

The background of the slide is a dark blue-grey color. On the left side, there is a large, semi-transparent image of a circular electronic circuit board. Overlaid on the top-left corner are two overlapping geometric shapes: a blue parallelogram and a light green parallelogram. In the top-right corner, there is an orange rectangular box containing white text.

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The Intersection of Accessibility and Inclusive Design

Improving quality by developing and
designing products for all of our users.

Michael Larsen

Senior Quality Assurance Engineer: LTG/PeopleFluent

Co-Host, Producer: The Testing Show (Podcast)

Blog: <https://mkltesthead.com/>

Twitter: @mkltesthead

LinkedIn: <https://www.linkedin.com/in/mkltesthead/>





What Is My Motivation Here?

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Encourage the development of products to allow as many people as possible to access information.

Design products to allow people with disabilities a similar experience as their normative counterparts.

What Is My Motivation Here?

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wilkie (ノツ)/butt
@wilkieii



Following

I'm worried that people are more concerned with getting their websites working on rich people's watches rather than for the blind.

 Kiel, WI



RETWEETS
775

FAVORITES
523



12:17 PM - 16 Mar 2015

What Is My Motivation Here?



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Why Should We Care?

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It's the right thing to do.

It's the law in many places.

Accessible sites are more usable for everyone.

It's good business.





Why Should We Care?

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In the USA, 1 in 4 people have some form of disability.

Many people not considered disabled have some sort of disability – even if it is simply wearing glasses.

Design taken for granted one day may be insufficient the next.

Every One of Us Will Deal with a Disability at Some Point

- Visual
- Auditory
- Motor
- Cognitive
- Combination of any of those listed.
- Primary or Secondary/Situational

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Accessibility & Inclusive Design Impacts Everyone

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Populations are living longer,
and striving to keep doing
the things that matter to
them.



Accessibility & Inclusive Design Impacts Everyone

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People are not “able bodied” or “disabled”. There is a continuum, and all of us sit on and move along that continuum as we age.



Accessibility & Inclusive Design Impacts Everyone

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Minimizing capability demands allows more people to use our products.



Accessibility & Inclusive Design Impacts Everyone

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The greater population able to use our products directly improves the overall user experience for everyone.



Accessibility

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“The design of products, devices, services, or environments for people with disabilities. The concept of accessible design ensures both "direct access" (i.e. unassisted) and "indirect access" meaning compatibility with a person's assistive technology.”

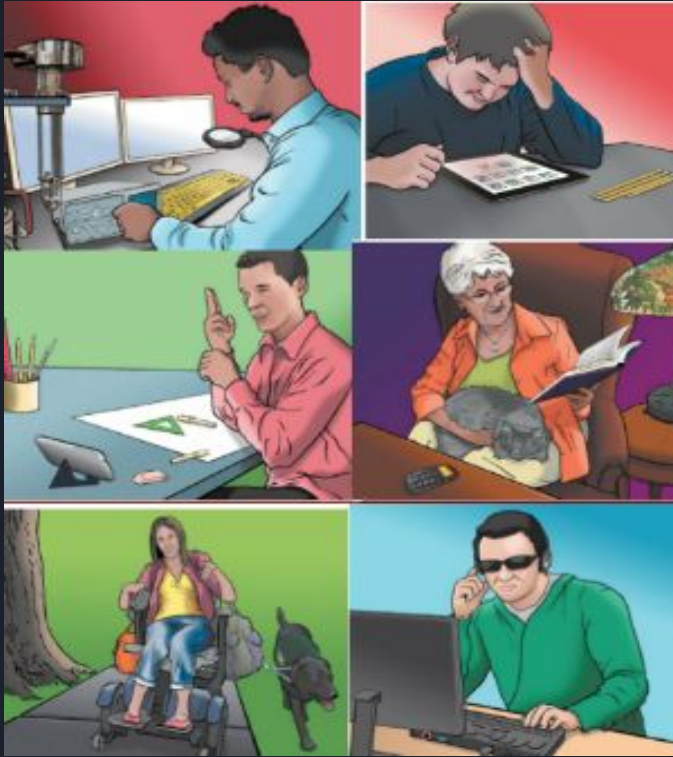


Inclusive Design

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“The design of mainstream products and/or services that are accessible to, and usable by, as many people as reasonably possible ... *without the need for special adaptation or specialized design.*”

Who are we?



