

Design and Development Considerations for Diversity and Accessibility

Carrie Rector

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for different cultures

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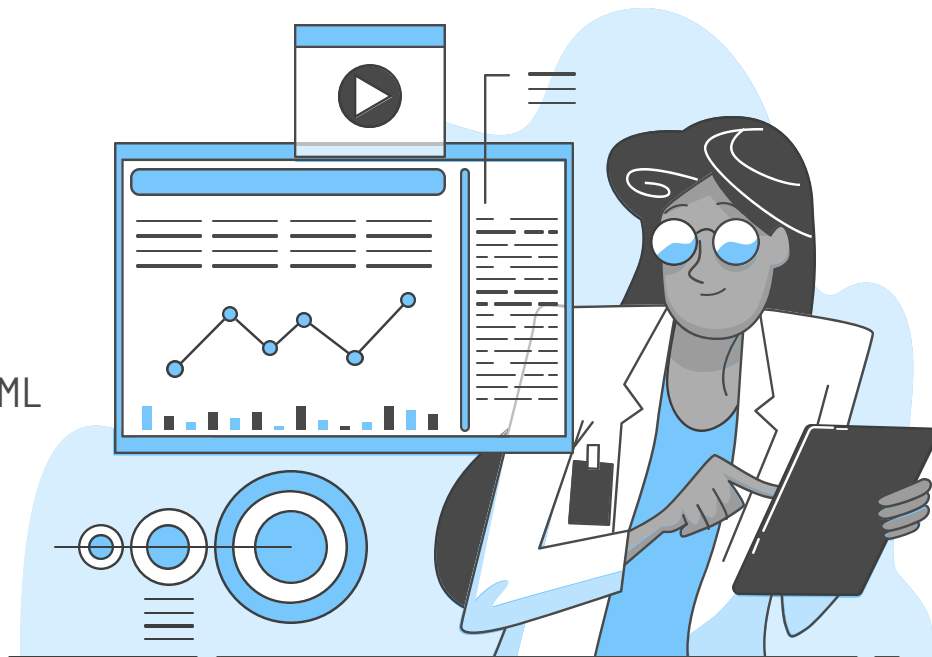
Semantic Elements

Learn accessibility tools
readily available through HTML

04

Accessibility Tools

Learn tools to fix your
accessibility issues





01 Diversity Considerations



Cultural Sensitivity and Awareness



Walmart Expansion into Germany

- Decade Later
- Couldn't find a buyer
- Paid a competitor to take over real estate and employee liabilities in 2006

Walmart Greeters

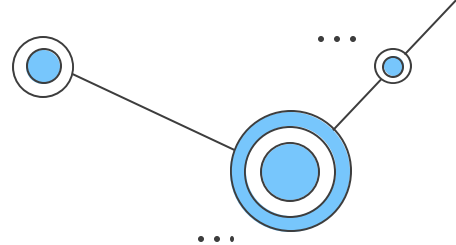
Smiling at Customers

Morning Chants

Bagged Groceries



Localized Content and Language



facebook

Email or Phone Password Log in
Forgotten account?

Facebook helps you connect and share with the people in your life.



Create an account

It's quick and easy.

First name Surname
Mobile number or email address
New password

Birthday

31 Oct 1994

Gender

Female Male Custom

By clicking Sign Up, you agree to our Terms. Learn how we collect, use and share your data in our Data Policy and how we use cookies and similar technology in our Cookie Policy. You may receive SMS notifications from us and can opt out at any time.

Sign Up

Create a Page for a celebrity, band or business.

English (UK) Polski Español Français (France) Italiano Lietuvių Română 中文(简体) Português (Brasil) Deutsch العربية

Sign Up Log In Messenger Facebook Lite Watch People Pages Page categories Places Games Locations Marketplace Groups Instagram Local Fundraisers Services About Create ad Create Page Developers Careers Privacy Cookies AdChoices Terms Help

افتح حسابًا في فيس بوك

يتميز بالسرعة والسهولة.

الاسم الأول اسم العائلة
رقم الهاتف المحمول أو البريد الإلكتروني
كلمة السر الجديدة

تاريخ الميلاد

31 أكتوبر 1994

الجنس

أنثى ذكر مخصص

بالنقر على "إنشاء حساب في فيس بوك"، فإنك توافق على الشروط وسيتم جمع بياناتك واستخدامها في سياسة الخصوصية الخاصة بنا. يمكنك تغيير إعدادات الخصوصية الخاصة بك في أي وقت. يمكنك إلغاء إشعارات الرسائل النصية (SMS) من فيس بوك، ويمكنك إلغاء إشعارات أي إشعارات في أي وقت.

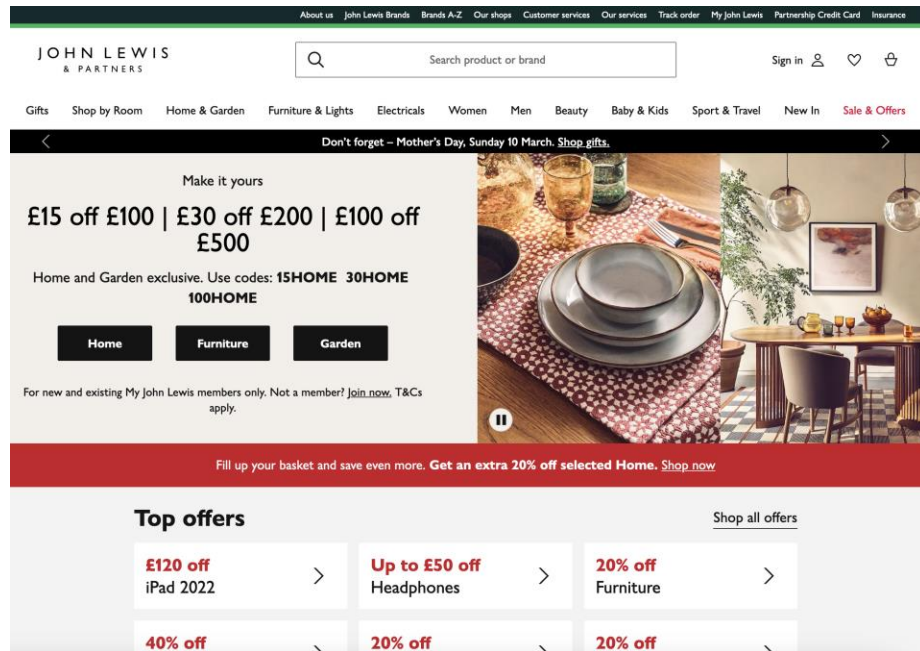
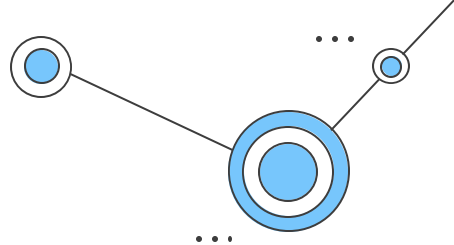
إنشاء حساب في فيس بوك

