

# Accessibility, Universal Design, & Inclusive Design



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# Section 508 / Accessibility (WCAG, WAI-ARIA)/ Inclusive Design

**Section 508** Compliance is shorthand for a law that requires federal government websites to be safe and accessible for people with disabilities. This law covers a range of issues related to assisting people with different kinds of disabilities. It requires all Federal electronic content to be accessible.

**WCAG** is simply a set of formal guidelines on how to develop accessible web content. These standards represent a higher level of accessibility than 508 standards, although they are identical or very similar. WCAG focuses primarily on HTML accessibility.

**WAI-ARIA** (Web Accessibility Initiative – Accessible Rich Internet Applications) roles provide semantic meaning to content, allowing screen readers and other tools to present and support interaction with object in a way that is consistent with user expectations of that type of object. ARIA roles can be used to describe elements that don't natively exist in HTML or exist but don't yet have full browser support.

**Inclusive design:** Still exploring and learning.

- 1- ACCESSIBILITY**
- 2- UNIVERSAL DESIGN**
- 3- INCLUSIVE DESIGN**

## **Disability definition** –World Health Organization

### **1980**

Disability as personal attribute “In the context of health experience, a disability is any restriction or lack of ability (resulting from an impairment) to perform an activity in the manner or within the range considered normal for a human being.”

### **TODAY**

Disability as context dependent “Disability is not just a health problem. It is a complex phenomenon, reflecting the interaction between features of a person’s body and features of the society in which he or she lives.

# Reframing Disability

Disability is a mismatch between the needs of an individual and the service, product or environment offered (MICROSOFT)

# What is accessibility?

Accessibility is the practice of making digital products and services usable by as many people as possible not just focusing on people with disabilities. When you add to the mix diversity we have inclusive products and services.

Accessibility is probably the most understood and used among us.

Accessibility awareness from Cornell for the last 3 years. Multiple workshops and talks.

In May **1999**, the Web Content Accessibility Guidelines (**WCAG**) was created by World Wide Web Consortium (**W3C**), it is a set of guideline and documents explaining how to make content accessible to people with disabilities.

WCAG 2.0 was published on 11 December 2008.