Visual Issues


Auditory Issues

Mobility Issues

Cognitive Issues

Any or all of the above

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Primary vs. Secondary Disabilities

Hearing – in a loud environment

Cognitive – when stressed or distracted

Visual – web on a mobile screen

Language – ESL, or any 2nd language

Some excellent practices

<https://github.com/UKHomeOffice/posters>

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Designing for users with low vision



Do...

use good colour contrasts and a readable font size



publish all information on web pages



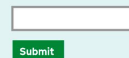
use a combination of colour, shapes and text



follow a linear, logical layout



put buttons and notifications in context



Don't...

use low colour contrasts and small font size



bury information in downloads



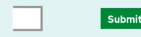
only use colour to convey meaning



spread content all over a page



separate actions from their context



Some excellent practices

<https://github.com/UKHomeOffice/posters>

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Designing for users of screen readers



Do...

describe images
and provide
transcripts
for video

`<alt>`

follow a linear,
logical layout



structure content
using HTML5

`<h1>`
`<nav>`
`<label>`

build for keyboard
use only



write descriptive
links and headings

[Contact us](#)

Don't...

only show
information in an
image or video



spread content
all over a page



rely on text size
and placement
for structure

36pt, bold
Header

force mouse or
screen use



write uninformative
links and headings

[Click here](#)

Some excellent practices

<https://github.com/UKHomeOffice/posters>

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Designing for users who are D/deaf or hard of hearing



Do...

write in plain language

Do this.

use subtitles or provide transcripts for videos



use a linear, logical layout



break up content with sub-headings, images and videos



let users ask for their preferred communication support when booking appointments



Don't...

use complicated words or figures of speech



put content in audio or video only



make complex layouts and menus



make users read long blocks of content



make telephone the only means of contact for users



Home Office Digital, Data and Technology



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For more information, contact: access@digital.homeoffice.gov.uk






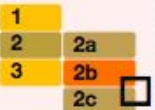


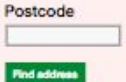

Some excellent practices

<https://github.com/UKHomeOffice/posters>

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Designing for users with physical or motor disabilities



Do...	Don't...
make large clickable actions 	demand precision 
give form fields space 	bunch interactions together 
design for keyboard or speech only use 	make dynamic content that requires a lot of mouse movement 
design with mobile and touchscreen in mind 	have short time out windows 
provide shortcuts 	tire users with lots of typing and scrolling 

Home Office Digital, Data and Technology

For more information, contact: access@digital.homeoffice.gov.uk

Some excellent practices

<https://github.com/UKHomeOffice/posters>

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Designing for users with dyslexia



Do...

use images and diagrams to support text



align text to the left and keep a consistent layout



consider producing materials in other formats (eg. audio or video)



keep content short, clear and simple (journalistic style)



let users customise the contrast between background and text



Don't...

produce blocks of text or text heavy pages



underline words, use italics or write in capitals

DON'T DO THIS

force users to rely on their memory - use prompts and inline text



require users to spell correctly - use autocorrect or provide suggestions



communicate complex information on one screen



Home Office

Home Office Digital

For more information, contact:
access@digital.homeoffice.gov.uk

Some excellent practices

<https://github.com/UKHomeOffice/posters>

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Designing for users on the autistic spectrum



Do...

use simple colours



write in plain English

Do this.

use simple sentences and bullets



make buttons descriptive

Attach files

build simple and consistent layouts



Don't...

