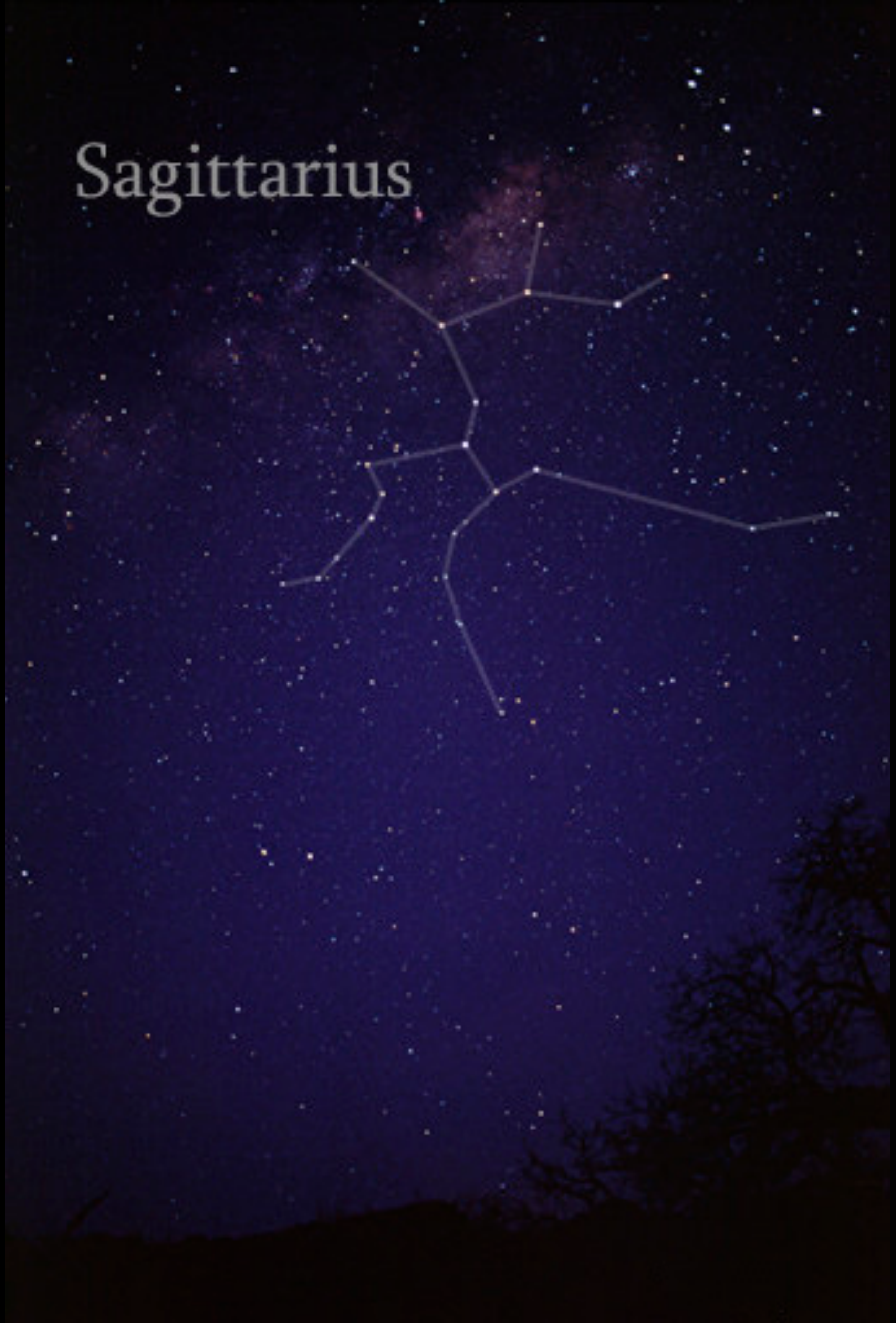
Connecting the Accessibility Dots

Eric Eggert · AccessU · May 2020

Eric Eggert

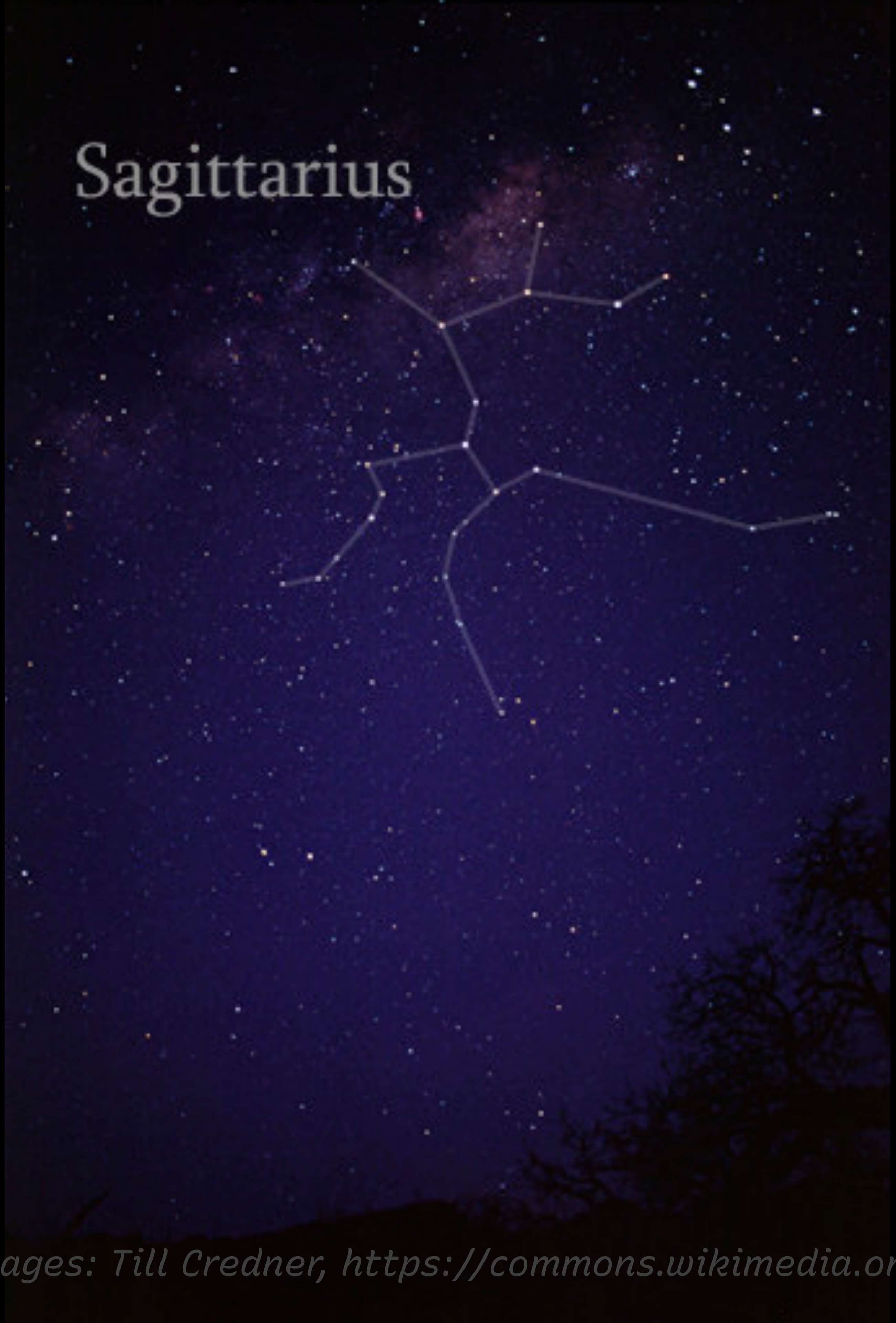
Eric Eggert is a Web Developer and Teacher who works with Knowbility on improving the Web for People with Disabilities, and everyone else.