إنشاء صفحة لفرق موسيقية أو مشاهير أو أنشطة تجارية.

العربية English (UK) Polski Español Français (France) Italiano Lietuvių Română 中文(简体) Português (Brasil) Deutsch

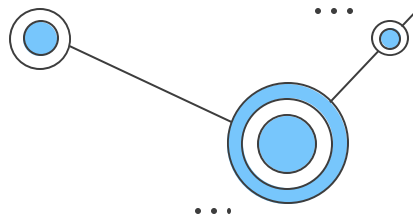
إنشاء حساب في فيس بوك تسجيل الدخول Messenger Facebook Lite Watch الأشخاص الصفحات فئات الصفحات الأماكن الألعاب الترويج Marketplace المجموعات محلية حملات جمع التبرعات الخدمات حول فيس بوك إنشاء إعلان إنشاء صفحة المطورون الخصوصية ملفات تعريف الارتباط اختيارات الإعلانات شروط Instagram مساعدة

Visual Aesthetics and Symbols





User Behaviors and Preferences

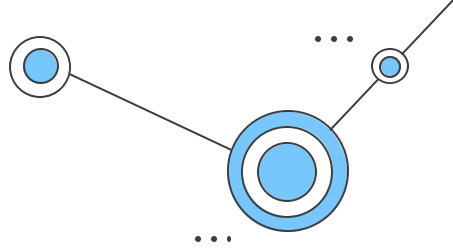


10 PC. FEAST	12 PC. FEAST	16 PC. FEAST
• 10 PCS. CHICKEN • 3 LARGE SIDES • 6 BISCUITS • CAKE	• 12 PCS. CHICKEN • 4 LARGE SIDES • 8 BISCUITS • CAKE	• 16 PCS. CHICKEN • 5 LARGE SIDES • 10 BISCUITS • CAKE





Typography



JP 郵便局
すべてを、お客さまのために。
企業情報 採用情報 ニュースリリース よくあるご質問・お問い合わせ **English**

送る ↓ 受け取る ↓ 買う ↓ 銀行・保険 ↓ お手続き ↓ 法人のお客さま ↓ **検索**

お知らせ > コロナウイルス（COVID-19）の影響による郵便物等の取扱いについて

重要なお知らせ > 「特定の社員しか取り扱えない、特別な高金利の貯金や保険等」はございません。（6/14）

かんばら商品等の契約に関する重要なお知らせ > 2021年4月からの情報回復に向けた業務運営について（3/24）
> ご利用いただいている金融商品のアフターフォローのお知らせ（10/28）
→ 一覧はこちら

2021年10月から
郵便物（手紙・はがき）・ゆうメールの
サービスを一部変更します。

1 土曜日配達休止
(2021年10月2日(土)～)

2 お届け日数の繰り下げ
(2021年10月以降段階的に実施)

ゆうパック、ゆうパケット、レターパックプラス、レターパックライト、
クリックポスト、速達、書留、簡易書留などは、引き続き土曜日、日曜日、
休日も配達し、お届け日数に変更はありません。

速達郵便料金の引き下げ
2021年10月1日(金)引受分からは、速達郵便の料金を1割程度引き下げます。
お急ぎの方は速達のご利用をご検討ください。

重量	9/30までの料金	10/1以降の料金
250gまで	290円	260円
1kgまで	390円	350円
4kgまで	660円	600円

JP JAPAN POST
[About Japan Post](#) | [Notification and Delivery route status](#) | [FAQs](#) | [日本語](#)
🔍 Please enter a keyword **Search**

Important notification
As of January 1, 2021, we will no longer accept postal items addressed to the USA with handwritten labels. [Learn more](#)

Track & Trace Service
Inquiry code number **Tracking**
[Click here for sequential number search](#)

Find Post Offices

Check rates and delivery days

Sending in Japan

- > [Standard Mail Services \(letter/postcard\)](#)
- > [Letter Pack](#)
- > [Yu-Pack \(parcel\)](#)
- > [Registered mail](#)
- > [Express mail](#)
- > [Delivery date-specified mail](#)
- > [Domestic delivery postage list](#)

Sending overseas

- > [Express Mail Service \(EMS\)](#)
- > [Letters](#)
- > [Postcards](#)
- > [International Parcel Post](#)
- > [Check rates and delivery days](#)
- > [Search for services other than above](#)

〒 郵便番号を調べる
都道府県 ↓ 市区町村名を入力 **🔍**
> 地図から探す

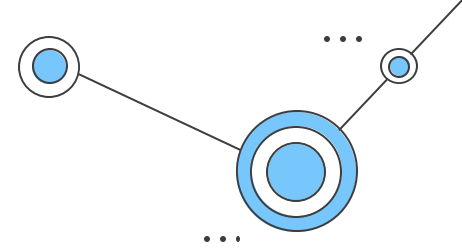
郵便局・ATMを探す
店舗名を入力 **🔍**
> 他の検索条件で探す
(日本地図から、駅名・路線名から)
> ゆうゆう窓口（営業時間外窓口）を探す