use bright contrasting colours



use figures of speech and idioms



create a wall of text



make buttons vague and unpredictable

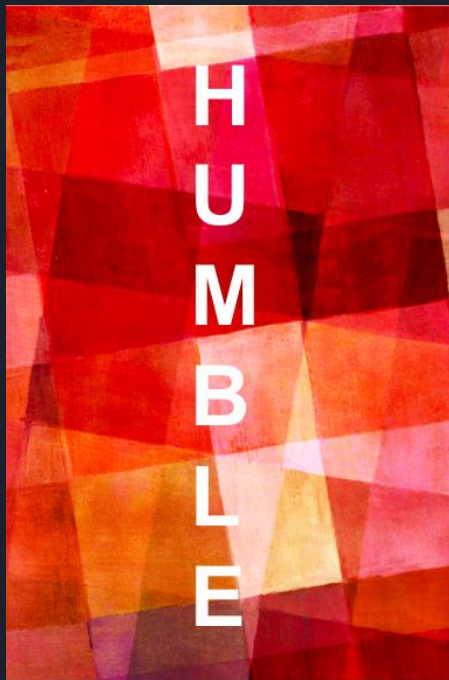
Click here!

build complex and cluttered layouts





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PRACTICE EMPATHY: BE “HUMBLE”

Humanize

Unlearn

Model

Build

Learn

Experiment



BE HUMBLE

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HUMANIZE

Be empathetic, understand the emotional components.



BE HUMBLE

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UNLEARN

Step away from your default [device specific] habits.
Switch into different habit modes.



BE HUMBLE

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MODEL

Use personas that help you see, hear and feel the issues.
Consider behaviors, pace, mental state and system state.



BE HUMBLE

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BUILD

Knowledge, Testing Heuristics, Core Testing Skills,
Testing Infrastructure, Credibility



BE HUMBLE

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LEARN

Learn: what are the barriers? How do users Perceive,
Understand and Operate?



BE HUMBLE

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EXPERIMENT

Put yourself into literal situations. Collaborate with designers and programmers, provide feedback.