**WCAG 2.1 was published on 5 June 2018 (A, AA, AAA)**

WCAG 2.2 is scheduled to be published in 2021

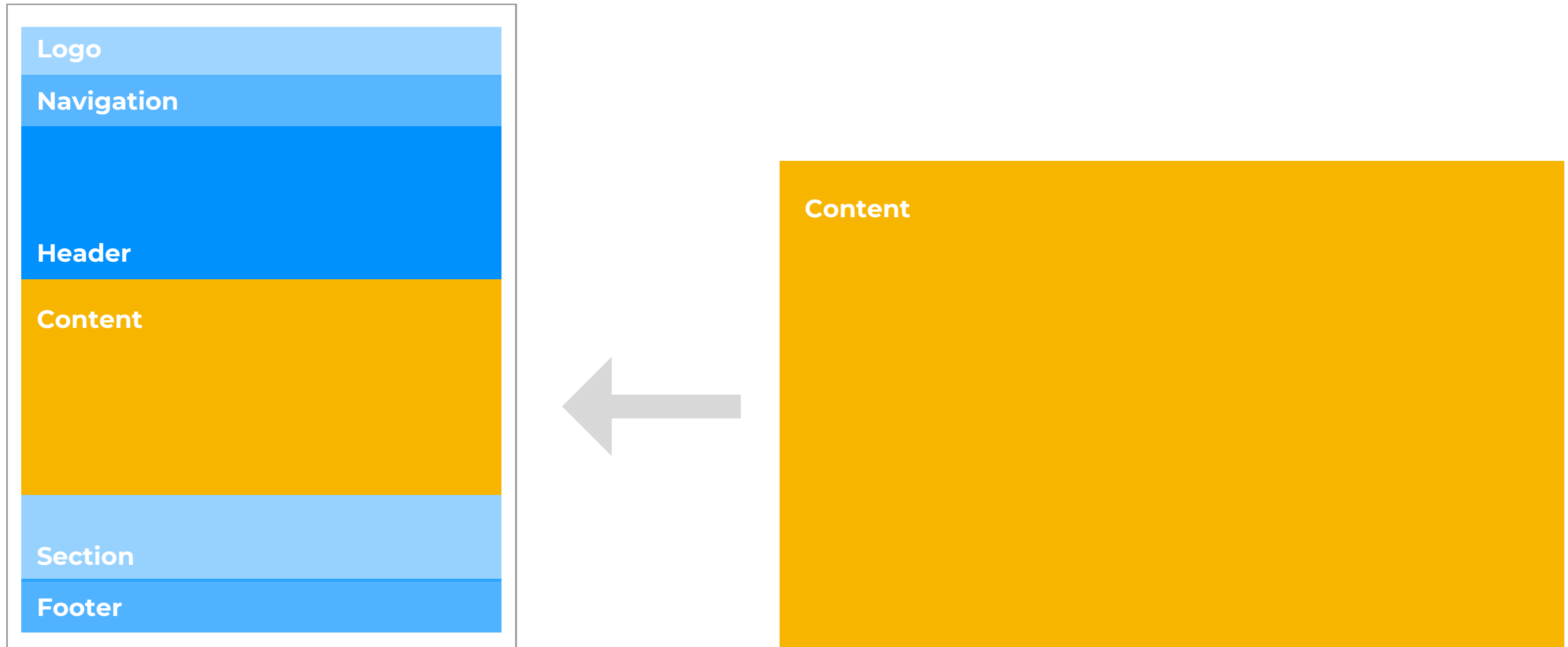
WCAG 3.0 **WORKING DRAFT**



Accessibility is an attribute, while inclusive design is a method or framework

Ideally, accessibility and inclusive design work together to make experiences that are not only compliant with standards, but truly **usable and open to all**.

# Accessible sites(code) VS accessible content.



## UNIVERSAL DESIGN (“One size fits all”)

Universal design was first defined in **1997** by “a working group of architects, product designers, engineers and environmental design researchers” at The Center for **Universal Design at North Carolina State University**

The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

Universal design considers a diverse set of characteristics **beyond disability, including age, gender, race and ethnicity, native language, etc.**, but only yields a single solution that can accommodate as many people as possible, leading some to be left out.

**Universal Design principles and guidelines.**



# Universal Design principles and applications in UX design

There are seven principles, and they all include guidelines with actionable approaches for Universal Design.

We will look at design examples for each principle so we can apply these to our projects.