郵便・荷物の追跡
追跡問い合わせ番号を入力する **🔍**
> 追跡結果はこちら
> 運行情報ははこちら

配達のお申込み
配達依頼はこちら **➔**
> 本人指定受取郵便物等の配達等依頼はこちら

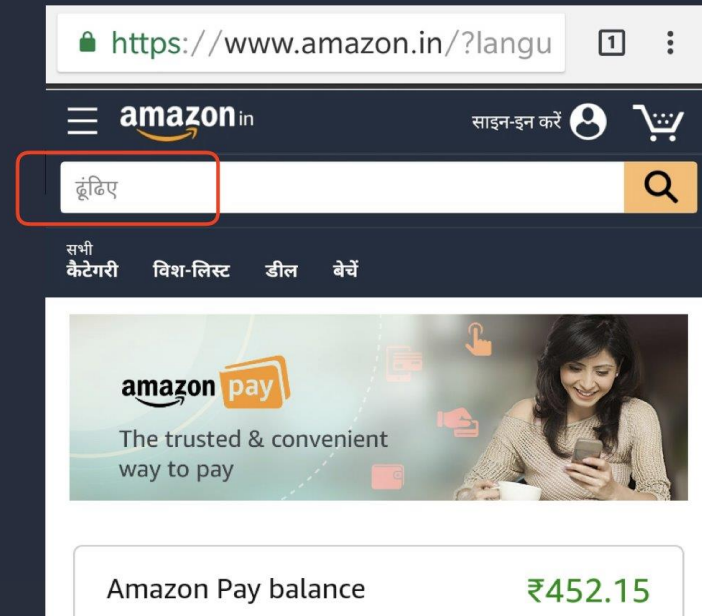
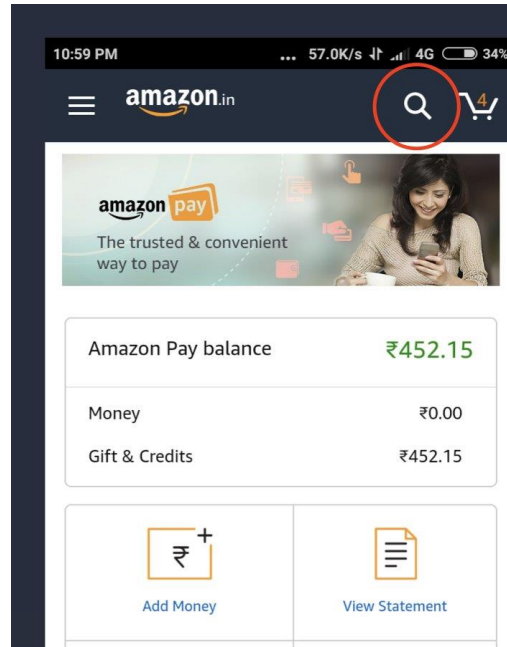
Navigation and Layout

amazon



Amazon India launch – late 2018

- Customers were not using the search functionality – Amazon's primary driver for revenue





Iconography and Imagery

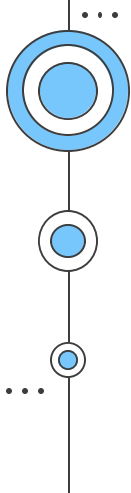
...

Popular European television ad shown in Japan:

The ad showed a Japanese man walking into the bathroom while his wife sat in the tub.

" Our consumers resented the breach of good manners and the overt chauvinism of the situation. "

- Mia Ishigura
Camay employee, Japan



Culture Colors

RED

Culture	Meaning
Western Countries	Love, Danger
India	Purity
China	Good Luck
Africa	Death/Mourning

