Accessibility Matters: Creating a Better Web

By Lindsey Dragun

Talk Format

- My Intro (hi!)
- Subject Intro
- Broad Strokes (and metaphors!)
- Examples
- Code
- Also expect weird stock images/screencaps

What this won't have

- Animation
- Reliance on these slides
- Cat pictures

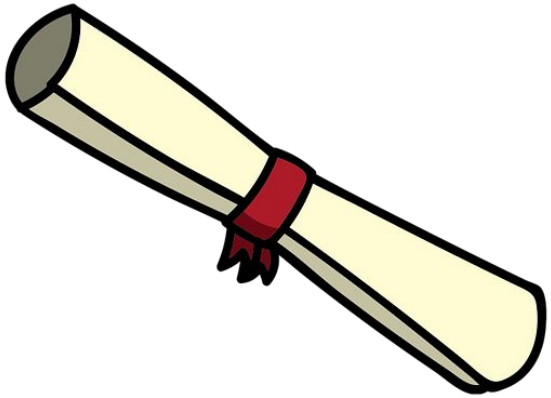
Where to find these slides:

http://dragun.tech/djangocon.html

- **Resources**
- **Google Slides**

About Me

- Web Developer
- Lead for Women Who Code DC
- Loves: Comic books, video games, horror movies, dogs
- Education:
  - General Assembly Bootcamp
  - MA in International Peace & Conflict Resolution



(Artist’s Rendition)

What is Web Accessibility?

Basics

“Web accessibility means that people with disabilities can perceive, understand, navigate, and interact with the Web, and that they can contribute to the Web.”

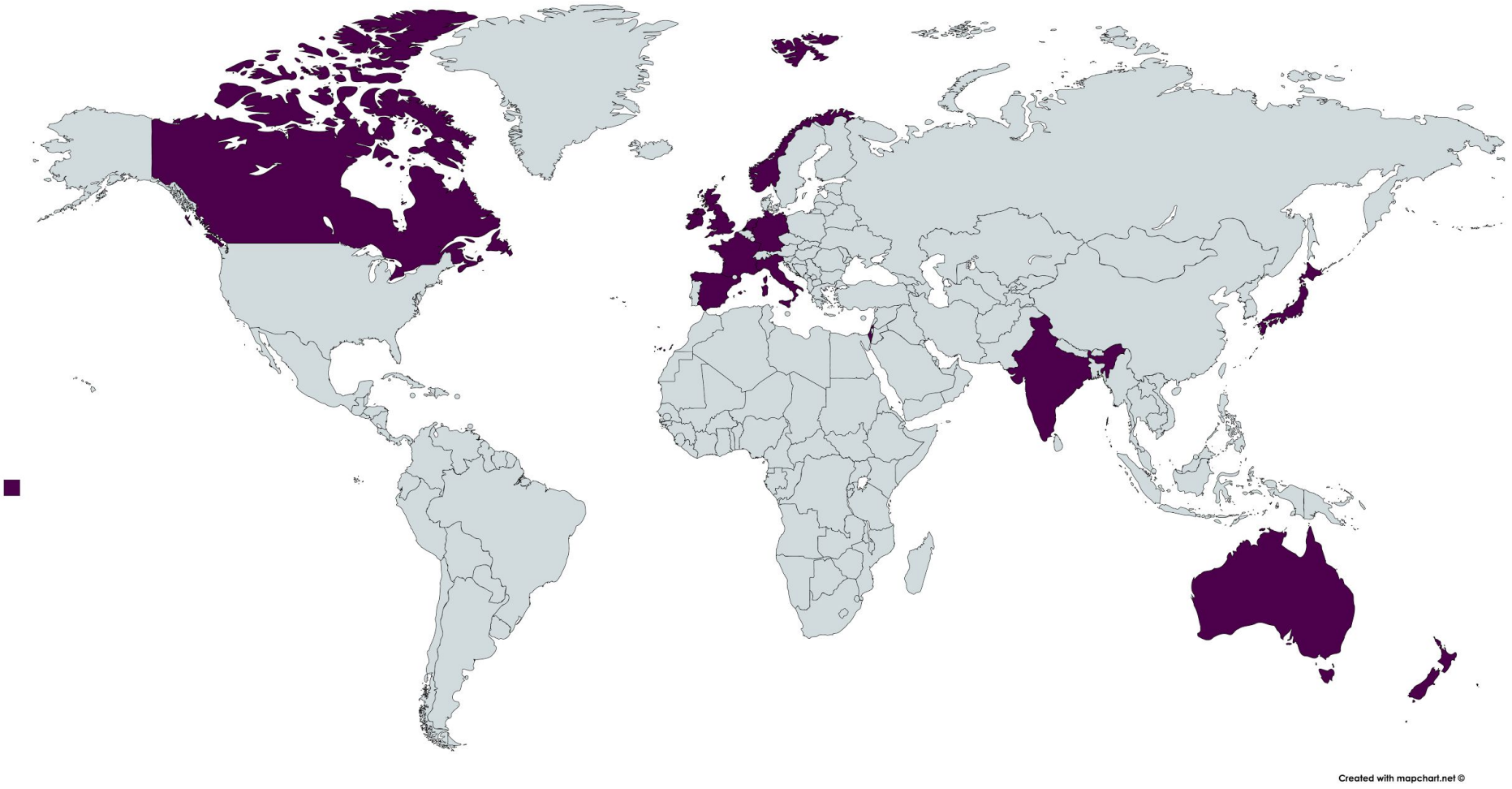
-W3C WAI

POUR

Guiding principles of accessibility under 2.0:

- Perceivable
- Operable
- Understandable
- Robust

WCAG 2.0



Four Main Categories

Visual

Examples:

- Blindness
- Color Blindness
- Glaucoma
- Cataracts

Auditory

Examples:

- Deafness
- Acoustic Trauma
- Auditory Processing Disorder
- Tinnitus

Motor/Physical

Examples

- Cerebral Palsy
- Parkinson’s
- Arthritis
- Paralysis

Cognitive/Neurological

Examples:

- Attention Disorders
- Autism
- Dyslexia
- Mental Health Issues
- Seizure Disorders

Language/Speech

Examples:

- Muteness
- Selective Mutism
- Stuttering
- Cluttering
- Apraxia of Speech

Other categories to consider:

- Permanent
- Episodic
- Acquired
- Societal

-David Berman

Alternative Input/Output

- Foot pedals
- Touch screens
- Eye tracking
- Speech recognition
- Closed Captioning
- Braille Display
- Captions/Transcripts
- Sip and Puff
- One button

Screen Readers

- Allow blind or visually impaired users to “hear” website content
- Around 10 million blind/visually impaired people in the US
- Can be used by others navigating webpages using alternative inputs

Think Deeper

Categories can be **deceptively simple**: Users don’t always fall into one category

Users can be using multiple inputs and outputs

People are **complicated**

Think In A New Paradigm

Not edge cases, stress cases, or

“...the moments that put our design and content choices to the test of real life.”

-Eric Meyer & Sara Wachter-Boettcher

How can you plan for stress cases?

Follow WCAG 2.0

Many standards for many different situations

Checklists available by multiple sources

But generic

Inclusive Design

Sometimes known as

- Universal Design
- Design for All

Strategies for accessible solutions

Consider User Experience

You don’t have to be a designer

Good UX = Good Accessibility

Use Logic

What is the user flow you think should happen

Why might it not?

How can you make alternatives work?