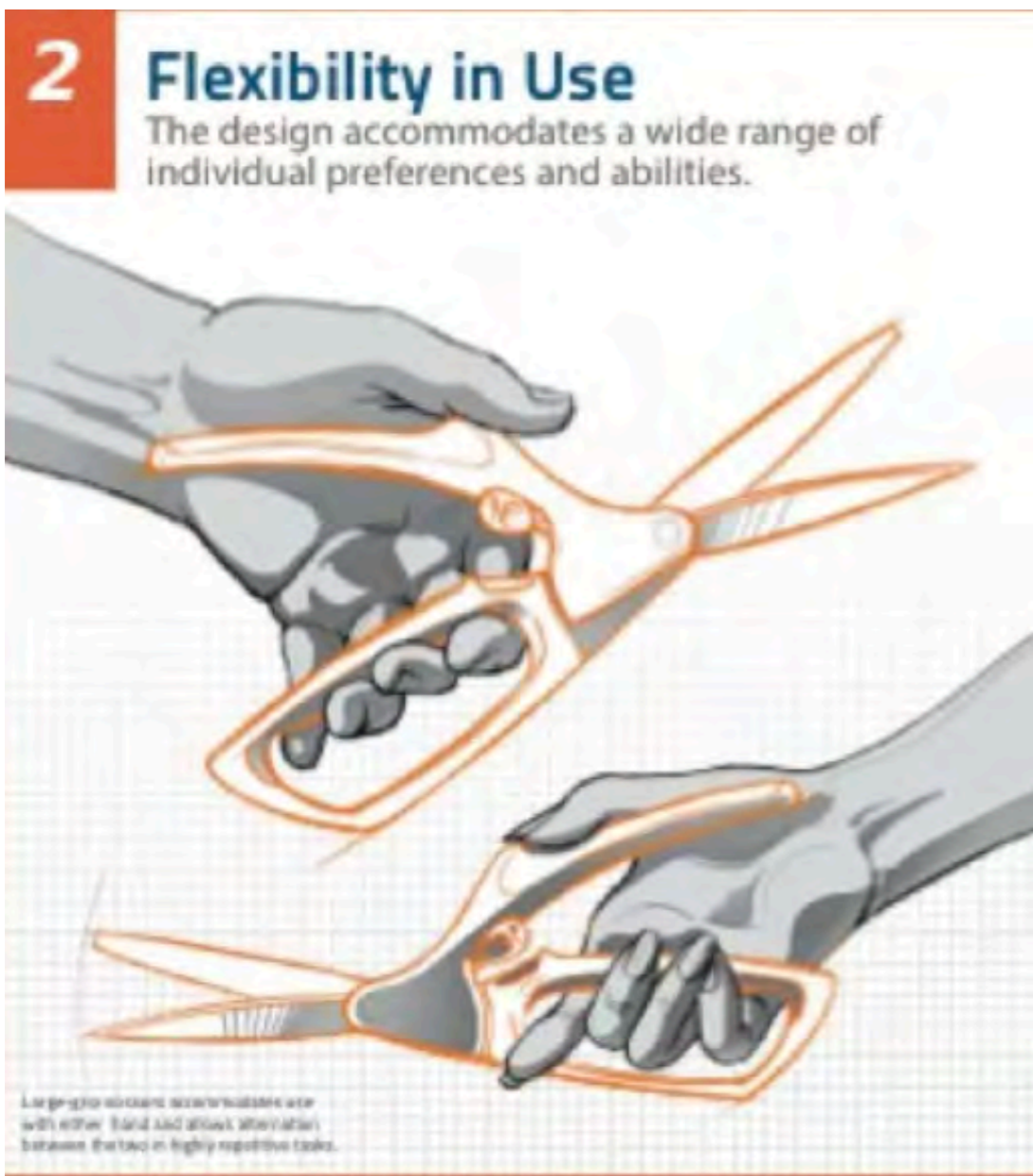


## Principle 1: Equitable Use

The design is useful and marketable to people with diverse abilities.

In other words, designs should appeal to diverse populations and offer everyone a comparable and nonstigmatizing way to participate.

Design Example: Use strong color contrast to avoid stigmatizing users with color blindness

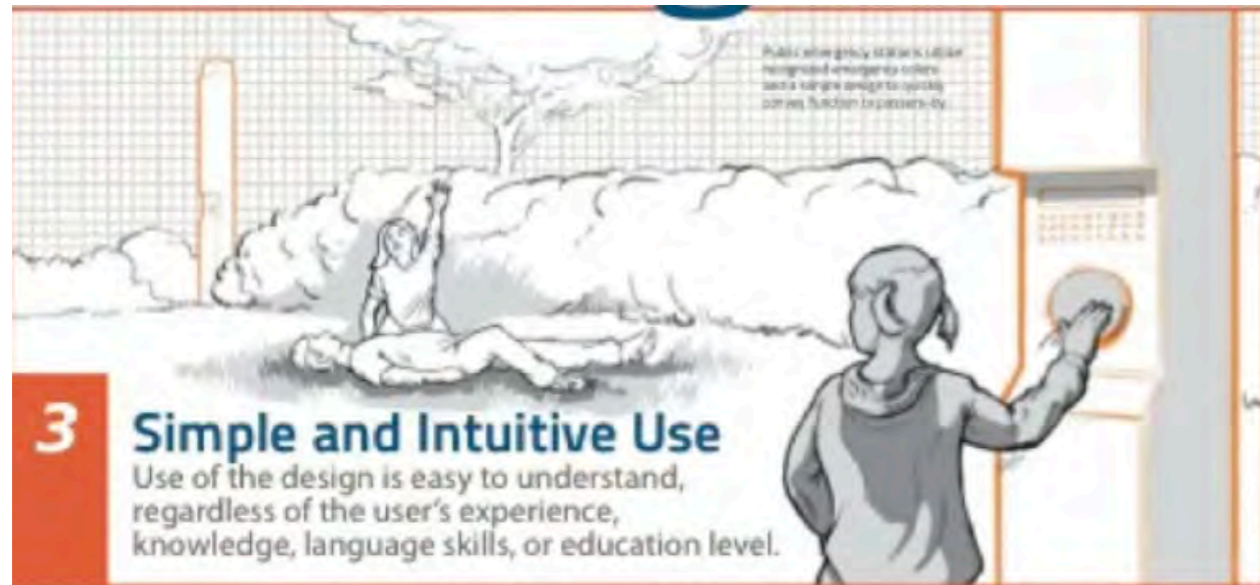


## Principle 2: Flexibility in Use

**“The design accommodates a wide range of individual preferences and abilities.”**

The Flexibility in Use principle encourages flexible, adaptable and/or customizable design.