COLORS *by Culture*

ORANGE

BROWN

YELLOW

GREEN

BLUE

PURPLE

RED

BLACK

WESTERN *Culture*



Harvest
Warmth
Affordable



Practicality
Comfort
Stability



Happiness
Joy
Caution



Luck
Jealousy
Greed



Depression
Trust
Calm



Royalty
Spirituality
Wealth



Love
Danger
Action



Intimidation
Death
Mourning

FAR EASTERN *Culture*



Happiness
Spirituality
Adaptability



Earth
Industrious
Mourning



Masculinity
Sacred
Royalty



Fertility
Hope
Life



Feminine
Healing
Relaxation



Wealth
Privilege
Spirituality



Prosperity
Good Fortune
Vitality



Health
Prosperity
Stability

INDIAN *Culture*



Sacred
Courage
Love



Mourning



Sacred
Auspicious



Hope
Harvest
Virtue



Sports
Strength



Sorrow
Comfort
Nobility



Beauty
Wealth
Power



Evil
Darkness
Negativity

MIDDLE EASTERN *Culture*



Mourning
Loss



Harmony
Earth
Comfort



Happiness
Prosperity
Mourning



Strength
Fertility
Hope



Mourning
Heaven
Spirituality



Wealth
Virtue
Royalty

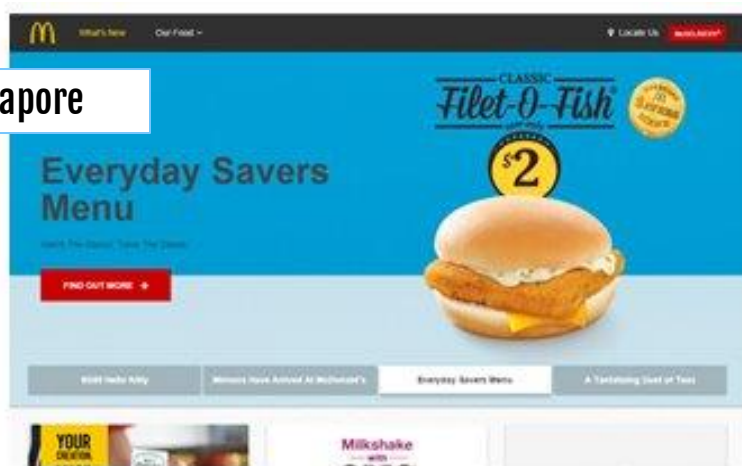


Danger
Caution
Evil



Mystery
Mourning
Rebirth

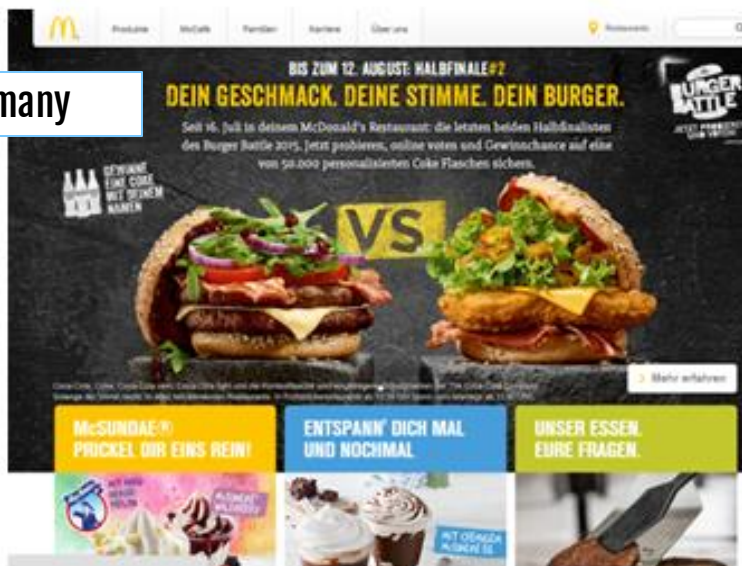
Singapore



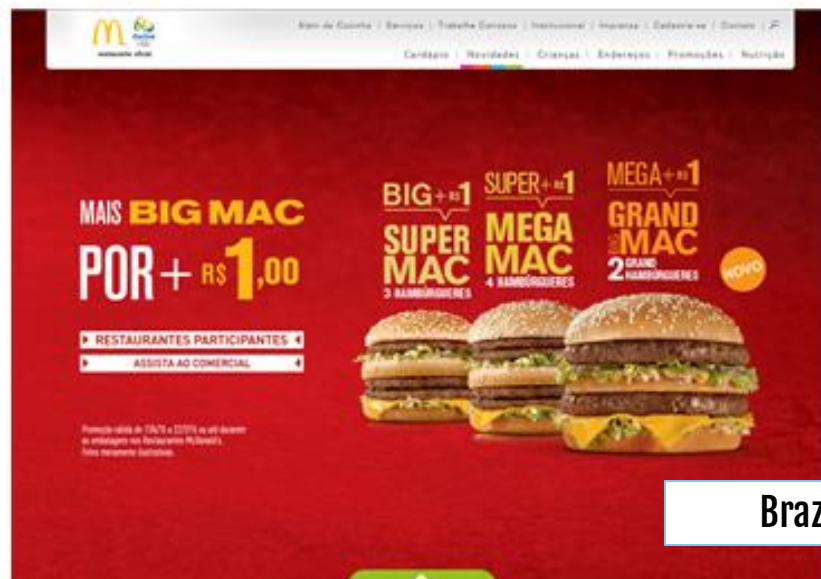
Russia



Germany



Brazil





Hofstede's Cultural Dimensions

International standard for recognizing cultural differences



0 ← ----- HOFSTEDE'S CULTURAL DIMENSIONS ----- → 100

LOW POWER
DISTANCE

PDI

HIGH POWER
DISTANCE

COLLECTIVISTIC

INV

INDIVIDUALISTIC

FEMININE

MAS

MASCULINE

LOW UNCERTAINTY
AVOIDANCE

UAI

HIGH UNCERTAINTY
AVOIDANCE

SHORT TERM
ORIENTATION

LTO

LONG TERM
ORIENTATION

RESTRAINT

IND

INDULGENCE

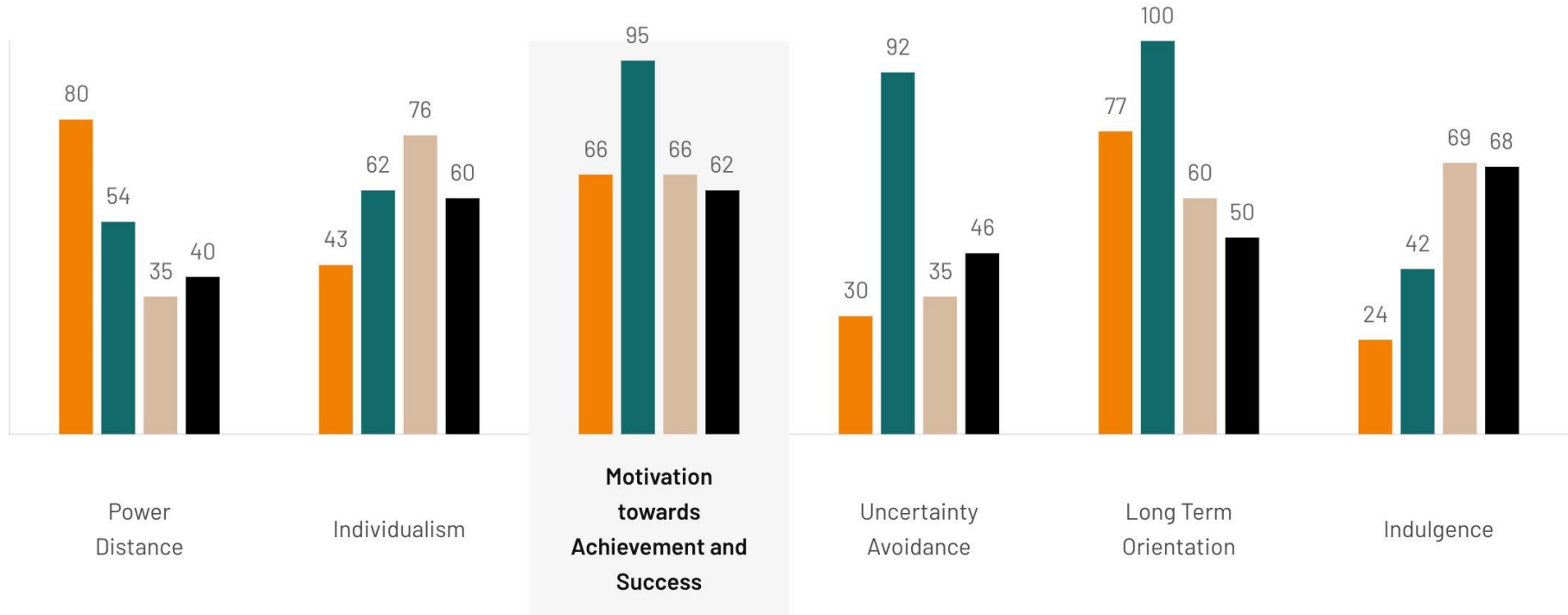
Interactive Country Comparison Tool

China ✕

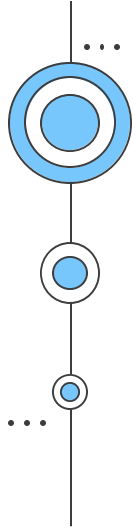
Japan ✕

United Kingdom ✕

United States ✕

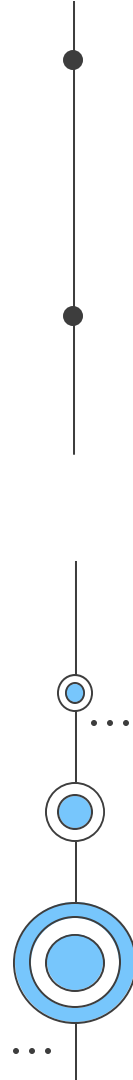






02

Web Accessibility





World-Wide Web Consortium

The World Wide Web Consortium (W3C) develops standards and guidelines to help everyone build a web based on the principles of accessibility, internationalization, privacy, and security.