Have Compassion

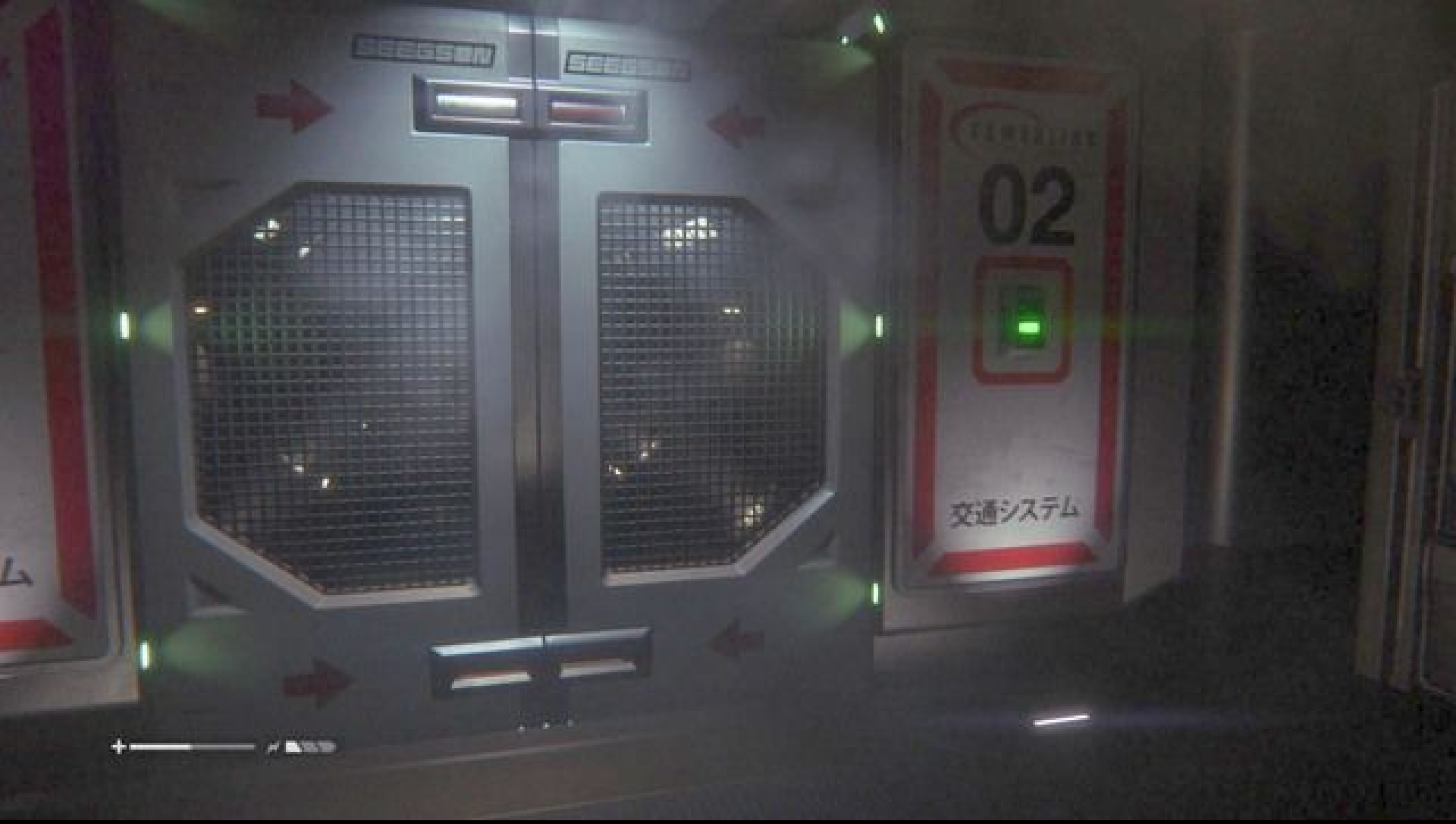
Your users are relying on you

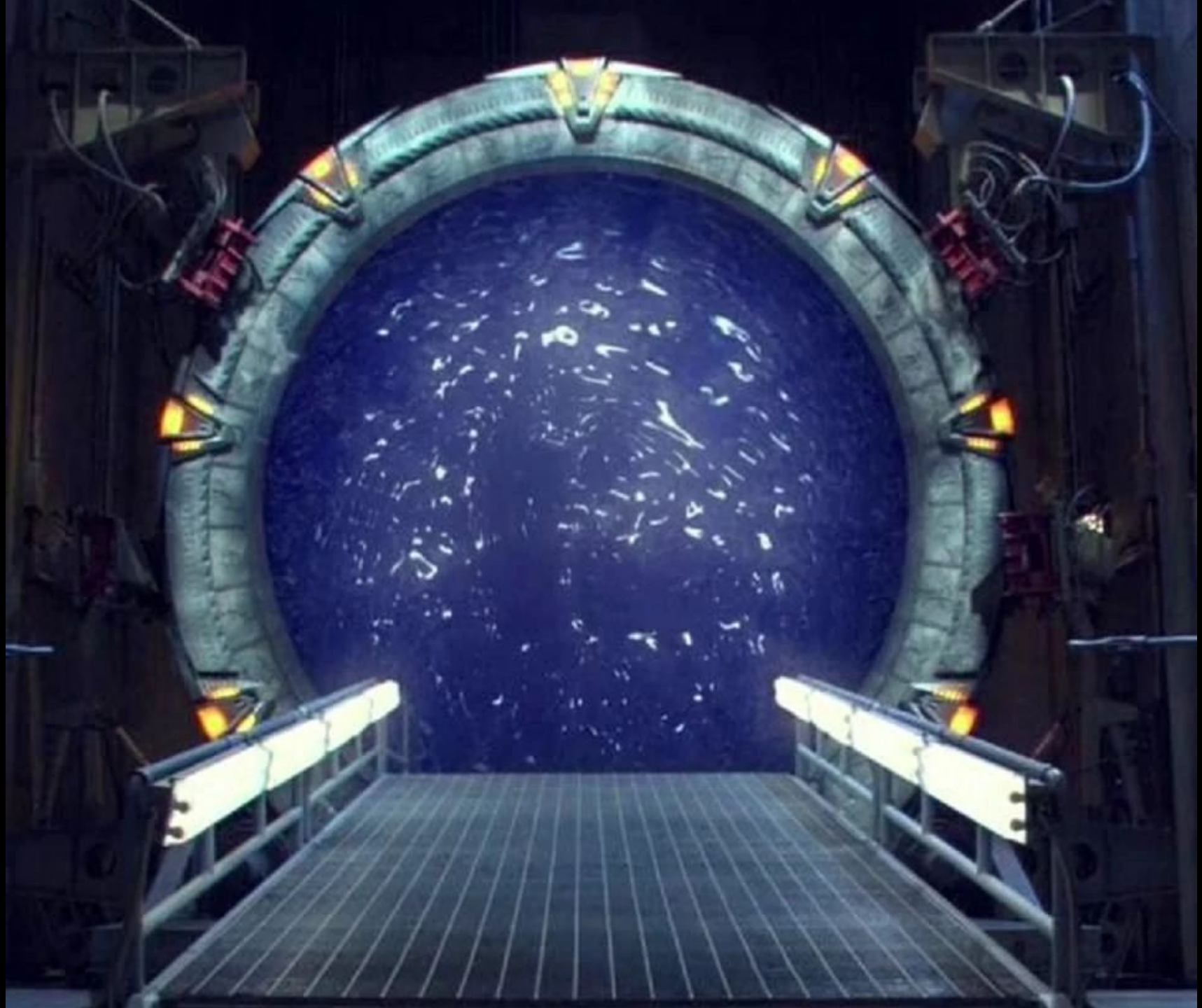
Not all users are the same, not everyone has the abilities you do

How can you assist them?

How can you show kindness to your users?