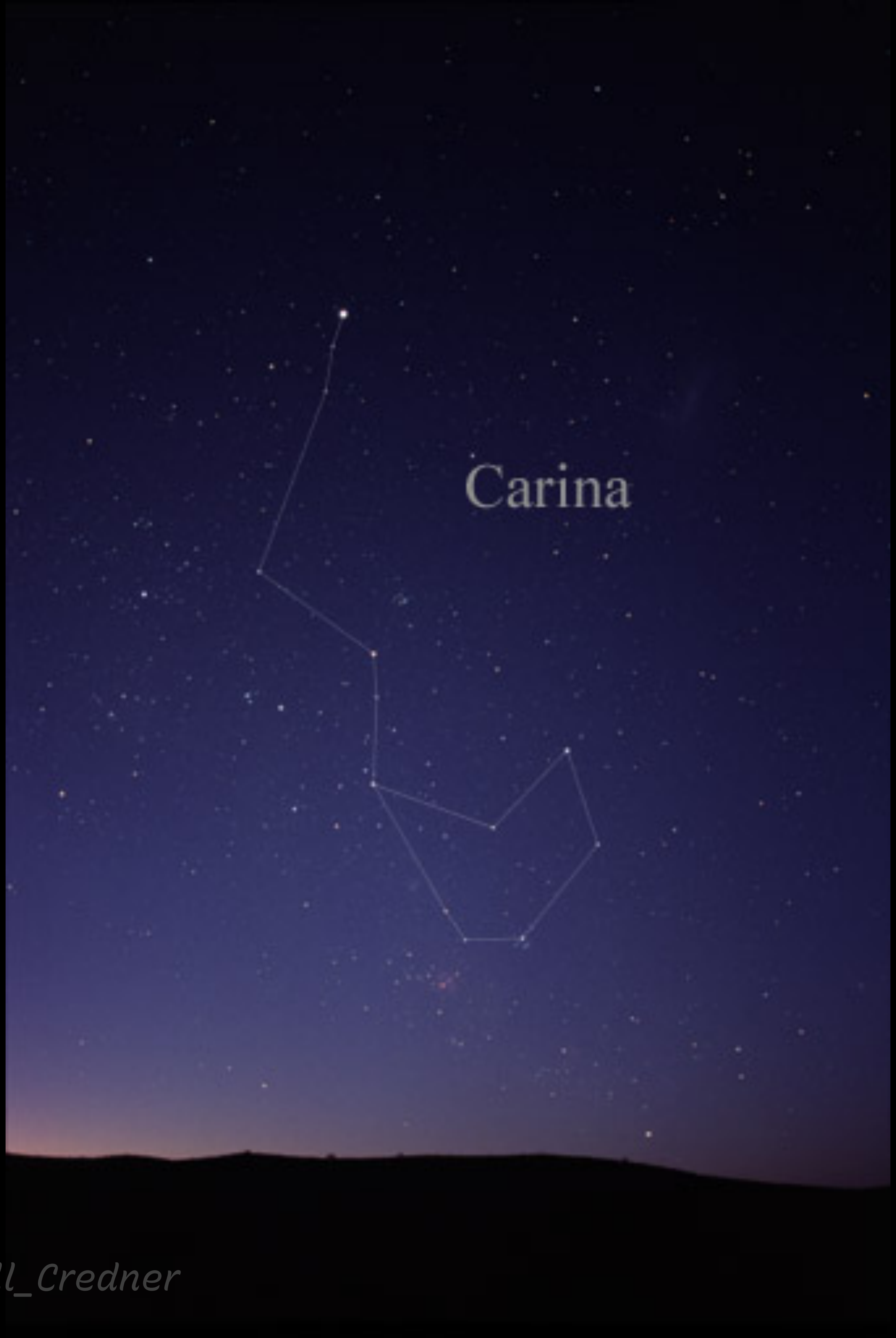
2013–2020: W3C/Web Accessibility Initiative



Sagittarius

Connecting arbitrary dots that fits one’s own view.





Images: Till Credner, https://commons.wikimedia.org/wiki/User:Till_Credner

The Big Picture

98.1%

Detectable WCAG Failures

↗️ from 97.8% in February 2019

WebAIM: The WebAIM Million

WebAIM Million

WCAG Failure Type	Feb 2019	Feb 2020	Change
Low contrast text	85.3%	86.3%	↗️ +1.0%
Missing alternative text for images	68.0%	66.0%	↘️ −2.0%
Empty links	58.1%	59.9%	↗️ +1.8%
Missing form input labels	52.8%	53.8%	↗️ +1.0%
Empty buttons	25.0%	28.7%	↗️ +3.7%
Missing document language	33.1%	28.0%	↘️ −5.1%

WebAIM: The WebAIM Million

How do I make this accessible?

this

Why…?

- → Why is accessibility important?
- → Why don’t we have safeguards that ensure accessibility?
- → Why did the designer design inaccessibly?
- → Why did the developer implement inaccessibly?
- → Why did the PM not catch it?
- → Why did we decide for this feature?