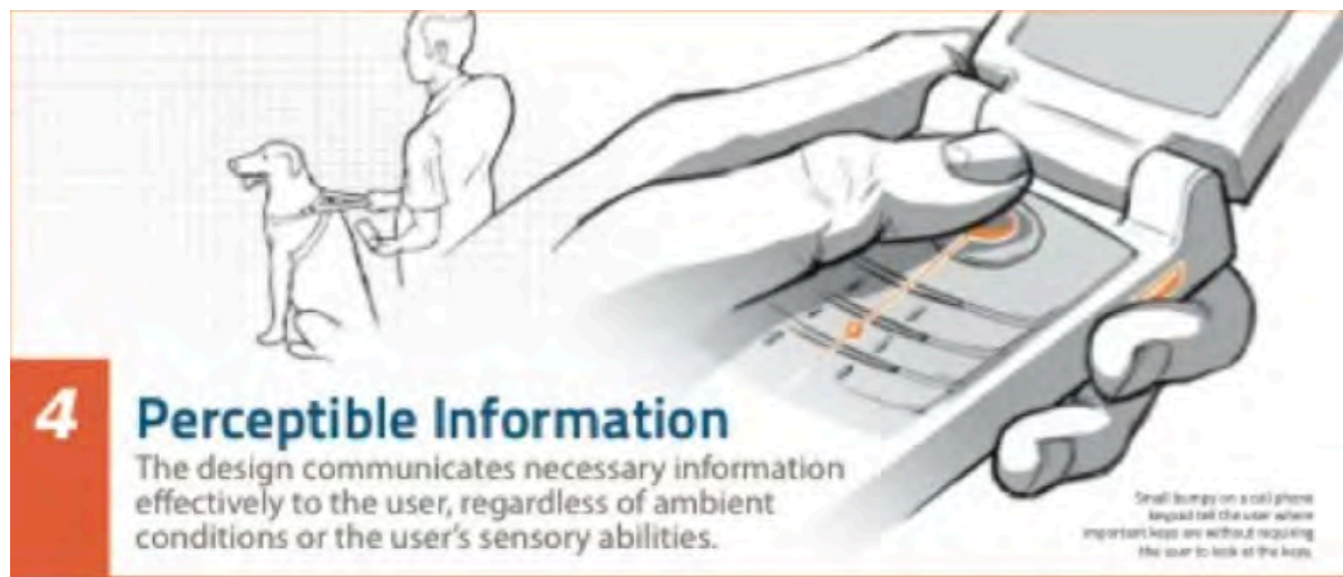
Design Example: Provide customization for dashboards  
Customization is a technique to accommodate a wide range of individual preferences and abilities. It enables users to choose and organize what they see on a website and how they will use it. Dashboards are good examples for customization



### **Principle 3: Simple and intuitive use** **“Use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level.”**

Simple and intuitive use is one of the goals of user experience design. It’s not surprising this is also one of the universal design principles. This principle aims to reduce complexity and mental or cognitive loads.