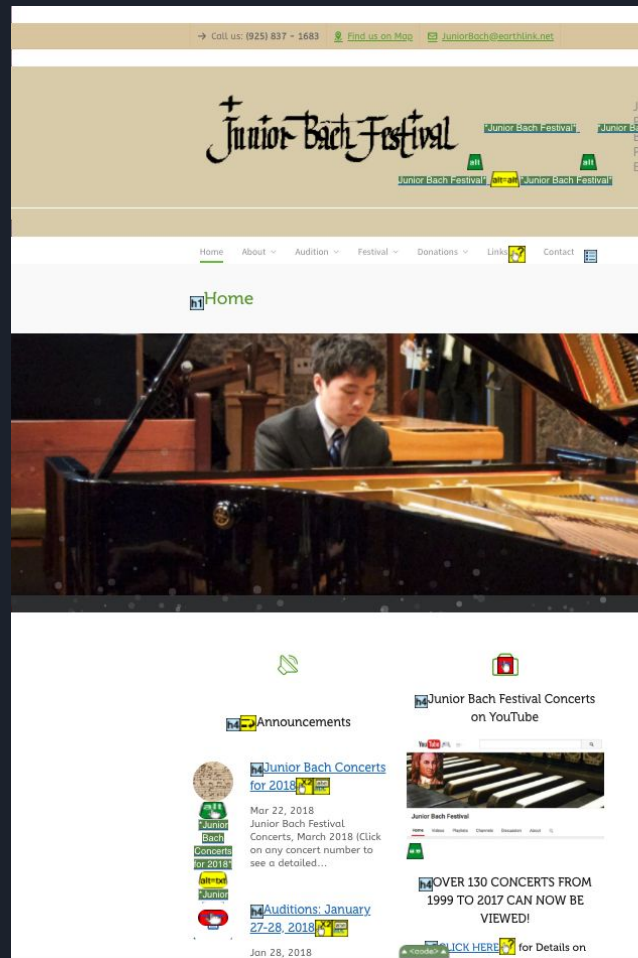
Toys and Tools

WAVE

Web based application at
<http://wave.webaim.org>

Also a PlugIn for Chrome and
Firefox

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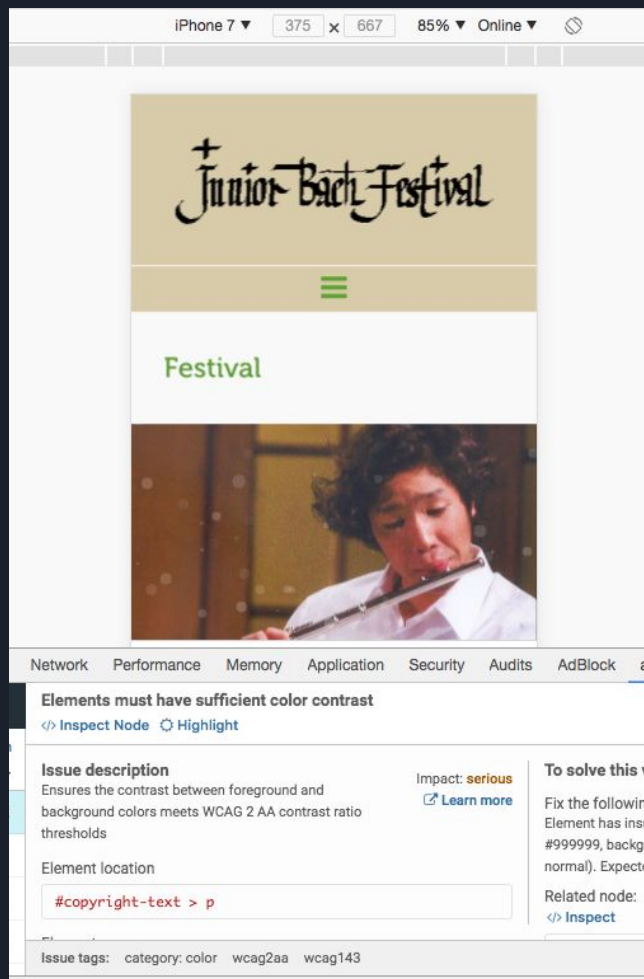
Toys and Tools

aXe

Extension for Chrome and Firefox

Resides with the Developer tools

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Toys and Tools

W3C Before and After

<https://www.w3.org/WAI/demos/bad/>

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Multiple Home Page
After Demonstration

Web Content Accessibility Guidelines (WCAG) 2.0

News Tickets Survey Template

Home Page Report Hide Annotations

CITYLIGHTS *your access to the city*

Construction work on Main Road Today: Tuesday 27 March 2018, Sun

OME

NEWS

CKETS

URVEY

Welcome to CityLights

Citylights is the new portal for visitors and residents. Find out what's on, book tickets, and get the latest news.

Heat wave linked to temperatures

After three years of effort city scientists now agree that the primary cause of the 2003 heatwave was hot air from our [MORE](#)

Man Gets Nine Months in Violin Case

Mayor: These kinds of crimes need more creative, effective punishments. For example, we could require compulsory [MORE](#)

Lack of brains hinders research

Brain donations: huge drop off in brain donations due to the great 'success' of 'Slow Traffic, Safe Streets' policy [MORE](#)

Elsewhere on the Web

Please see the following websites for important information. Citylights take no responsibility for their content. For artichoke advice, call the number below.

[Killer bees. Click here.](#)

[Onions. Click here.](#)

Artichoke advice telephone hotline: (1) 289 (H-O-W-E)

Free Peng

"Free peng slogan at zo concert cau confusion a rockers. Ad verb?" [Read More](#)

More City

More parks green through city at the p already rare parking spa will this aff [Read More](#)

Toys and Tools

HEMINGWAY

Analyzes writing

Offers suggestions to clean it up.