CRPD

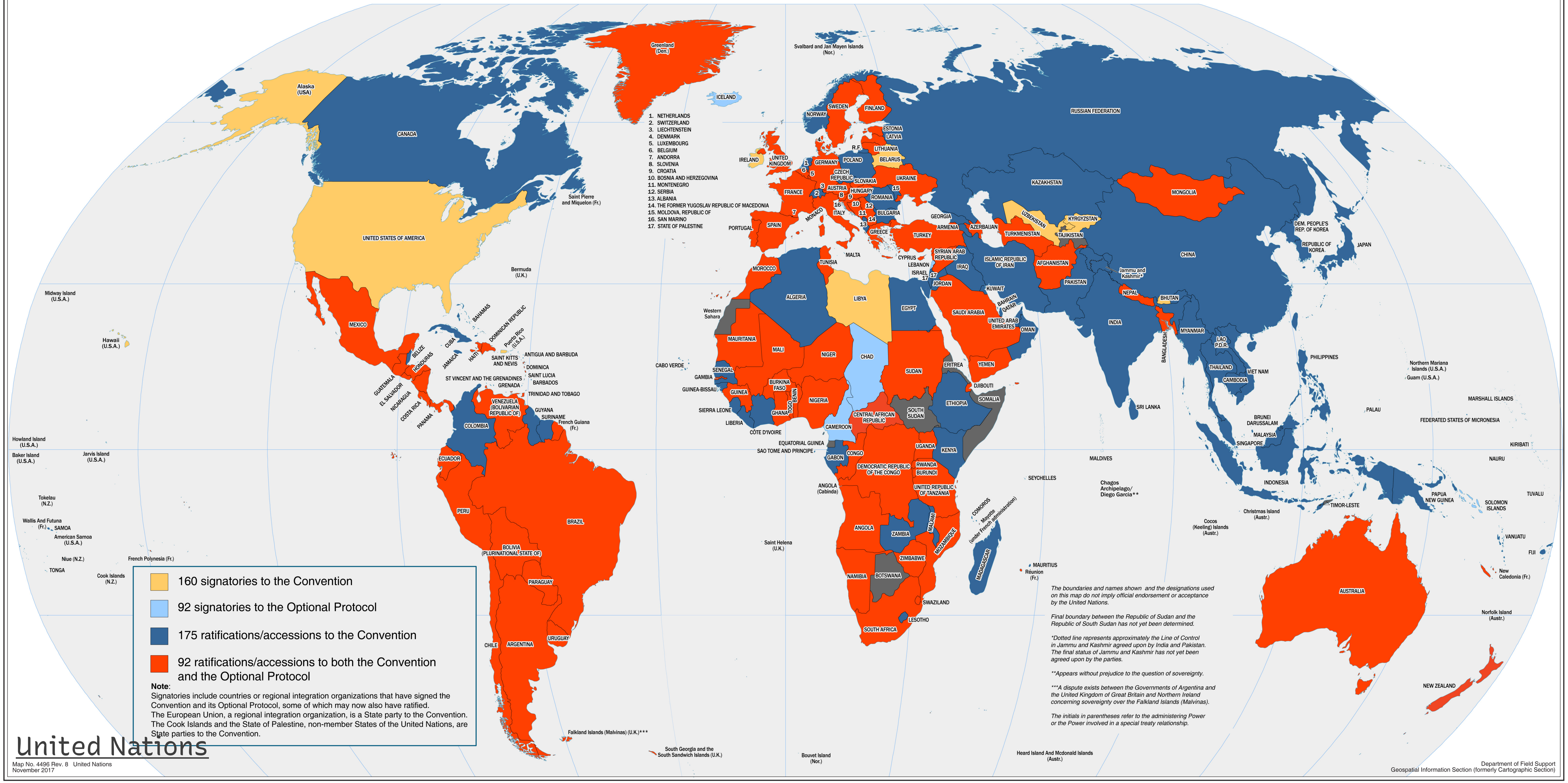
Convention on the Rights of Persons with Disabilities

UNITED NATIONS enable

CRPD and Optional Protocol Signatures and Ratifications

⬛ Not Signed 🟨 Signed Convention 🟦 Signed Convention & Protocol 🟦 Ratified Convention 🟥 Ratified Convention & Protocol

As of 19 September 2017



1. NETHERLANDS
2. SWITZERLAND
3. LIECHTENSTEIN
4. DENMARK
5. LUXEMBOURG
6. BELGIUM
7. ANDORRA
8. SLOVENIA
9. CROATIA
10. BOSNIA AND HERZEGOVINA
11. MONTENEGRO
12. SERBIA
13. ALBANIA
14. THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA
15. MOLDOVA, REPUBLIC OF
16. SAN MARINO
17. STATE OF PALESTINE

🟨	160 signatories to the Convention
🟦	92 signatories to the Optional Protocol
🟦	175 ratifications/accessions to the Convention
🟥	92 ratifications/accessions to both the Convention and the Optional Protocol

Note:
Signatories include countries or regional integration organizations that have signed the Convention and its Optional Protocol, some of which may now also have ratified.
The European Union, a regional integration organization, is a State party to the Convention.
The Cook Islands and the State of Palestine, non-member States of the United Nations, are State parties to the Convention.

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined.

**Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties.*

***Appears without prejudice to the question of sovereignty.*

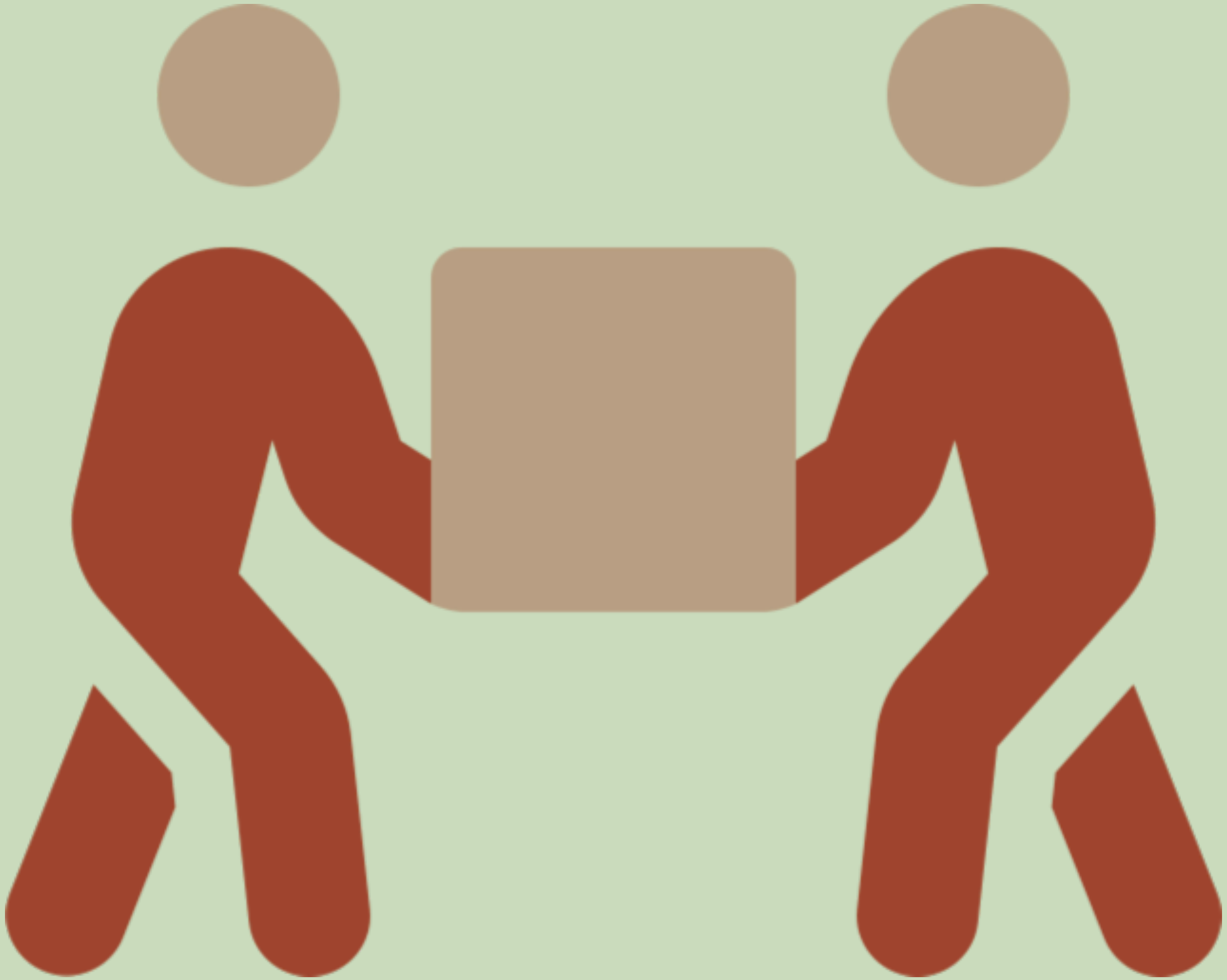
****A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).*

The initials in parentheses refer to the administering Power or the Power involved in a special treaty relationship.

United Nations

Map No. 4496 Rev. 8 United Nations
November 2017

Department of Field Support
Geospatial Information Section (formerly Cartographic Section)



Accessibility is too hard.