A Metaphor


02
交通システム



Tools are not everything

Tests can miss issues

More importantly--unless you created them, they’re generic

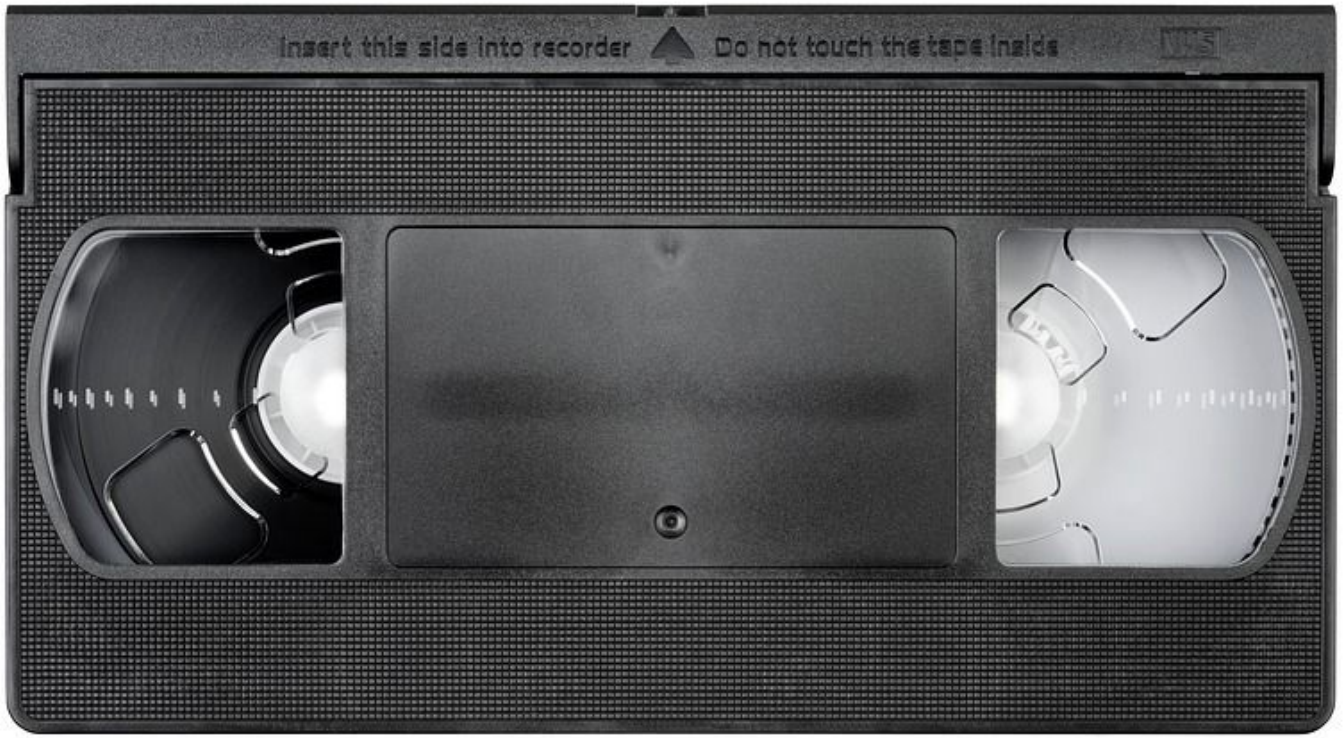
Generic tests don’t know how your users use your product

Automation + Optimization != infallibility

Sometimes great tools for your website don’t take accessibility into account

Sometimes they require extra work

A lot of optimization tools require customization to keep “unnecessary” code like aria tags