Design Example: Reduce visual clutter with Progressive Disclosure

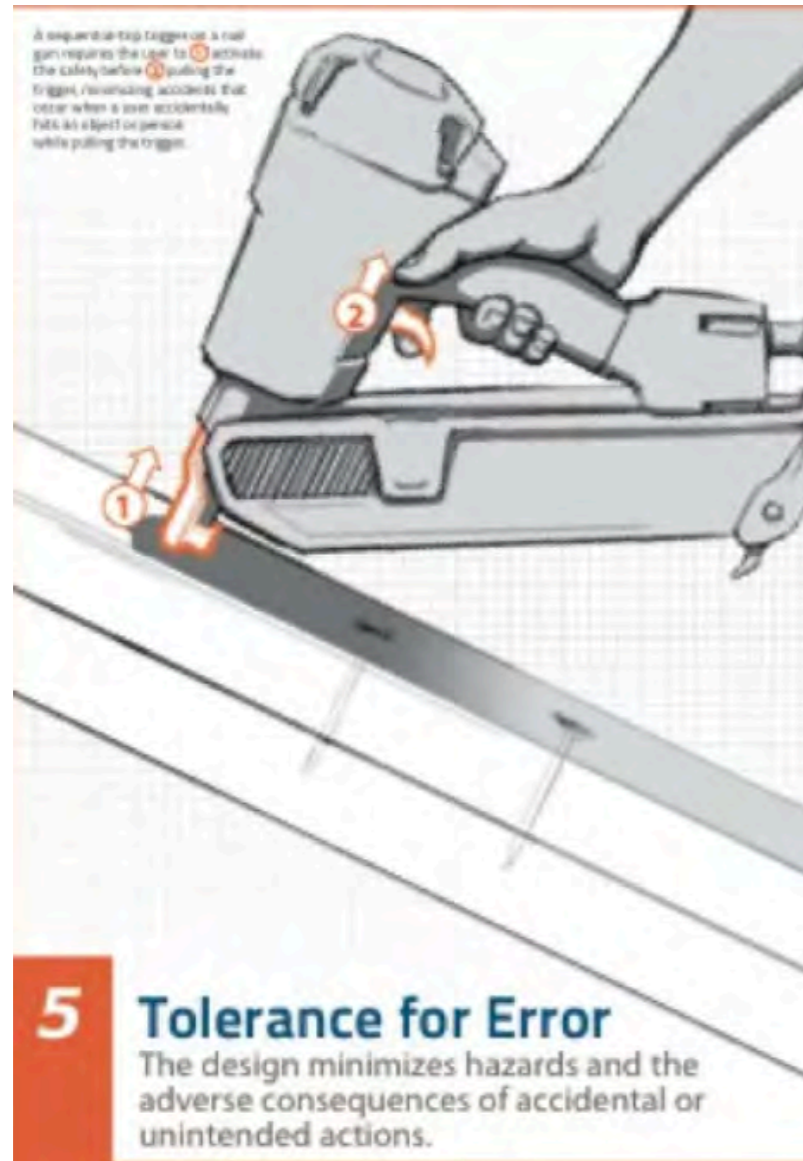


**Principle 4: “The design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.”**

Important information should be presented in multiple ways—say through both pictures and words—and designs should be compatible with devices that are used by people with physical limitations.

Design Example: Enable users with hearing impairments to watch videos with Video Transcription.