Accessibility is easy.

Accessibility
is easy to do wrong.

Why is Accessibility so easy to do wrong?

People are set up to fail.

We need to prioritize accessibility higher.

Guidance needs to be better.

Guidance needs to include everyone.

Design Principles

Design Principles make projects successful ✨

WCAG has design principles built in

🚨 Tangent 🚨

Isn’t it weird that we always look at the most granular guidance in WCAG? (The SCs.)

WCAG Design Principles

Your product must be

→ 1. Perceivable

→ 2. Operable

→ 3. Understandable

→ 4. Robust

1. Perceivable

- → **1.1 Text Alternative** – Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language.
- → **1.2 Time-Based Media (Alternatives)** – The same, but for audio & video.
- → **1.3 Adapatable** – Create content that can be presented in different ways (for example simpler layout) without losing information or structure.
- → **1.4 Distinguishable** – Make it easier for users to see and hear content including separating foreground from background.

2. Operable

- → **2.1 Keyboard Accessible** – Make all functionality available from a keyboard.
- → **2.2 Enough Time** – Provide users enough time to read and use content.
- → **2.3 Seizures and Physical Reactions** – Do not design content in a way that is known to cause seizures or physical reactions.
- → **2.4 Navigable** – Provide ways to help users navigate, find content, and determine where they are.
- → **2.5 Input Modalities** – Make it easier for users to operate functionality through various inputs beyond keyboard.

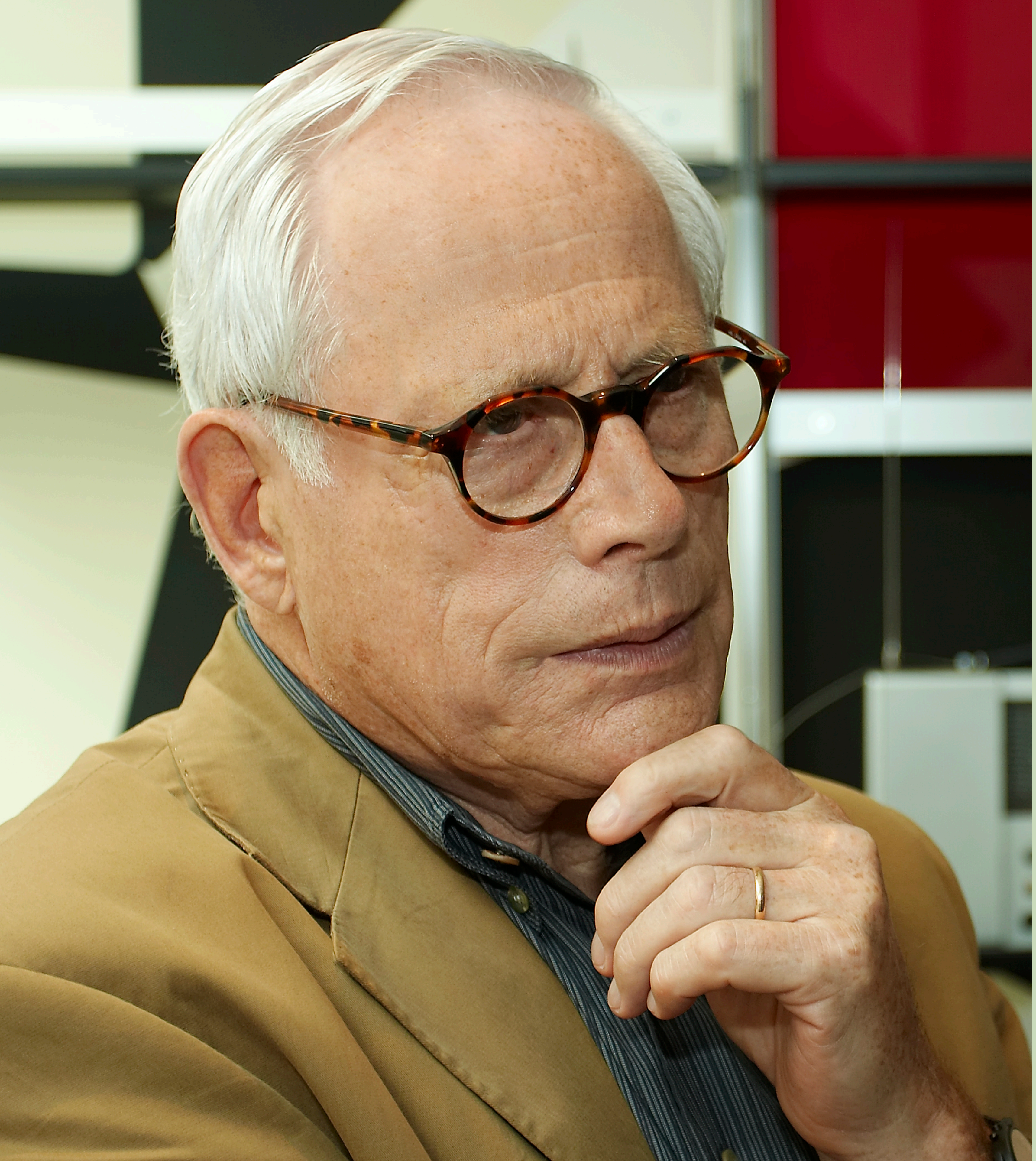
3. Understandable

- → **3.1 Readable** – Make text content readable and understandable.
- → **3.2 Predictable** – Make Web pages appear and operate in predictable ways.
- → **3.3 Input Assistance** – Help users avoid and correct mistakes.

4. Robust

- **4.1 Compatible** – Maximize compatibility with current and future user agents, including assistive technologies.