Shows target range of readership

9th Grade Reading Level is the sweet spot

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The screenshot displays the Hemingway app's interface. At the top, there are navigation tabs: H2, H3, Quote, Bullets, Numbers, and Link. A 'Write' button is located in the top right corner. The main text area contains a paragraph about J.S. Bach, with several lines highlighted in red, green, and blue to indicate different types of issues. To the right of the text, a sidebar provides statistics and suggestions. The sidebar includes a 'Readability' section with a 'Grade' indicator (OK, Aim), a 'Reading time' section (Letters: 22, Characters: 40, Words: 40, Sentences: 4, Paragraphs: 1), and a 'Show Less' button. Below this, there are four colored boxes with numbers and text: a blue box with '4' and 'adver', a green box with '13' and 'uses to 6 or fe', a purple box with '3' and 'phras alternati', and a yellow box with '1' and 'of 28 read'. At the bottom, there is a red box with '9' and 'of 28 hard to r'. The main text area also shows several lines of text with color-coded highlights: 'is 18 years as of February 1, 2018, except for', 's, harpsichordists, organists, and accompanists', 'd as 20 years on that date. Young unchanged', 'ne.', 'identified by Schmieder index number, as listed in', 'Werke-Verzeichnis (BWV) catalog of works', 'anged by J. S. Bach. Urtext (authentic) editions are', 'nded. Recommended editions of Bach's works are', 'er, and Peters. Transcriptions (but not', 'er modern instruments may be entered. Suites and', 'submitted by selected movements or as complete', 'ail juniorbach@earthlink.net if there are questions', 'ity of entries.', 'N is required for solo performance on all', 'the exception of organ and harpsichord.', 'mbles, defined as 2 or more players, may use', 'des concertos with keyboard accompaniment,', 'ization by the solo instrument is still encouraged.', 'in minutes must be stated accurately. Suites and', 'submitted by selected movements or complete.', 'e option to select only certain movements for', 'nce. Complete works rarely exceed 20 minutes.', 'nsist of more than a single short piece (but not', 'patible pieces) on the same instrument, providing', 'e does not exceed 10 minutes. Repeats should not', 'ornamented differently. Da capo repeats are', 'ctor that into duration calculations.'

Toys and Tools

COLOR CONTRAST ANALYZER

- Plug-In for Chrome
- Quick view to determine what falls into range for color contrast.

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Where to Learn More

- **WAI/ARIA:**

- <http://www.w3.org/WAI/intro/aria>

- **Web Content Accessibility Guidelines (WCAG):**

- <http://www.w3.org/TR/WCAG20/>

- **Inclusive Design Toolkit (University of Cambridge)**

- <http://www.inclusivedesigntoolkit.com/betterdesign2/>

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Toolbox

WAVE, Web Accessibility Evaluation Tool:

<http://wave.webaim.org/>

aXe: the Accessibility Engine:

<https://www.deque.com/axe/>

Color Contrast Analyzer:

<http://accessibility.oit.ncsu.edu>

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Toolbox

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Hemingway Editor:

<http://www.hemingwayapp.com/>

Web Content Accessibility Guidelines (WCAG)

Overview, W3C, Web Accessibility Initiative:

<https://www.w3.org/WAI/intro/wcag>

**Before and After Demonstration, W3C, Web
Accessibility Initiative:**

<https://www.w3.org/WAI/demos/bad/>

Final Thoughts

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If you are not clear about what you are looking at or for, your intended users won't be clear on it, either.



Further Reading

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<https://en.wikipedia.org/wiki/Accessibility>
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British Standards Institute. 2005. “What is Inclusive Design?”:
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Disabled World. “Defining Disability Diversity in Society”:
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Further Reading

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<https://www.census.gov/newsroom/releases/archives/miscellaneous/cb12-134.html>
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World Health Organization: World Report on Disability:
<https://www.who.int/teams/noncommunicable-diseases/sensory-functions-disability-and-rehabilitation/world-report-on-disability>
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North Carolina State University. The Principles of Universal Design:
https://projects.ncsu.edu/ncsu/design/cud/pubs_p/docs/poster.pdf
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<https://www.w3.org/WAI/intro/wcag>
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[https:// www.w3.org/WAI/demos/bad/](https://www.w3.org/WAI/demos/bad/) (accessed October 9, 2022)



Further Reading

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<https://abookapart.com/products/accessibility-for-everyone>
(accessed October 9, 2022)

S. Horton and W. Quesenbery, 2013, “A Web for Everyone”, Rosenfeld Media:
<https://rosenfeldmedia.com/books/a-web-for-everyone/>
<https://rosenfeldmedia.com/books/a-web-for-everyone/>
(accessed October 9, 2022)



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QUESTIONS???