Insert this side into recorder
Do not touch the tape inside

YouTube

Search

99+

Home Trending Subscriptions

Recommended

Play all

Overwatch is BROKEN! - Gain

Diablo 3 Basics - All About

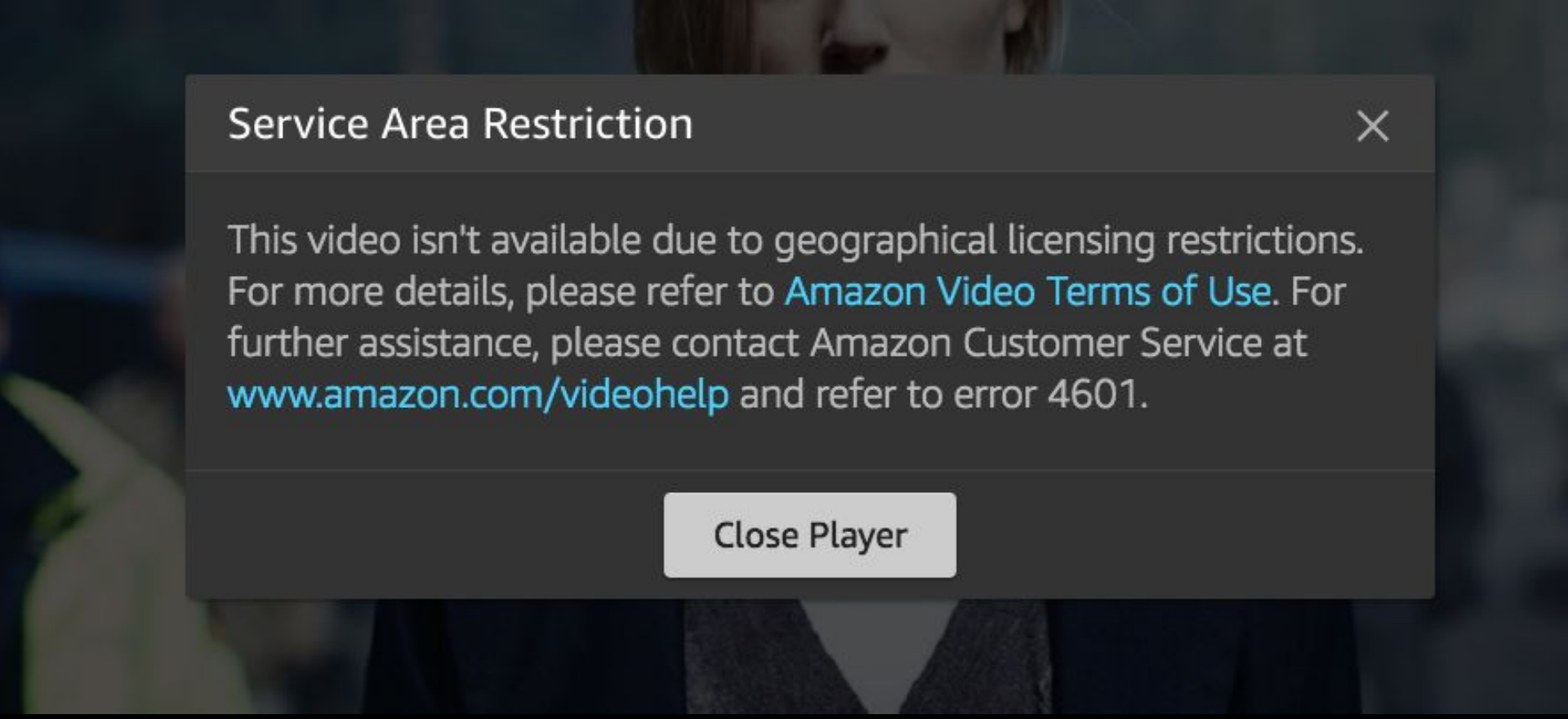
10 Starcraft Facts You

Overwatch - Luciohall Guide -

Sinclair Broadcast Group: Last

The Internet's 'curb'

Keyboard navigate to one element...don't bother to check further


Service Area Restriction
This video isn't available due to geographical licensing restrictions. For more details, please refer to Amazon Video Terms of Use. For further assistance, please contact Amazon Customer Service at www.amazon.com/videohelp and refer to error 4601.
Close Player

Good Accessibility

==

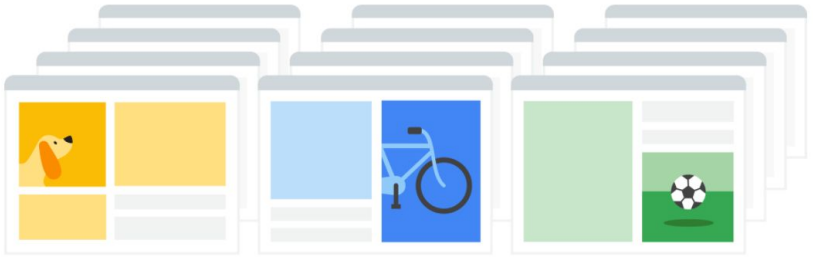
Good Code In General

How You Organize Data Matters

Crawling and indexing

As we speak, Google is using web crawlers to organize information from webpages and other publicly available content in the Search index.

LEARN MORE



From Google's "How Search Works" page

US Accessibility Standards:

- Section 508
- Section 504
- Americans with Disabilities Act (ADA)

Who is accessibility for?

Everyone!

Seriously, everyone benefits from accessibility.

People with disabilities, web crawlers, devs, etc.

But what about good accessibility?