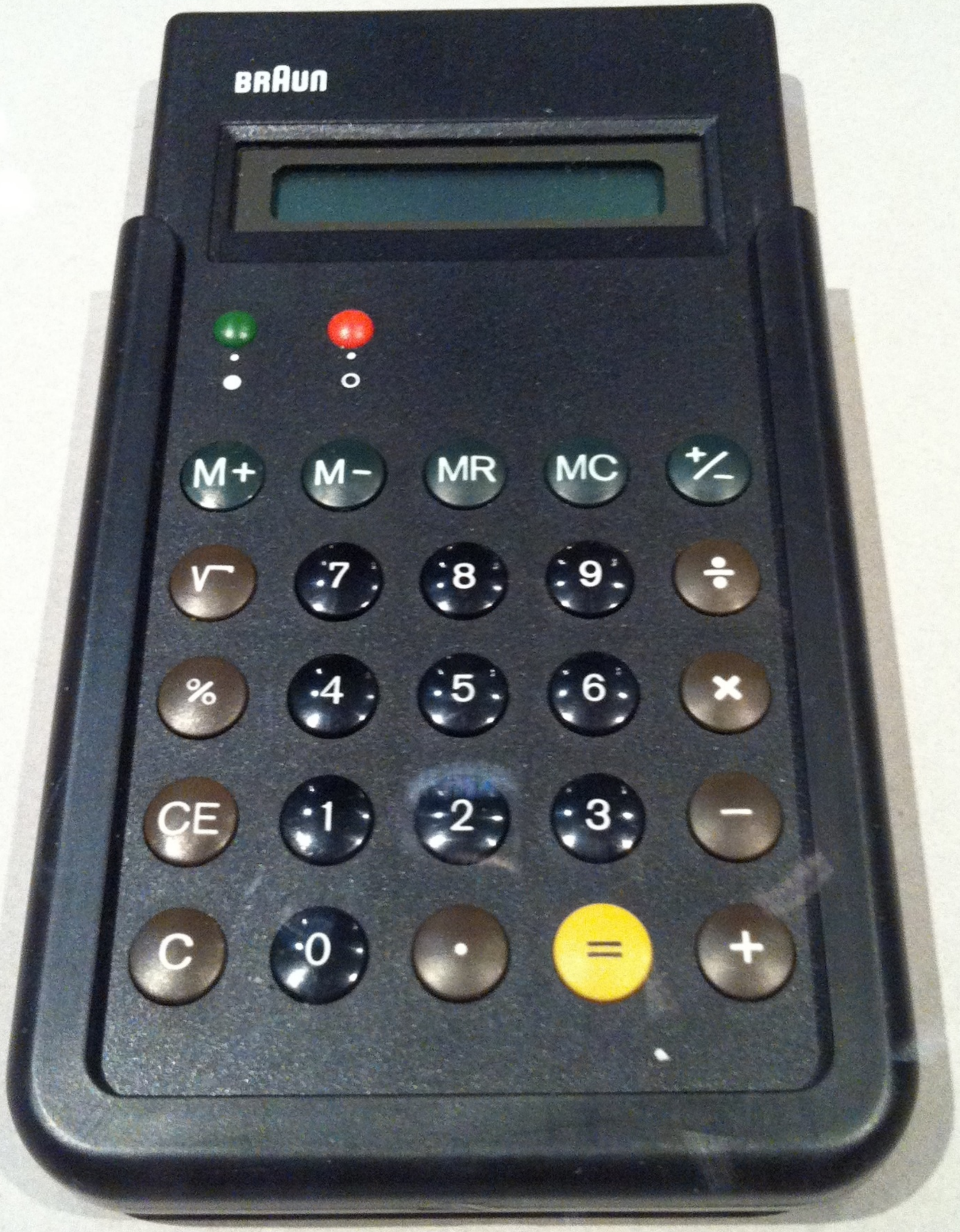
Other Design principles...



Dieter Rams

- → *20 May 1932
- → Wiesbaden, Germany
- → Designer
- → Braun Consumer Products
- → Watch the Documentation – free today only[1]