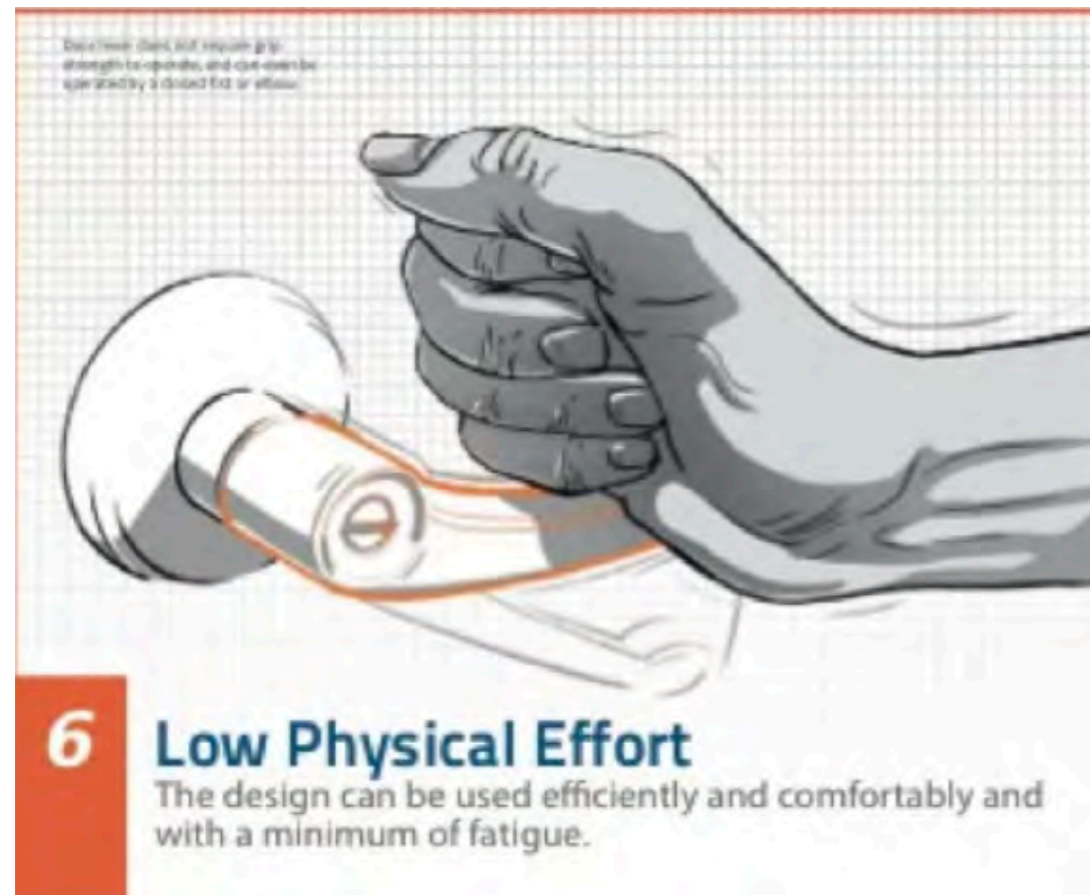


## Principle 5: Tolerance for Error

**“The design minimizes hazards and the adverse consequences of accidental or unintended actions.”**

Designs should eliminate or de-emphasize anything that could lead to issues during use. When errors do occur, warnings or other safeguards should ensure a user can undo them or stop the error before it happens.

Design Example: Reduce submission error with Form Validation

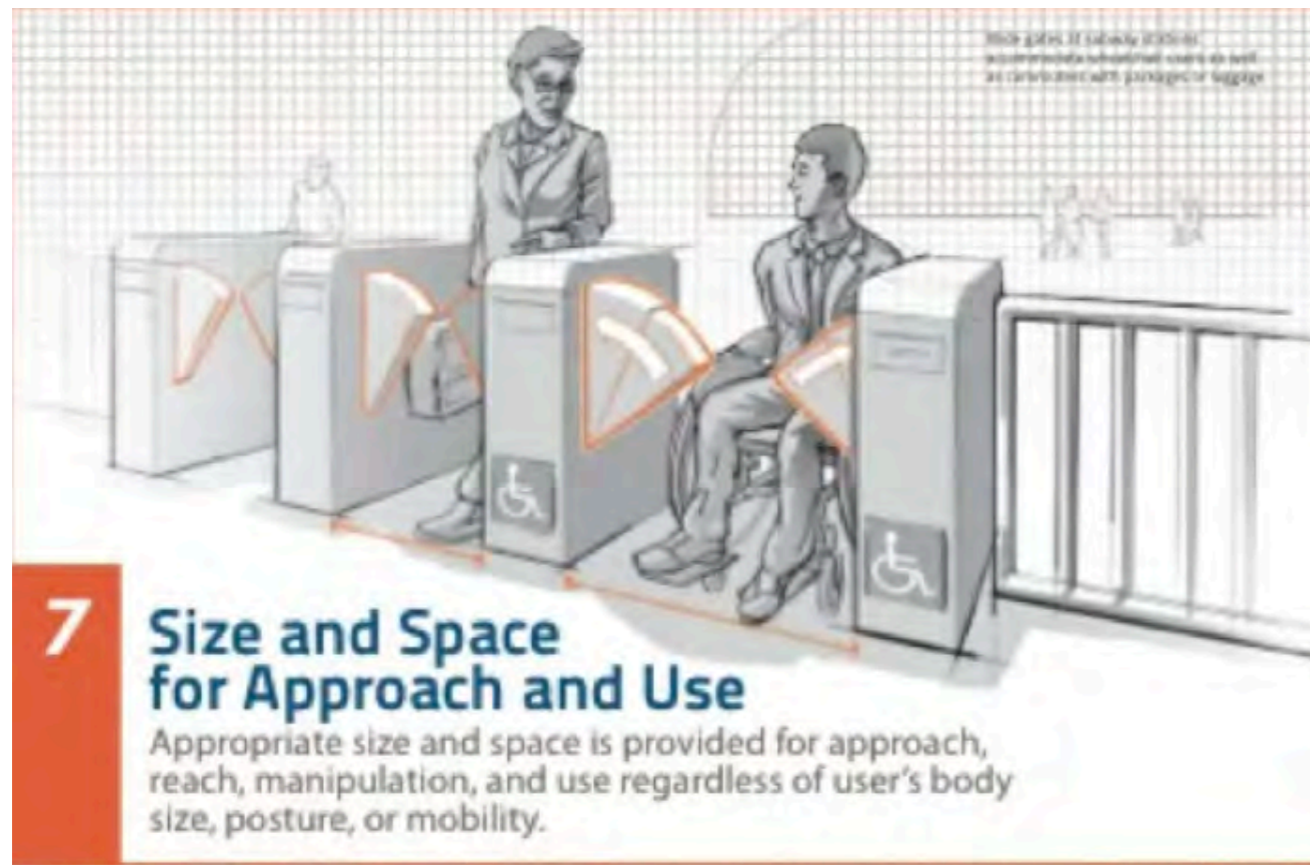


## Principle 6: Low Physical Effort

**“The design can be used efficiently and comfortably and with a minimum of fatigue.”**

Design Example: Minimize mouse usage with Keyboard Shortcuts

Or relevant navigation should be anchored at the top of a webpage, so the user doesn't have to scroll to the top whenever they wish to go to a different part of a website.