WCAG

Website Content
Accessibility Guidelines

...

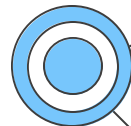
WAI-ARIA

Web Accessibility Initiative:
Accessible Rich Internet Applications



...

Web Content Accessibility Guidelines (WCAG) Principles



...

01

Perceivable

- Provide text alternatives
- Captions/alternatives for multimedia
- Present content in different ways
- See and hear content

02

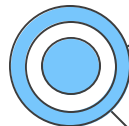
Operable

- Keyboard functionality
- Enough time to read and use content
- No use of content that could cause seizures
- Navigating and finding content
- Inputs other than keyboards



...

Web Content Accessibility Guidelines (WCAG) Principles



...

03

Understandable

- Make text readable and understandable
- Make content appear and operate in predictable ways
- Help users avoid and correct mistakes

04

Robust

- Maximize compatibility with current and future user tools



Understanding Web Content Accessibility Guidelines (WCAG)



Provides a single shared standard for web content accessibility that meets the needs of individuals, organizations, and governments internationally

A

Basic compliance

...

AA

Most organizations
strive for this level

...

AAA

Site accessible
to maximum
amount of users

...





WCAG Principles: Level A

01

Perceivable

- All non-text content has a text alternative
- Captions provided for audio and video content
- Information, structure, and relationships conveyed through presentation
- Content is not based on color, size, shape, position, sound or any other sensory characteristics

02

Operable

- All functionality is operable through a keyboard interface without specific timings
- Focus can move to and from a component using a keyboard interface
- No more than three flashes per second



WCAG Principles: Level A



03

Understandable

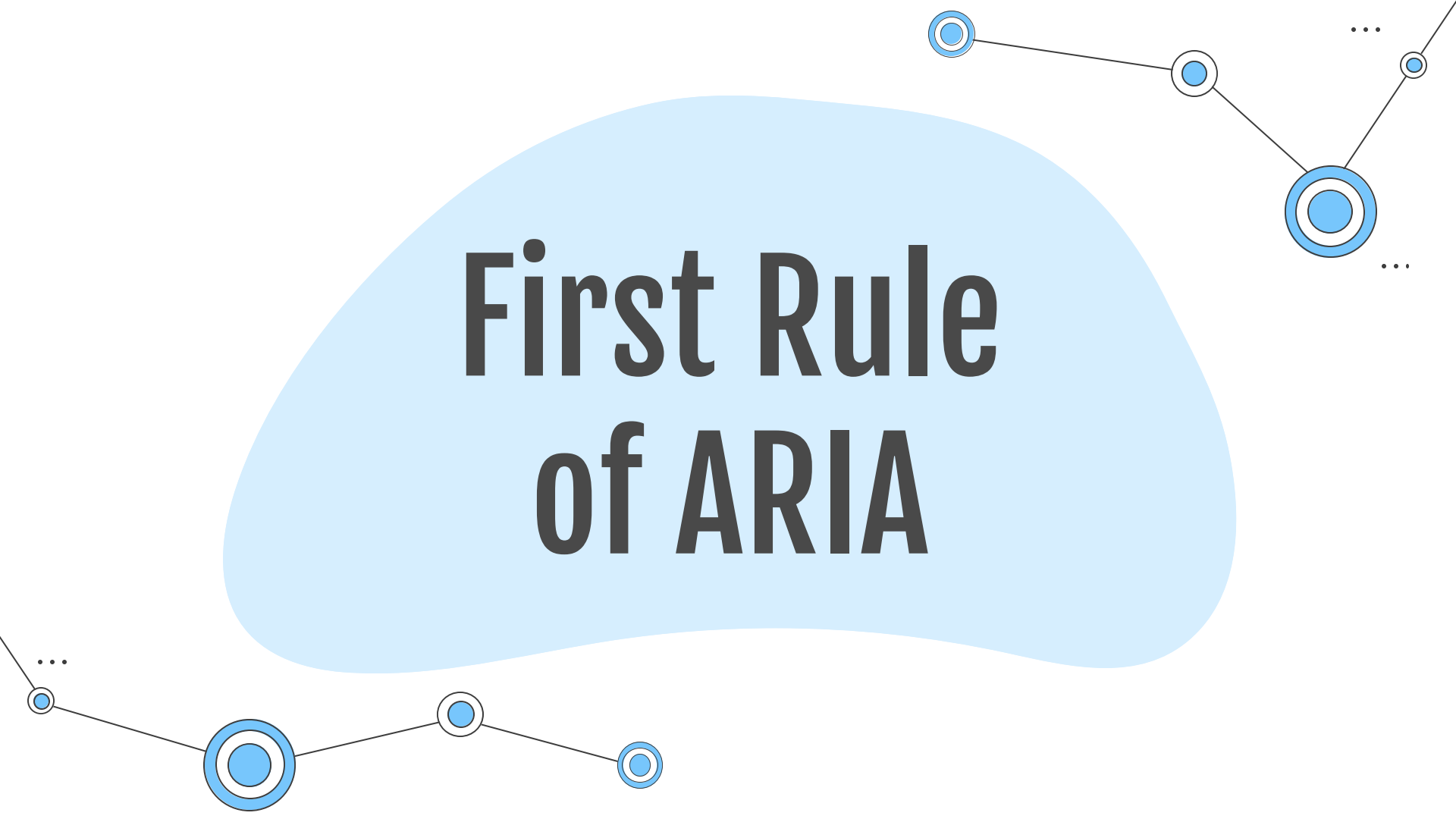
- Use the lang attribute
- Element focus does not change context