[1] https://www.ohyouprettythings.com/free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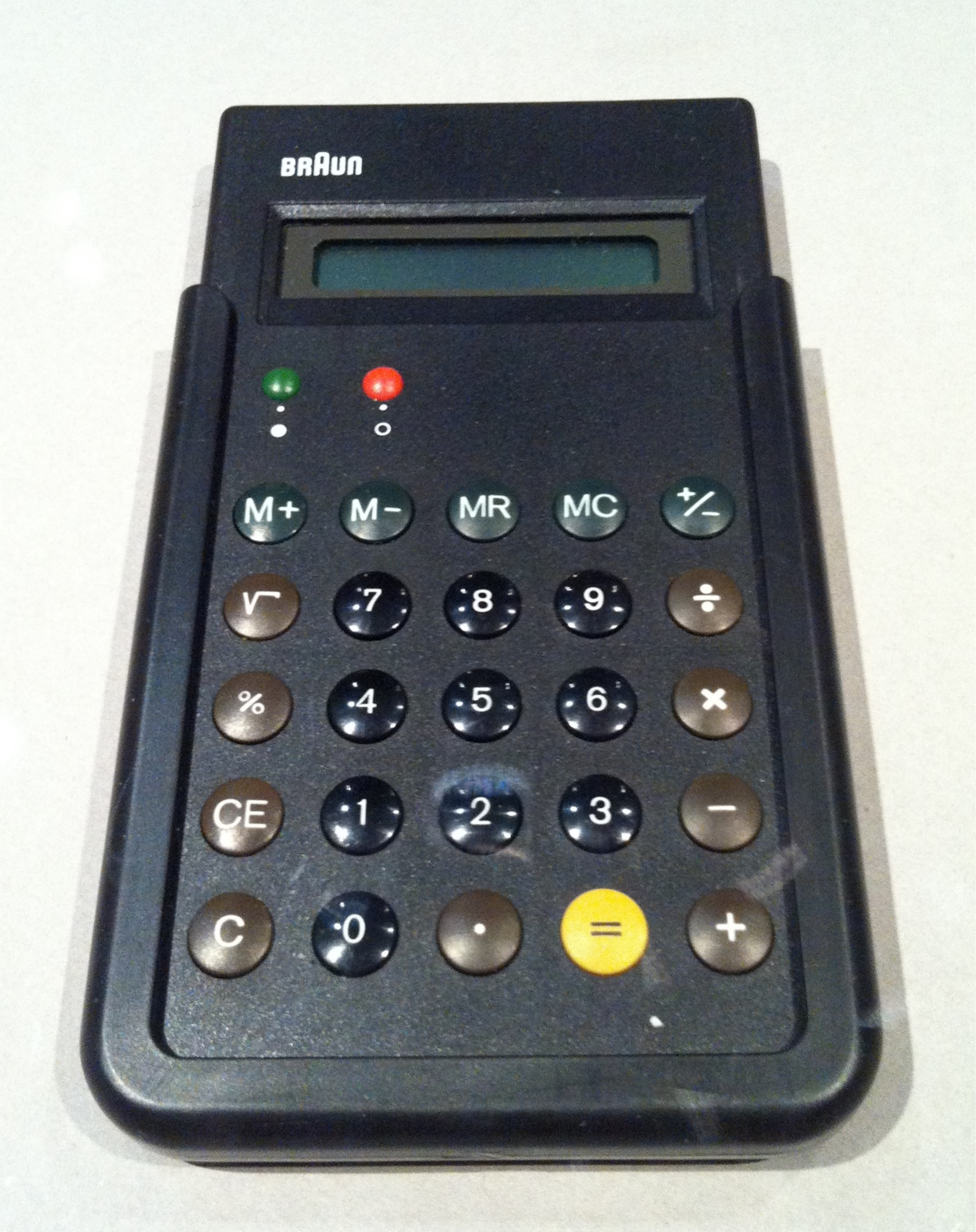
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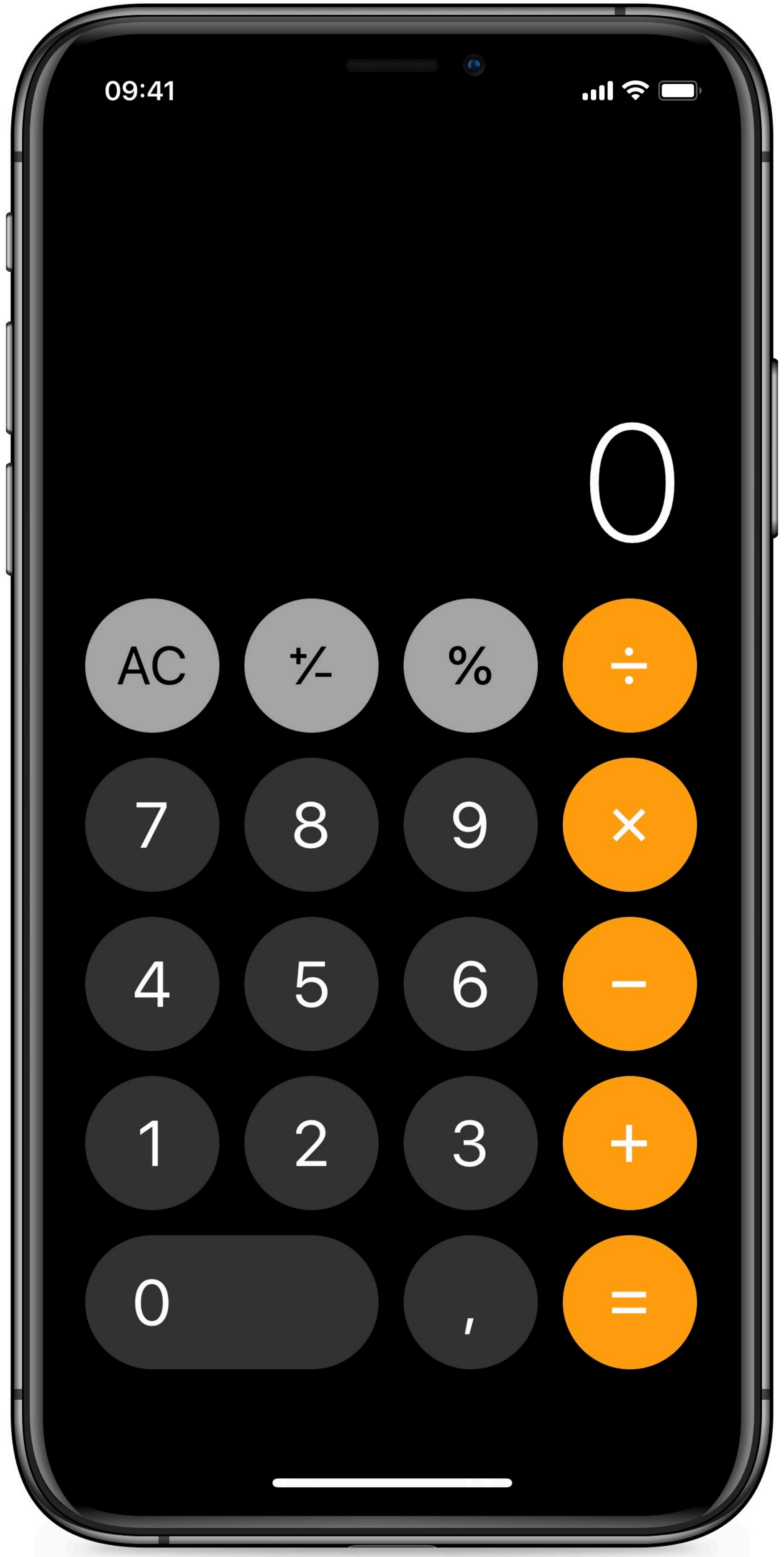
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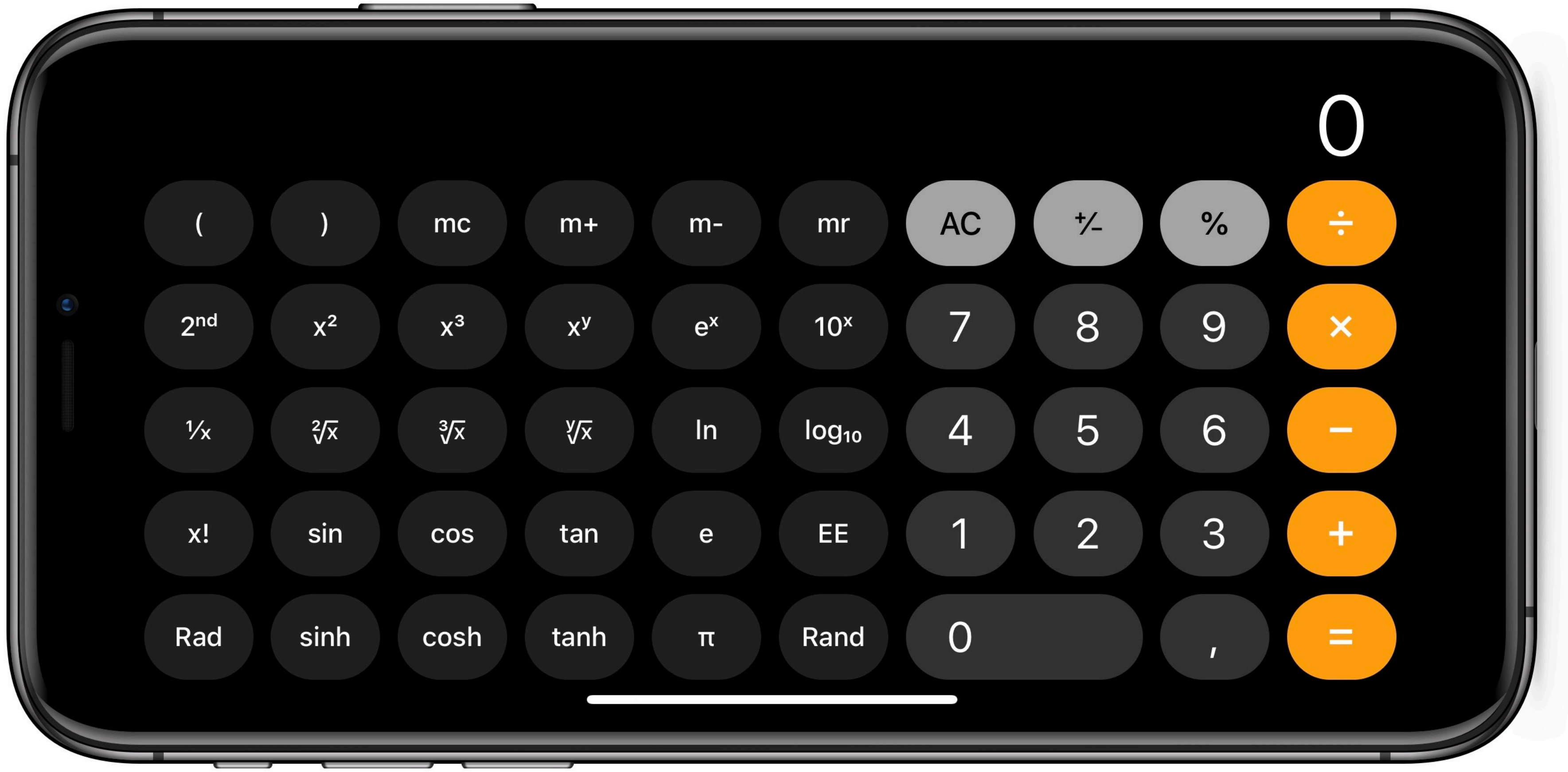
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Good Design…

1. is **innovative**
2. makes a product **useful**
3. is **aesthetic**
4. makes a product **understandable**
5. is **unobtrusive**
6. is **honest**
7. is **long-lasting**
8. is **thorough** down to the last detail
9. is **environmentally friendly**
10. is **minimal**

