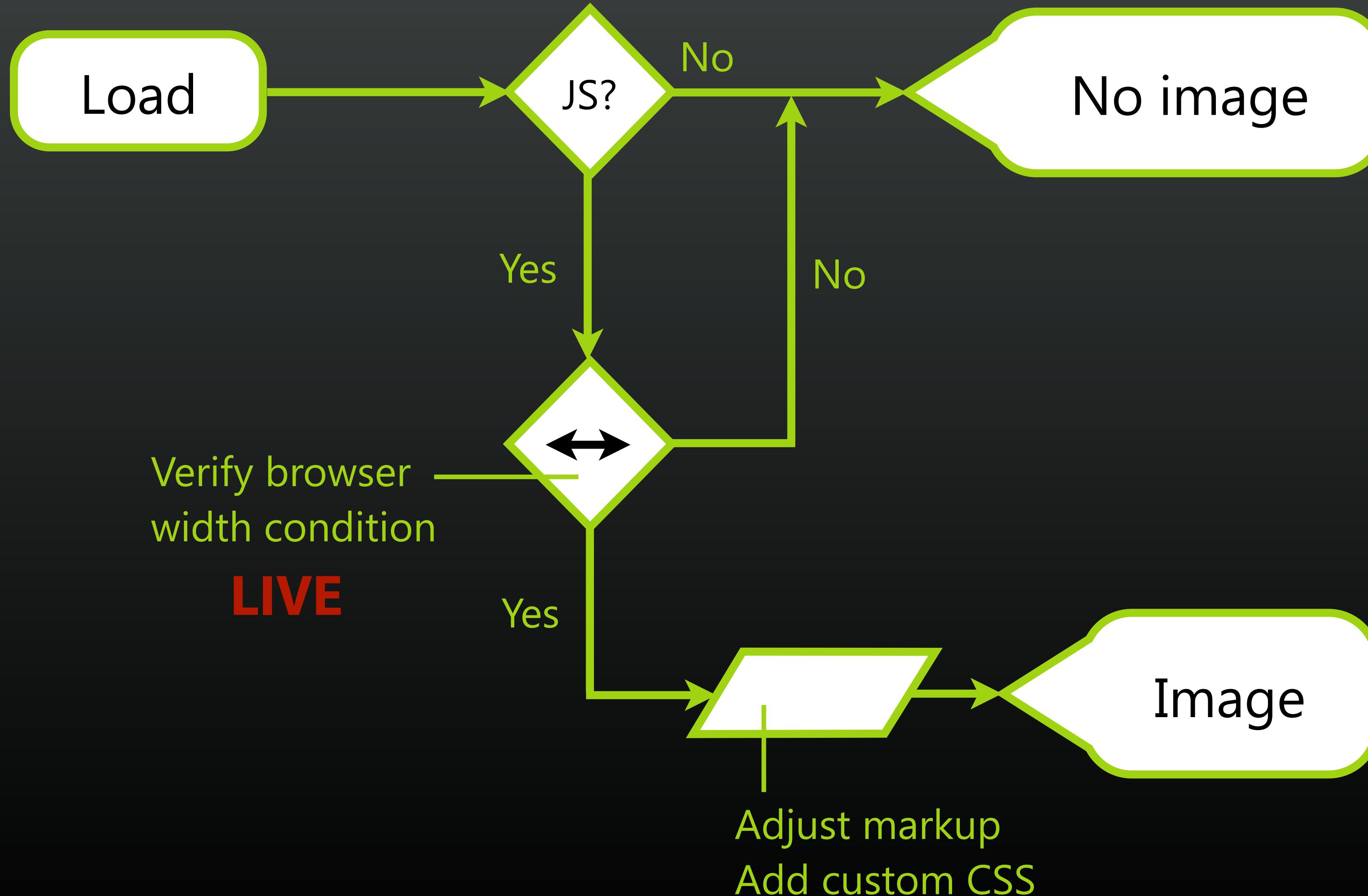
JS Watcher

```
var browser_width = 0;  
window.watchResize(function(){  
    browser_width = window.innerWidth ||  
        document.body.offsetWidth;  
});
```

JS Watcher

```
window.watchResize(function(){
  var threshold = 400,
      image = document.createElement('img'),
      paragraphs = document.getElementsByTagName('p'),
      i = paragraphs.length,
      p, loaded, src, img;
  if ( browser_width >= threshold ) {
    image.setAttribute('alt','');
    while ( i-- ) {
      p = paragraphs[i];
      src = p.getAttribute('data-image-src');
      loaded = p.getAttribute('data-image-loaded');
      if ( src != null && loaded == null ) {
        img = image.cloneNode(true);
        img.setAttribute('src',src);
        p.appendChild( img );
        p.setAttribute('data-image-loaded','');
      }
    }
    image = paragraphs = p = img = null;
  }
});
```