Color & Size

Many tools to check contrast

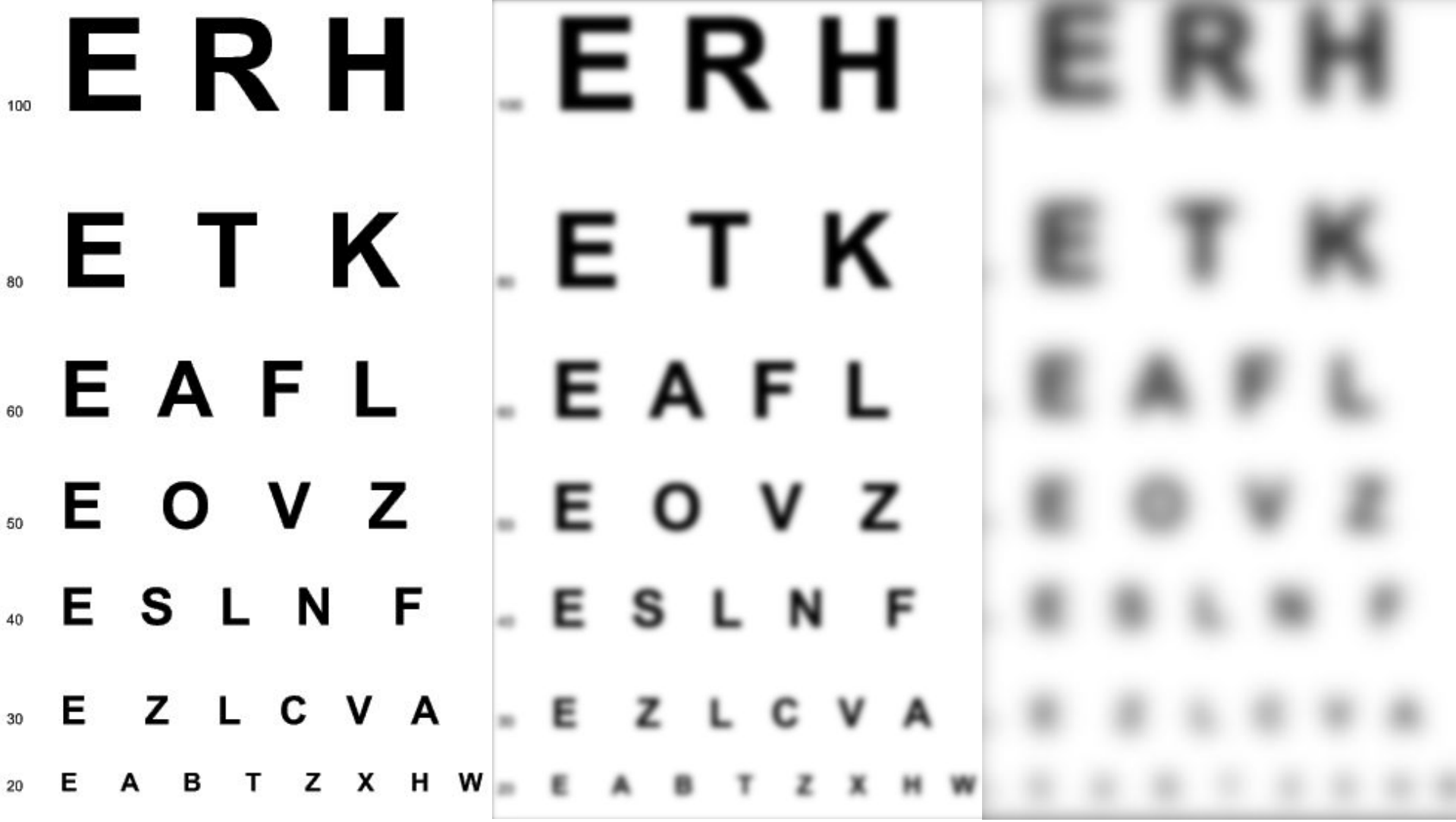
Size and weight of text matters

Example

Example

Example

Example


100
E R H
80
E T K
60
E A F L
50
E O V Z
40
E S L N F
30
E Z L C V A
20
E A B T Z X H W

Make Changes Noticeable

Password

Password

✘ Password

✘ Password (something went wrong)

Aria Attributes

- Can do things like alert users with screen readers of changes
- Make up for visual cues
- Help identify parts of form fields
- Write long descriptions for small elements

Have feedback in as many ways as you can

Don’t just use color

Or sound

Or haptic feedback

Caps Lock
Page Down
Ctrl
Alt
Enter
Tab
Insert

Screen Readers Vary

Check everything on multiple screen readers

Check multiple browsers with the same screen reader

Realize you are probably not a normal user

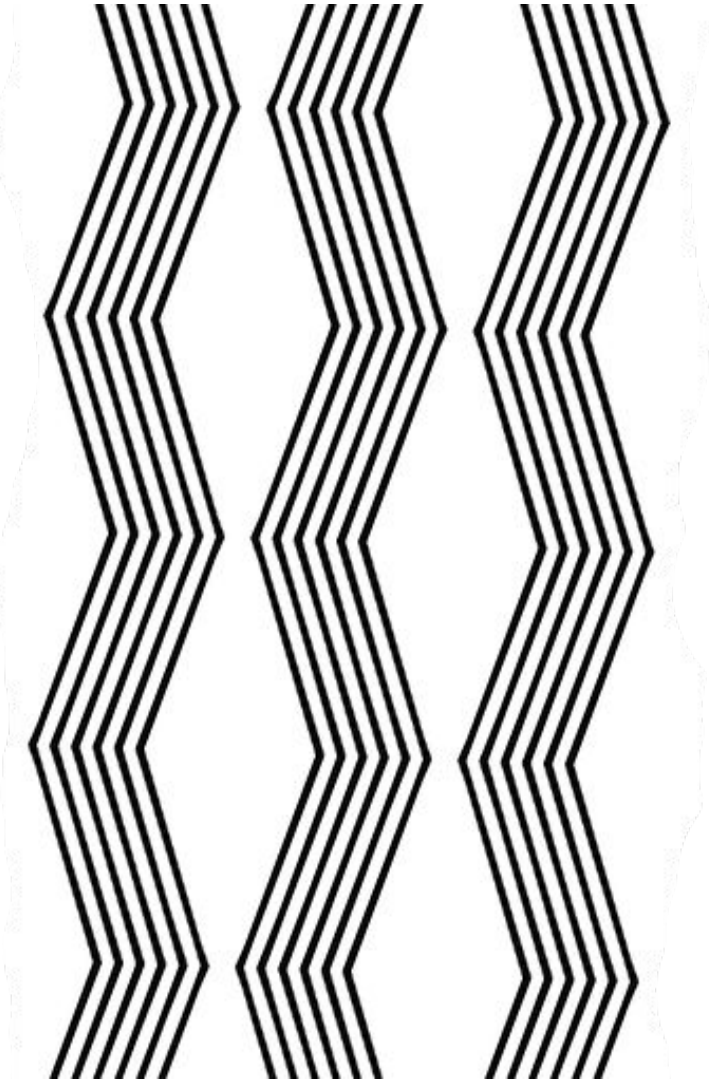
Common Choices That Are Awful For Accessibility:

Is your styling just a gimmick?

Is it good design or is it just the style that’s popular?

Is it good design if it can cause issues for users?

Example Text



Autoplay Is Rarely Accessible

- Audio interrupts screen readers
- Unwelcome surprise
- Distraction
- Causes pain