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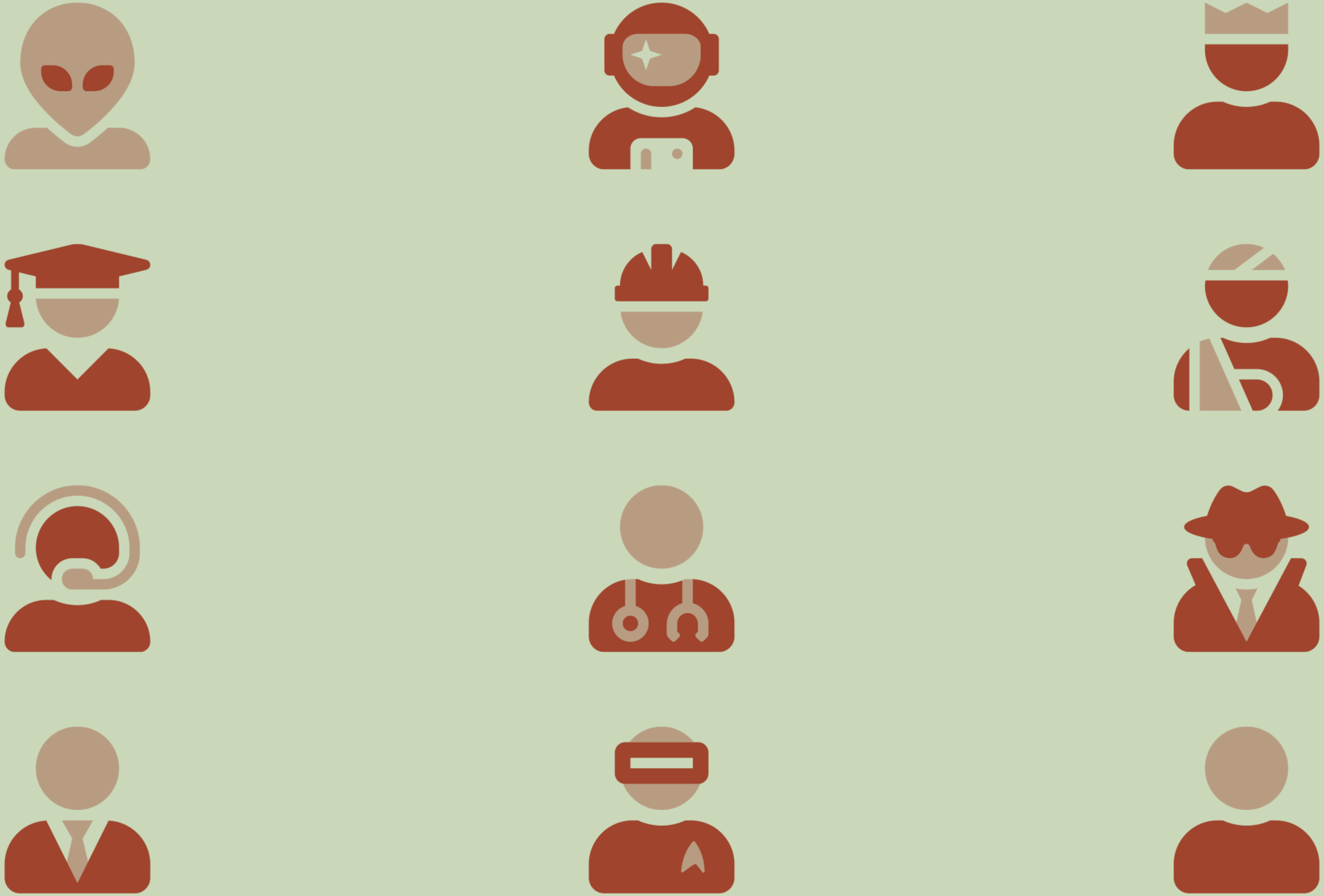
Good Design and WCAG...

1. is **innovative** – Accessibility can act as an incubator for innovation.
2. makes a product **useful** – 2. Operable
3. is **aesthetic**
4. makes a product **understandable** – 3. Understandable
5. is **unobtrusive** – 1. Perceivable/3. Understandable
6. is **honest** – 4. Robust
7. is **long-lasting** – 4. Robust
8. is **thorough** down to the last detail – 1. Perceivable
9. is **environmentally friendly** – 4. Robust
10. is **minimal** – 1. Perceivable

Good design centers on the user



Designers and Developers work for users

User =

Impairment ×

Proficiency ×

Accessibility Support

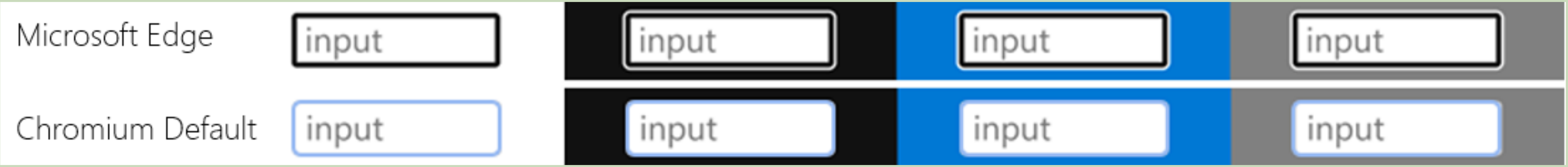
How do we make Accessibility easier to do right?

- Keep the principles in mind and work towards them
- Make sure you’re on the right track
- Use tools and integrations to set you up for success

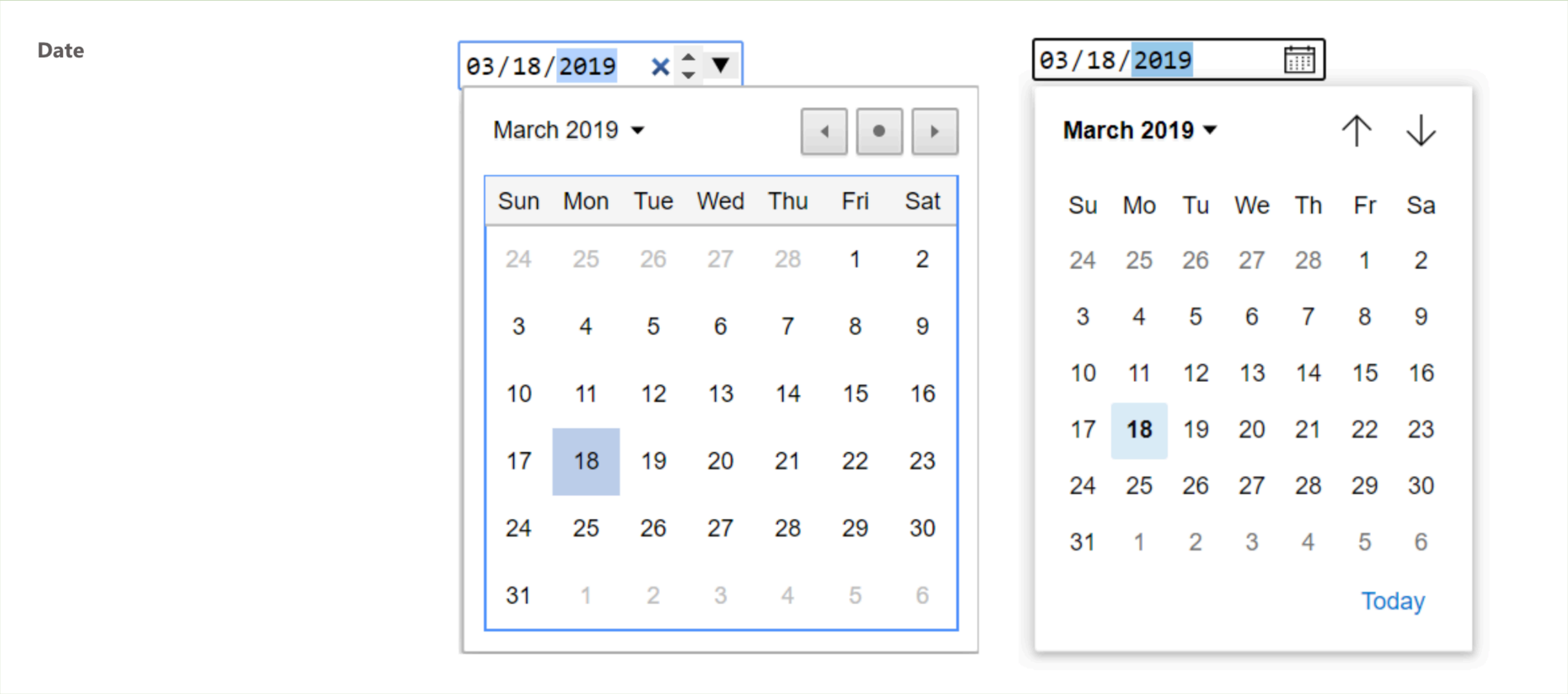
But we also need to do more as community to set us up for success.