IxMap



Smart CSS

```
[data-image-src][data-image-loaded] {  
    display: block;  
}
```

Smart CSS

```
[data-image-src][data-image-loaded] {  
    display: block;  
}
```

```
@media only screen and (min-width:400px) {  
    [data-img-src][data-image-loaded] {  
        display: block;  
    }  
}
```

Assuming that's your threshold



Content Teasers

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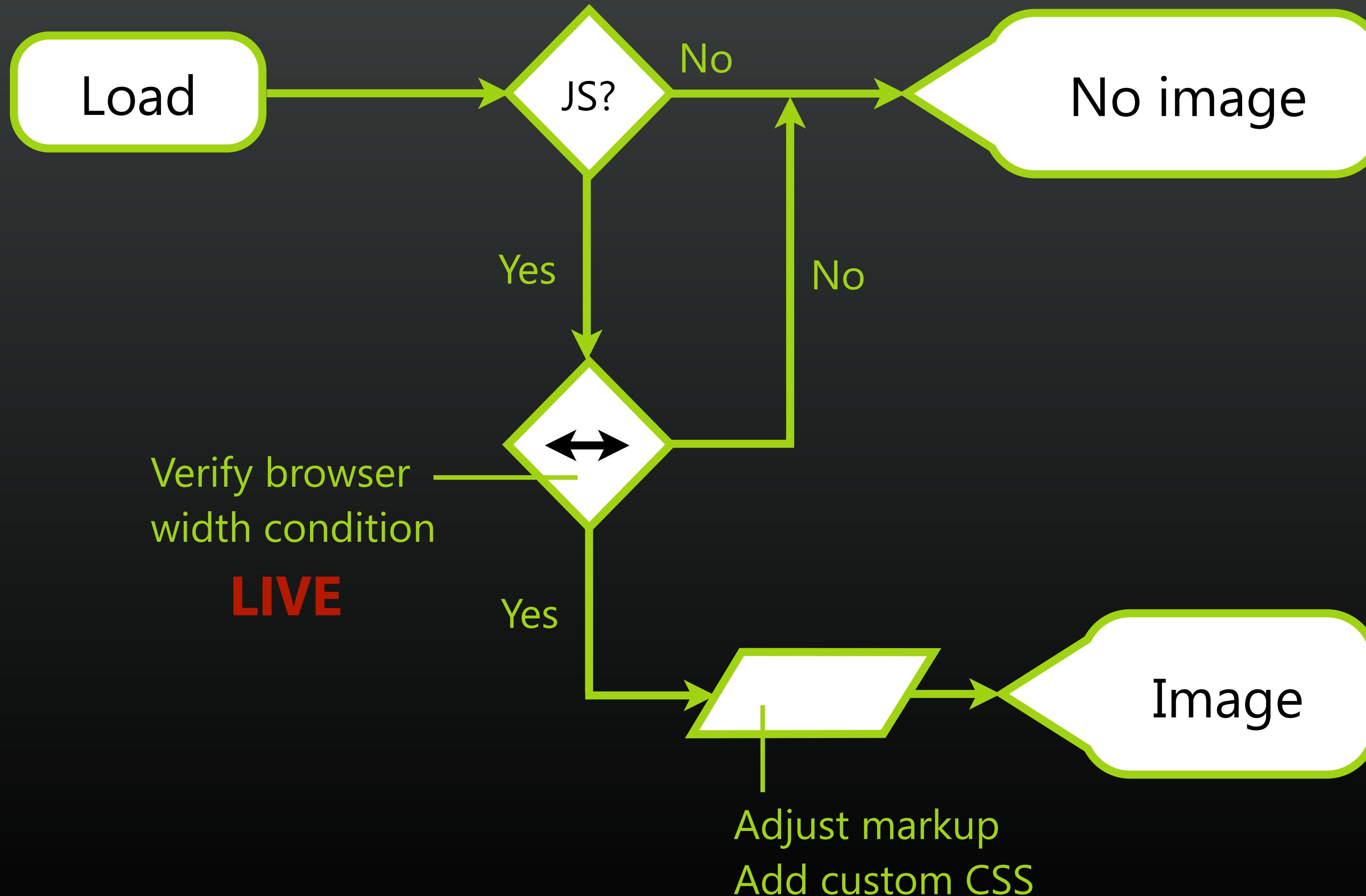
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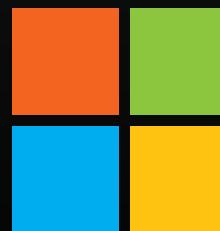


Thank you!

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