04

Robust

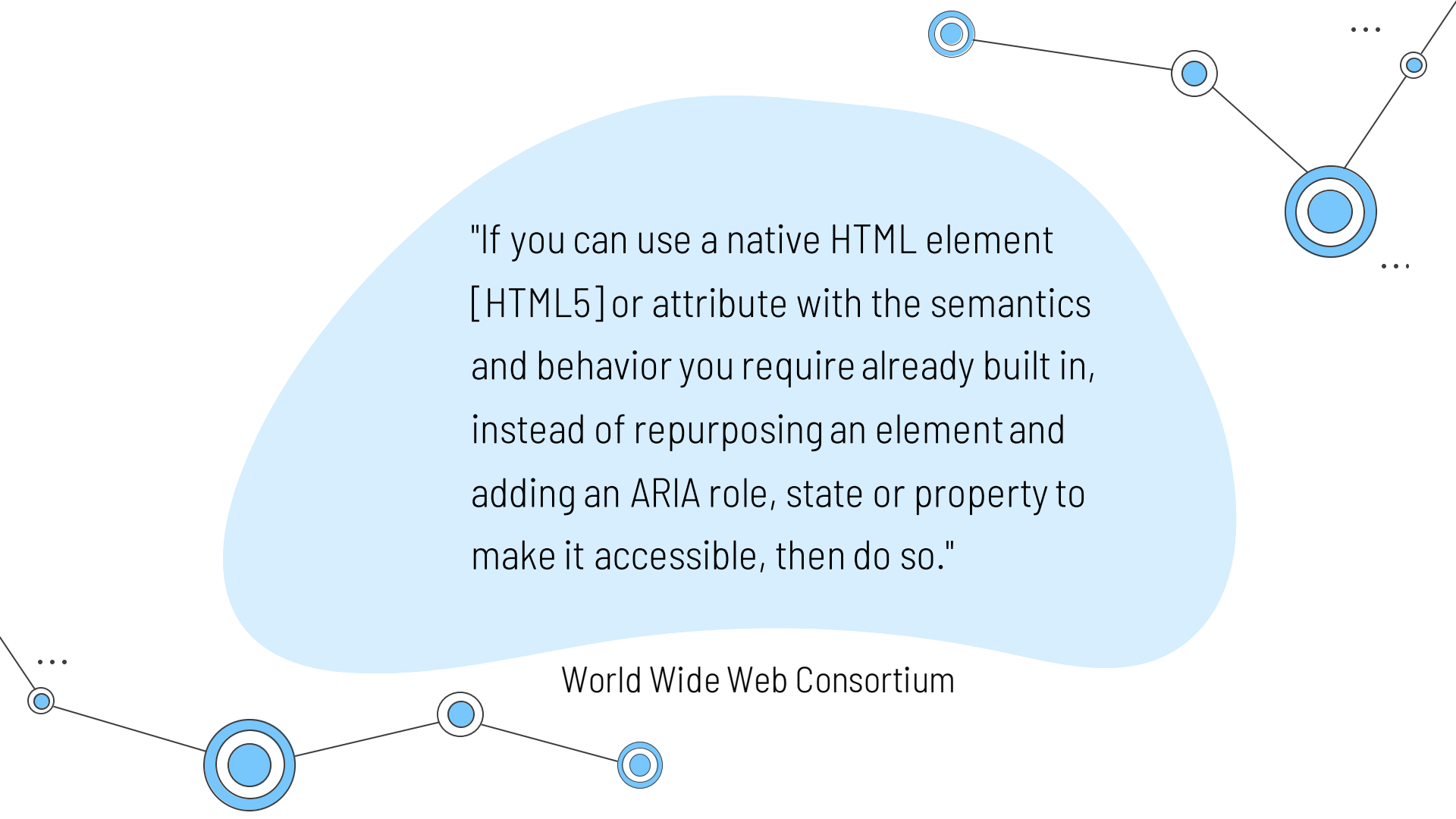
- Elements have start and end tags
- Proper nesting
- No duplicate attributes
- IDs are unique

First Rule of ARIA



A decorative network diagram consisting of several blue circular nodes connected by thin black lines. The nodes are arranged in a non-linear fashion, with some having concentric circles. Ellipses (...) are used to indicate that the network continues beyond the visible nodes.

**Don't Use
ARIA**



"If you can use a native HTML element [HTML5] or attribute with the semantics and behavior you require already built in, instead of repurposing an element and adding an ARIA role, state or property to make it accessible, then do so."

World Wide Web Consortium



No ARIA is better than bad ARIA

Home pages with ARIA present averaged **41%**
more detected errors than those without ARIA.

WebAIM 2023 Survey




ARIA Accessibility Features Support



WAI-ARIA Accessibility features - REC

Method of providing ways for people with disabilities to use dynamic web content and web applications.