- → Better education for designers and developers
- → Provide better, easier tools for accessibility
- → Guide and lead by designing products that are accessible and aesthetic
- → Make accessibility a welcoming space in which people want to participate
- → Provide more reliable implementation of technologies

For example: Improving form controls in Microsoft Edge and Chromium



Improving form controls in Microsoft Edge and Chromium - Microsoft Edge Blog



Date

03/18/2019

March 2019

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24	25	26	27	28	1	2
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31	1	2	3	4	5	6

03/18/2019

March 2019

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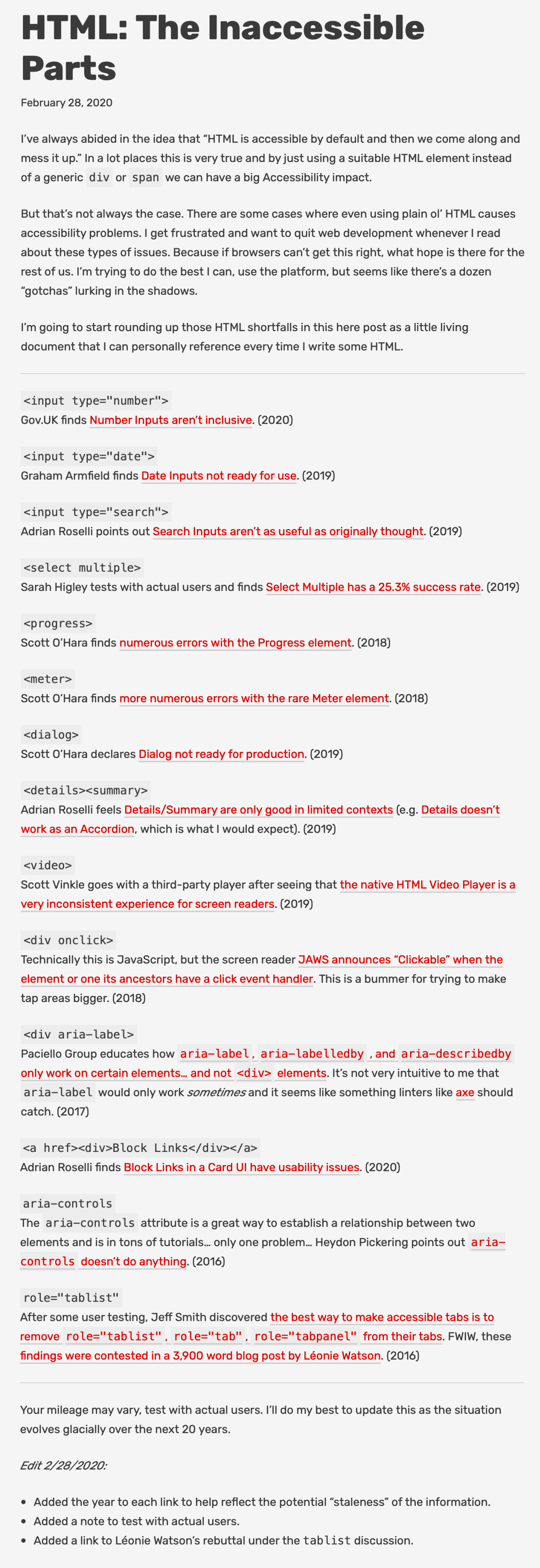
See also HTML: The Inaccessible Parts



HTML: The Inaccessible Parts

February 28, 2020

I've always abided in the idea that "HTML is accessible by default and then we come along and mess it up." In a lot places this is very true and by just using a suitable HTML element instead of a generic `div` or `span` we can have a big Accessibility impact.

But that's not always the case. There are some cases where even using plain ol' HTML causes accessibility problems. I get frustrated and want to quit web development whenever I read about these types of issues. Because if browsers can't get this right, what hope is there for the rest of us. I'm trying to do the best I can, use the platform, but seems like there's a dozen "gotchas" lurking in the shadows.

I'm going to start rounding up those HTML shortfalls in this here post as a little living document that I can personally reference every time I write some HTML.

`<input type="number">`
Gov.UK finds Number Inputs aren't inclusive. (2020)

`<input type="date">`
Graham Armfield finds Date Inputs not ready for use. (2019)

`<input type="search">`
Adrian Roselli points out Search Inputs aren't as useful as originally thought. (2019)

`<select multiple>`
Sarah Higley tests with actual users and finds Select Multiple has a 25.3% success rate. (2019)

`<progress>`
Scott O'Hara finds numerous errors with the Progress element. (2018)

`<meter>`
Scott O'Hara finds more numerous errors with the rare Meter element. (2018)

`<dialog>`
Scott O'Hara declares Dialog not ready for production. (2019)

`<details><summary>`
Adrian Roselli feels Details/Summary are only good in limited contexts (e.g. Details doesn't work as an Accordion, which is what I would expect). (2019)

`<video>`
Scott Vinkle goes with a third-party player after seeing that the native HTML Video Player is a very inconsistent experience for screen readers. (2019)

`<div onclick>`
Technically this is JavaScript, but the screen reader JAWS announces "Clickable" when the element or one its ancestors have a click event handler. This is a bummer for trying to make tap areas bigger. (2018)

`<div aria-label>`
Paciello Group educates how `aria-label`, `aria-labelledby` , and `aria-describedby` only work on certain elements… and not `<div>` elements. It's not very intuitive to me that `aria-label` would only work *sometimes* and it seems like something linters like axe should catch. (2017)

`<a href><div>Block Links</div></a>`
Adrian Roselli finds Block Links in a Card UI have usability issues. (2020)

`aria-controls`
The `aria-controls` attribute is a great way to establish a relationship between two elements and is in tons of tutorials… only one problem… Heydon Pickering points out `aria-controls` doesn't do anything. (2016)

`role="tablist"`
After some user testing, Jeff Smith discovered the best way to make accessible tabs is to remove `role="tablist"`, `role="tab"`, `role="tabpanel"` from their tabs. FWIW, these findings were contested in a 3,900 word blog post by Léonie Watson. (2016)

Your mileage may vary, test with actual users. I'll do my best to update this as the situation evolves glacially over the next 20 years.

Edit 2/28/2020:

- Added the year to each link to help reflect the potential "staleness" of the information.
- Added a note to test with actual users.
- Added a link to Léonie Watson's rebuttal under the `tablist` discussion.

Thank You!

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