Kodak
Kodak
Virgin
VORNADO
VORNADO
SICK ALL THE TIME?
info4pl.org
MARQUIS
95

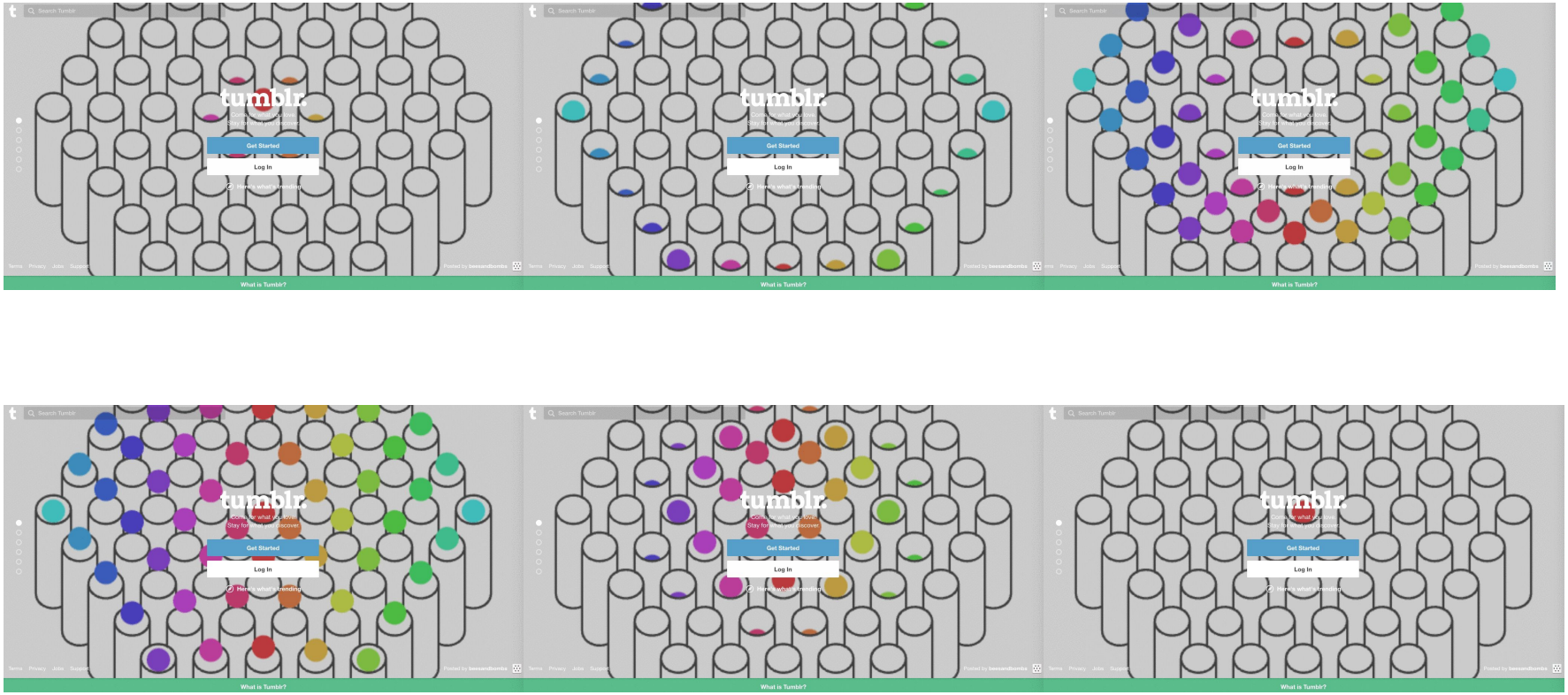
Ads

Yes, supposedly they’re making your site money

But people use ad blockers for lots of reasons

The trend of blocking ad blockers makes your site way less accessible

Use Animation Sparingly



Is The Styling Causing Harm?