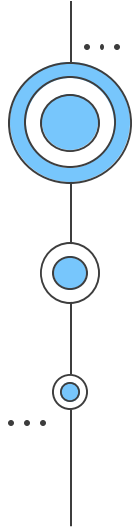
Usage % of all users ?
Global 0% + 98.56% = 98.56%

Current aligned Usage relative Date relative Filtered All 

Chrome	Edge *	Safari	Firefox	Opera	IE	Chrome for Android	Safari on iOS *	Samsung Internet	Opera Mini *	Opera Mobile *	UC Browser for Android	Android *	Firefox for Android	QQ Browser	B. Br
		3.1 - 3.2			6 - 7							2.1 - 4.3			
4 - 121	12 - 120	4 - 17.2	2 - 122	10 - 105	8 - 10		3.2 - 17.2	4 - 22		12 - 12.1		4.4 - 4.4.4			
122	121	17.3	123	106	11	121	17.3	23	all	73	15.5	121	122	13.1	13
123 - 125		17.4 - TP	124 - 126				17.4								

Notes Test on a real browser Known issues (0) Resources (7) Feedback

Support for ARIA is rather complex and currently is not fully supported in any browser. For detailed information on partial support see the [ARIA 1.0 Implementation Report](#)



03

Semantic Elements



Semantic HTML



Easy to Develop



Better on Mobile



Good for SEO



Accessibility



Legibility

Macrostructure vs Microstructure Semantic HTML

Macrostructure Semantic

HTML representing containers of a page, such as `<header>`, `<nav>`, `<main>`, `<article>`, `<section>` among other structural elements

Microstructure Semantic

Elements that fall within containers or macrostructure semantic HTML elements. Some of these elements include `<p>`, ``, and ``

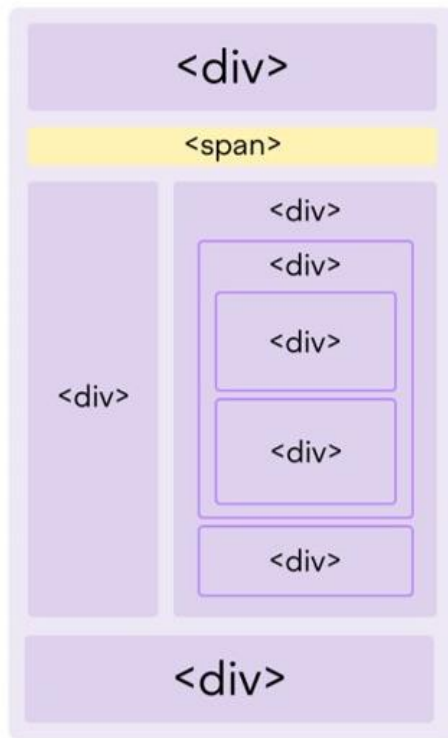
Macrostructure Semantic HTML Elements

Element	Use
article	Independent, self-contained content that can be independently distributed or reusable. Ex. Forum or blog posts, user comments, newspaper articles
aside	Content indirectly related to the document's main content. Ex. Sidebars or call-out boxes
footer	Bottom content for a document or section. Ex. Copyright, contact, sitemap, authorship information
header	Container for introductory content or a set of navigation links. Ex. Top content bar on most websites
main	Dominant content that is directly related to the central topic of a document.
nav	Set of navigation links. Ex. Main navigation for site.
section	Thematic grouping of content. Ex. Chapters, introduction, news items, contact information

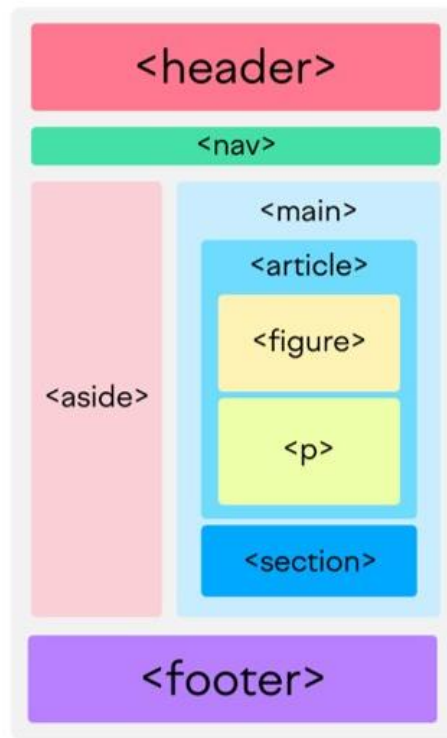
Macrostructure HTML

```
<div id="header">  
<div id="nav">  
<div id="main">  
  <div class="section">  
    <div id="footer">  
      <span id="quote">
```

Non-Semantic HTML



Semantic HTML



ARIA Landmark Roles

Landmark Role	HTML Semantic Element Equivalent
banner	header
complimentary	aside
contentinfo	footer
navigation	nav
main	main
section	section
form	form
region	content should make sense if separated from the main content of the document. This should be accompanied by aria-labelledby
search	search ...

```
<div id="header" role="banner"></div>
```

Microstructure HTML

Accessible Names and Content

- Convey the purpose or intent of the element
- Distinguish the element from other elements on the page

```

```

```

```



Microstructure HTML

Accessible Names and Content

- Convey the purpose or intent of the element
- Distinguish the element from other elements on the page

Name:

```
<label> Name:
```

```
  <input type="text" name="fullName"/>
```

```
</label>
```

```
<label for="fullName"> Name: </label>
```

```
  <input type="text" id="fullName" name="fullName"/>
```

Microstructure HTML

Labeling Tables and Images

```
<table>
  <caption>Special opening hours</caption>
  <tr><td>30 May</td><td>Closed</td></tr>
  <tr><td>6 June</td><td>11:00-16:00</td></tr>
</table>
```

```
<figure>
  
  <figcaption>Jesus entering the desert as imagined by William Hole,
    1908</figcaption>
</figure>
```

Microstructure HTML

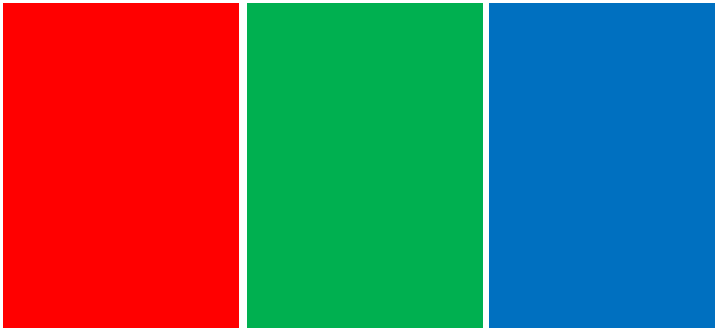
Content is not based on color, size, shape, position, sound or any other sensory characteristics

Each Track is indicated by color:

Design Track

Development Track

Usability Track



Design Track

Category: Design

aria-label

Attribute that defines a string value that labels an interactive element

- Button containing an SVG image
- Buttons that look like hamburger and kebab icons

```
<button type="button" aria-label="Close">X</button>
```



```
<button aria-label="menu" class="burger"></button>
```

aria-labelledby

Attribute that identifies the element (or elements) that labels the element it is applied to.