**Principle 7: Size and Space for Approach and Use**  
“Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.”

Design Example: Consider the Target Area of your website when it is on mobile devices.

For example, we regularly interact with screens that range from very small to very large, but the same website or app shouldn't be presented in the same way on a large computer screen as it is on a small mobile phone screen

The **goal of universal design** is not just making design accessible but also accommodate users preferences and desires.

For example, closed captioning is provided for those deaf or with hearing problems, but others can choose captioning in situations in loud environments like airport.

**Universal design focus in providing one solution for as many users as possible, which means some will inevitably be left out. It focus on the end goal not on the process.**

For a framework that is more concerned with the design process instead of its final product and **doesn't always use a single solution to accommodate different users**, we must turn our attention to **inclusive design**.

# INCLUSIVE DESIGN

**Microsoft:** Inclusive design is “a methodology that enables and draws on the full range of human diversity. Most importantly, this means including and learning from people with a range of perspectives.” Not just disability but sex, gender, cultural, language, etc

Inclusive design is a framework for designing digital products and services.

Inclusive design is a design philosophy that embraces how diverse people are.

Including a diverse range of people in the design, research, and testing process

Accessibility is another extra layer in the inclusive design process.

Besides a design being accessible. Which can be used by people who have hearing, visual, motor or cognitive impairment. For creating an even better experience we must welcome people regardless of gender, race, age language and walk of life.

Inclusive design focuses on the process of designing for diversity, and emphasizes the importance of consulting with a wide range of people representing diverse identities, characteristics, and perspectives during a project.

Inclusive design may offer different design solutions in order to avoid excluding anyone from using a given product, helping the product reach more users while reducing the possibility that a user will be alienated.

# Essential elements in inclusive design

## The right team

Team made up of people with different cultural backgrounds, varying abilities, and different gender identities is more powerful than a team of people who look, behave, identify, and think in the same ways.

## Involving users

We need to design with excluded communities rather than for them.

## **INCLUSIVE DESIGN BEST PRACTICES**

### **Use inclusive imagery**

There are two strategies to produce inclusive images: abstracting and diversifying.

Abstracting means departing from a realistic, detailed representation in favor of something that allows users to fit the image into their own lives and identities. You can accomplish this by using more conceptual but still human-like illustrations—or even objects or animals.

Abstracting is a great way to ensure our users will not feel excluded.



# Abstracting

☰ Lemonade



Who else lives in your home?



IT'S JUST ME



MY PARTNER



PARTNER AND KIDS



MY KIDS



OTHER



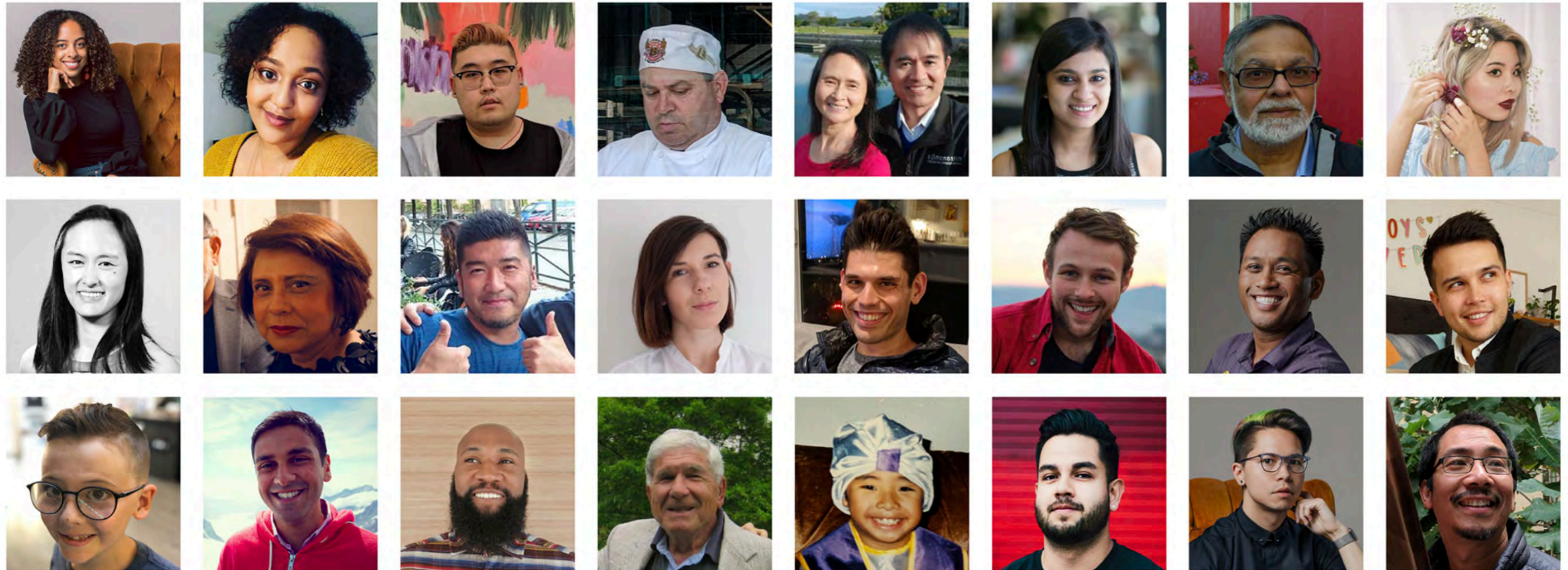
Great, your partner will be covered by your Lemonade policy 😊