Consult People With Disabilities

They’re the true experts on how they use the web

The more diverse the group, the better

All of Your Content Is Important

Accessible for some != accessible for all

Some accessibility concerns might look perfect for certain users

But then be bad for others

- Word choice
- BOLD colors/contrasts
- Text vs Images

Accessibility Can Mean Finding Middle Ground

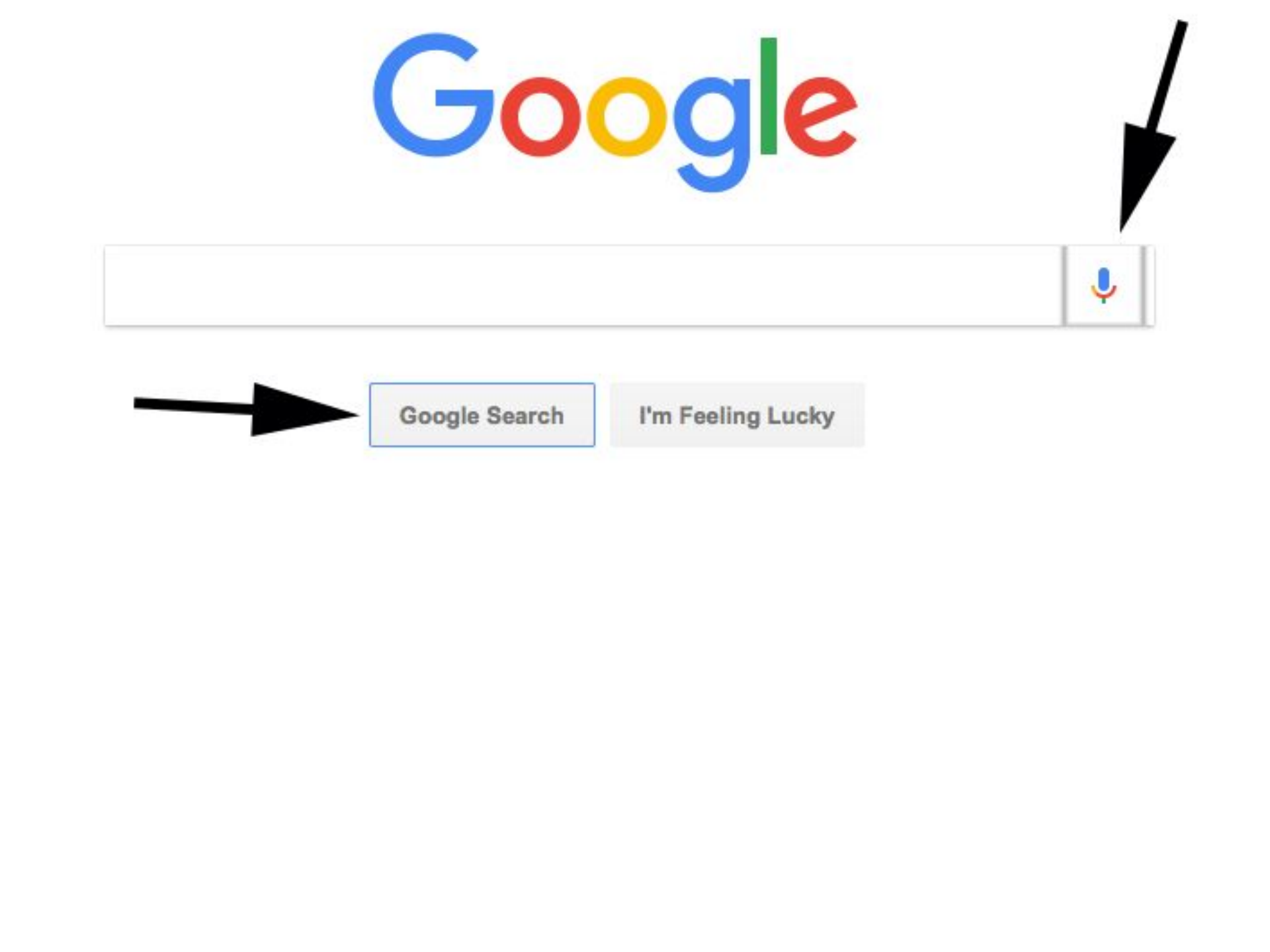
There may be some push-back

Stakeholders might want something a certain way

Designers may not wish to compromise on their vision

Developers might insist the code is too hard/would take too long

Your Accessibility Will Probably Not Be Perfect


Google
Google Search
I'm Feeling Lucky

DO NOT DO THIS

```
:focus {
  outline: none;
}
```

Instead of taking away focus state, **change** focus state

Browsers have defaults for a reason, but if your designers insist….

AND NOW, THE WEATHER...

Code Example

SVGs

Easy! Right?

Inline SVGs are some of the most accessible images you can use

Using <img> means a loss of accessibility

```
<svg xmlns="http://www.w3.org/2000/svg" viewBox="0 0 32 32"
class="svg-apple" role="img" aria-labelledby="apple__title">
  <title id="apple__title">Apple</title>
  <path fill="#444" d="M24.734 17.003c-.04-4.053 3.305-5.996
3.454-6.093-1.88-2.751-4.808-3.127-5.851-3.171-2.492-.252-4.862
1.467-6.127 1.467-1.261 0-3.213-1.43-5.28-1.392-2.716.04-5.221 1.579-6.619
4.012-2.822 4.897-.723 12.151 2.028 16.123 1.344 1.944 2.947 4.127 5.051
4.049 2.026-.081 2.793-1.311 5.242-1.311s3.138 1.311 5.283 1.271c2.18-.041
3.562-1.981 4.897-3.931 1.543-2.255 2.179-4.439
2.216-4.551-.048-.022-4.252-1.632-4.294-6.473zM20.705 5.11C21.822 3.755
22.576 1.875 22.37 0c-1.609.066-3.559 1.072-4.713 2.423-1.036 1.199-1.942
3.113-1.699 4.951 1.796.14 3.629-.913 4.747-2.264z"/>
</svg>
```

How directories might look

...

static

static_src

templates

....

content_helpers.py

```
def icon(name):
    try:
        path = find(join('icons', name + '.svg'))
        with open(path) as svg:
            return mark_safe(svg.read())
    except Exception:
        if settings.DEBUG:
            raise ValueError('Could not open {}.svg'.format(name))
        return '<span
class="icon-fallback">{}</span>'.format(name)
```

{% icon ‘apple’ %}

```
▼<svg xmlns="http://www.w3.org/2000/svg" viewBox="0 0 32 32"
class="svg-apple" aria-labelledby="apple__title" role="img">
    <title id="apple__title">Apple</title>
    <path fill="#444" d="M24.734 17.003c-.04-4.053 3.305-5.996
    3.454-6.093-1.88-2.751-4.808-3.127-5.851-3.171-2.492-.252-
    4.862 1.467-6.127 1.467-1.261 0-3.213-1.43-5.28-1.392-
    2.716.04-5.221 1.579-6.619 4.012-2.822 4.897-.723 12.151
    2.028 16.123 1.344 1.944 2.947 4.127 5.051 4.049
    2.026-.081 2.793-1.311 5.242-1.311s3.138 1.311 5.283
    1.271c2.18-.041 3.562-1.981 4.897-3.931 1.543-2.255 2.179-
    4.439 2.216-4.551-.048-.022-4.252-1.632-4.294-
    6.473zM20.705 5.11C21.822 3.755 22.576 1.875 22.37 0c-
    1.609.066-3.559 1.072-4.713 2.423-1.036 1.199-1.942 3.113-
    1.699 4.951 1.796.14 3.629-.913 4.747-2.264z"></path>
  </svg>
```

Finishing Up!

Tools

- Chrome Accessibility Developer Tools (extension)
- NoCoffee (extension)
- AChecker (website) / WAVE Evaluation Tool (extension)
- JAWS (screen reader)

Contact Me

http://dragun.tech

github: lmdragun

lmdragun@gmail.com

None-stock Image Sources

[1] SFweekly

[2] StarTrek.com

[3] Stargate wiki

[4] comingsoon.net

[5] guides.gamepressure.com

[6] Youtube (Welcome to Night Vale)