Established an association between an element and the text that provides the accessible name

```
<h1 id='id1'>Famous People</h1>  
  <label id='id2'> Andy Williams<input type='radio' aria-labelledby='id1 id2' />  
</label>
```

```
<span role="checkbox" aria-checked="false" tabindex="0" aria-labelledby="tac">  
</span>  
<span id="tac">I agree to the Terms and Conditions.</span>
```




Common Semantic Errors



01

`<div>` and ``

Overuse of these
non-semantic elements

02

Misusing WAI-ARIA markup

Can prevent users from understanding
content and/or from regaining control
of their browser

03

Use HTML for Layout

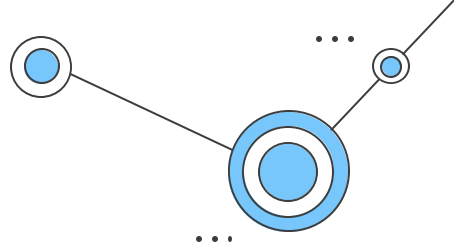
Using table elements
for web design layouts

04

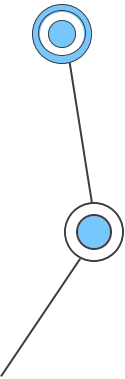
Generic class and id values

Unclear purpose and function
of interactive elements

ARIA Questions to Ask



1. Can I use semantic HTML instead of ARIA?
2. Do I understand the risks of poor ARIA implementation?
3. Am prepared to test my ARIA implementation?
4. Does my site have other accessibility barriers?





04

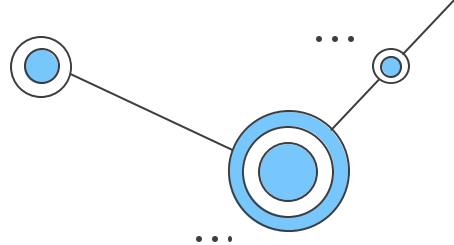
Accessibility Tools



Design and Develop for Diversity and Accessibility

1. Localization
 - Imagery, color psychology, cultural nuances
2. Language
 - Typography, directionality, linguistic differences
3. Content density
4. Technology
5. Consult with Experts
 - Local experts, translators, user testing participants with varied backgrounds

Accessibility Tools



Auditing Tools

- [Wave](#) – online accessibility testing that returns annotated view with problems highlighted
 - Chrome, Firefox, and Edge browser extensions

Automation Tool

- [AXe](#) Tool – has browser extensions for both [Chrome](#) and [Firefox](#)
- [Silktide](#)
- [Total Validator](#)
- [Lighthouse](#) Chrome DevTool

Simulated User Experience

- [Silktide](#)
- [Luma](#)
- [Monsido](#) (recently acquired by Acquia)

[W3C Accessibility Evaluation Tools List](#)



Screen Readers

Free Tools

- [NVDA](#) (Windows)
- [ChromeVox](#) (Chrome, Windows, macOS)
- [Orca](#) (Linux)

Operating System Built-In Tools

- [VoiceOver](#) (macOS and iOS)
- [ChromeVox](#) (Chromebooks)
- [TalkBack](#) (Android)

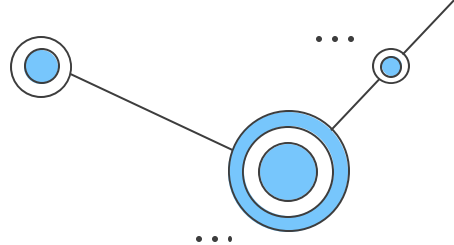


NV Access

Empowering lives through
non-visual access to technology



Other Helpful Tools



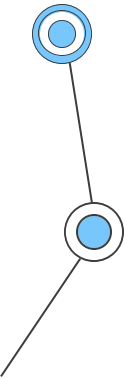
Color Contrast Tools

- Accessible Color Combinations
 - [Accessible Color Palette Builder](#)
 - [Contrast Grid](#)
 - [Contrast Checker](#)

Text to Background Color Contrast Ratios	
Small Text	4.5:1
Large Text	3:1

Color Blindness

- [Color Blindness Simulator](#)
- [Colorblind Web Page Filter](#)





Thanks!

Do you have any questions?

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Resources

<https://www.toptal.com/designers/ux/guide-to-cross-cultural-design#:~:text=To%20be%20effective%2C%20designers%20need,values%2C%20customs%2C%20and%20taboos.>
<https://www.toptal.com/designers/ux/color-psychology>
<https://www.trootech.com/blog/master-ui-ux-with-mcdonalds-cross-cultural-web-design>
<https://conversion-uplift.co.uk/post/cultural-factors-in-web-design/>
<https://developer.mozilla.org/en-US/docs/Web/Accessibility/ARIA>
<https://www.w3.org>
<https://accessibility.digital.gov/visual-design/color-and-contrast/>
<https://bootcamp.uxdesign.cc/exploring-cultural-considerations-in-global-ui-ux-design-dcf1638d10d4#:~:text=Language%20plays%20a%20pivotal%20role,that%20the%20message%20resonates%20accurately.>
<https://www.brandingmarketingagency.com/blogs/how-to-create-culturally-sensitive-web-design/>
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<https://www.deseret.com/2011/4/29/20371882/international-business-some-international-ads-are-perceived-as-sexist-due-to-different-cultural-norm/>
<https://medium.com/demagsign/a-guide-to-cross-cultural-design-by-senongo-apkem-368c90de1b76>