NEXT

# Diversifying

<https://airbnb.design/your-face-here/>

## Keep It Real



## **Write inclusive copy**

Inclusive copy is all about making words work for everyone.

## **Designing forms for gender diversity and inclusion**

<https://uxdesign.cc/designing-forms-for-gender-diversity-and-inclusion-d8194cf1f51>

## **Information Architecture**

# PRINCIPLES OF INCLUSIVE DESIGN

- Recognize exclusion
- Learn from diversity
- Solve for one, extend to many

## Recognize exclusion

Exclusion happens when we solve problems using our own biases (subconscious bias) (CODED BIAS)

Not adding diversity in our design process (empathy, define, ideation, prototyping, and testing). We design excluded communities rather than for them.

Recognize **temporary exclusion** designing our product and services. Short-term injury or context affects the way people interact with the world around them. Sometimes exclusion is **situational**, like we are in a loud airport and we experience hearing impairment and we pay attention to video captioning.

## Learn from diversity

Human beings are the real experts in adapting to diversity.

Inclusive design puts people in the center from the very start of the process.

**Empathy** is an important part of many different forms of design. When building empathy for exclusion and disability, it's misleading to rely only on simulating different abilities through blindfolds and earplugs. **Learning how people adapt to the world around them means spending time understanding their experience from their perspective.**

## **Solve for one, extend to many**

A solution that works well for someone who's blind might also benefit any person driving a car. Inclusive design works across a spectrum of related abilities, connecting different people in similar circumstances.

Ex: high-contrast screen settings were initially made to benefit people with vision impairments. But today, many people benefit from high-contrast settings when they use a device in bright sunlight.

Designing with constraints in mind is simply designing well.

## Referneces:

Inclusive Design Is a Welcome Mat

<https://www.youtube.com/watch?v=2pBILUE49hI>

DESIGNING WITH DISABILITIES IN MIND: Universal Design, Inclusive Design, and Accessibility Design

<https://www.youtube.com/watch?v=GbtXOA-7Y1Q>

19 Universal Design Inclusive Design and Equity Focused Design

[https://www.youtube.com/watch?v=sAYSHiju\\_Fs](https://www.youtube.com/watch?v=sAYSHiju_Fs)

UX Virtual Panel: Accessibility vs. Inclusive Design Vs. Universal

<https://www.youtube.com/watch?v=KkuEMCXbaIE>

Inclusive Design vs. Universal Design: What's the Difference?

<https://careerfoundry.com/en/blog/ux-design/universal-vs-inclusive-design/>



## Referneces:

Is Inclusive Design? A Beginner's Guide

<https://careerfoundry.com/en/blog/ux-design/beginners-guide-inclusive-design/>

Microsoft Inclusive Design

<https://www.microsoft.com/design/inclusive/>

Learn to Create Accessible Websites with the Principles of Universal Design

<https://www.interaction-design.org/literature/article/learn-to-create-accessible-websites-with-the-principles-of-universal-design>

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# THANK YOU

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