# An introduction to Digital Accessibility

# SafeStack

## Acknowledgement of country

I'd like to acknowledge the **Traditional Owners of the lands** on which we meet today.

In my case, this is the **Cammeraygal people** of the Guringai tribe of the Eora nation.

I'd like to pay my respects to **Elders past and present**, and extend that respect to all First Nations people present today.

I would also like to acknowledge the **Tangata whenua** (people of the land) of Aotearoa (New Zealand)

## Intros

### Add some quick intros in chat

- Which City/Country are you in?
- What's your current role?
- How long have you been with SafeStack?

### My name is Russ Weakley

- 1995: Web Design, HTML and CSS.
- 2003: Accessibility.
- 2012: Component libraries and Design systems.

# Some housekeeping

### Ask questions any time!

- Option 1: Use the "raise hand" icon.
- Option 2: Ask in chat - I may not see straight away.
- Option 3: Unmute and interrupt at any time.

### Cameras on or off?

- Having cameras on at times can be helpful.
- However, everyone has different comfort levels.
- Choose your comfort level!

### A safe space

- Respect people's gender, identity, diversity.
- No judgement of people's knowledge or questions.
- Confidentially around shared stories.

### Resources provided?

A version of the slides and any other associated resources will be provided at the completion of the session.

### Exercises

We'll be using FigJam for some execises. You don't need an account!

### What will we cover today?

1. Why should you care about accessibility?
2. Let's meet some people
3. Types of disability
4. Accessibility user profiles
5. What is WCAG?
6. How accessibility-mature is your organisation?

# Why should you care about accessibility?

### Key reasons to care:

1. Legal responsibilities
2. Reputation
3. User Experience
4. Commercial incentives

## Legal responsibilities

### Every country has accessibility requirements

- Australia: Disability Discrimination Act 1992
- New Zealand: The Human Rights Act 1993
- USA: The Americans with Disabilities Act (ADA) 1990

## Reputation

### Some recent examples

- 2019, USA: Guillermo Robles v. Domino's Pizza
- 2015, Australia: Gisele Mesnage v. Coles
- 2000, Australia: Bruce Maguire v. SOCOG

While there are financial risks associated with legal actions like this, the possible **damage to an organisation's reputation** is far more significant.

*Domino's will likely forever be remembered as the brand that argued against the basic rights of a blind man - and lost.*
Source

## User Experience

Ultimately, accessibility is **about user experience**.

Features intended for people with disabilities often **improve the user experience for many other groups**.

## Commercial incentives

Do you know the **percentage of people** who have some form of disability in Australia, New Zealand or USA?

### Some stats

- Australia: 17.7% of the population

- New Zealand: 24.3% of the population
- USA: 26% of the population

These estimates are known to be low, as many people **do not identify themselves as having some form of disability**.

Can any company afford to **alienate such a large percentage** of its potential customer base?

## Bottom line?

Accessible digital services attract more visitors, improve customer experience, and **position your organisation as an inclusive and caring brand**.

Any **questions or comments**?

# Let's meet some people

We're going to look at how various people **interact with the digital world**.

- Screen reader software (e.g. JAWS, NVDA, VoiceOver).
- Refreshable braille displays.
- Screen magnifier software.
- Head wand.
- Quadstick - Sip and Puff.
- Head switches.
- Dragon Naturally Speaking.

- Dynavox - Mouse emulation.
- Steve's Story.

All of these people **could be your customers** today... or tomorrow!

Any **questions or comments**?

# Types of disabilities

We've looked at some people using assistive technologies, but **how many different disabilities are there**?

### Five broad categories:

- Visual.
- Auditory.
- Physical.
- Cognitive, learning, and neurological.
- Speech.

## 1. Visual

### A. Low Vision:

- Macular degeneration.
- Glaucoma.
- Diabetic retinopathy.
- Cataract.

### B. Monochromacy:

- *Rod monochromacy*: inability to distinguish colours.
- *Cone monochromacy*: inability to distinguish colours.

### B. Dichromacy:

- *Protanopia*: absence of red retinal photoreceptors.
- *Deuteranopia*: absence of red retinal photoreceptors.
- *Tritanopia*: absence of blue retinal photoreceptors.

### B. Anomalous trichromacy:

- *Protanomaly*: poor red–green hue discrimination.
- *Deuteranomaly*: mildly affected red–green hue discrimination.
- *Tritanomaly*: poor blue–green and yellow–red/pink hue discrimination.

### C. Blindness

- Blindness.
- Legally blind.

## 2. Auditory

### Auditory disabilities:

- Hearing loss.
- Hearing impaired.
- Deafness.

## 3. Physical

### A. Traumatic Injuries

- Spinal cord injuries that affect the upper body.
- Loss or damage to limb(s).

### B. Full-body Diseases & Conditions

- Arthritis.
- Spina Bifida.
- Cerebral Palsy.
- Muscular Dystrophy.
- Multiple Sclerosis.
- Parkinson's Disease.
- Locked-in syndrome.
- Amyotrophic Lateral Sclerosis (ALS).

### C. Arm, Hand and Finger Disorders

- Osteoarthritis.
- Lymphedema.
- Trigger Finger.
- Thromboangiitis obliterans (Buerger's Disease).
- Rheumatoid Arthritis.
- Boutonnière Deformity.
- Dupuytren Contracture.
- Compartment Syndrome.

### D. Other motor-related conditions

- Chorea.
- Tremors.
- Myoclonus.
- Dystonia.
- Ataxia.
- Tic disorders.

## 4. Cognitive, learning, and neurological.

### A. Intellectual disabilities

- Fragile X Syndrome.

- Down Syndrome.
- Autism spectrum.
- Fetal Alcohol Spectrum Disorder (FASD).
- Williams Syndrome.
- Prader-Willi Syndrome (PWS).
- Phenylketonuria (PKU).
- Cerebral Palsy (in some circumstances).

### B. Learning disabilities

- Dyscalculia (related to numbers/maths).
- Dyslexia (related to reading).
- Aphasia (related to understanding language).
- Attention Deficit Hyperactivity Disorder (ADHD).
- Non-Verbal Learning Disabilities.
- Language Disorders.
- Auditory processing disorders.
- Sensory processing disorders.

### C. Memory impairments

- Dementia
- Alzheimer disease
- Limited short-term memory
- Missing long-term memory

## 5. Speech

- Apraxia of speech (AOS).
- Cluttering (also called “tachyphemia”).
- Dysarthria.
- Speech sound disorders.
- Stuttering.
- Selective Mutism.

## Disabilities are varied and complex

**Disabilities are varied and changing:**

- Disabilities may be spectrums
- Some people have multiple disabilities or conditions.
- Some disabilities change over time.
- Some disabilities change from day to day.

Any **questions or comments**?

# Accessibility user profiles

How can we plan, design and build for **all these different types of disabilities**?

One simple solution is to focus on **user profiles** that can be used to represent different disability sets.

This means you can **focus on a small set of user types** rather than a massive list of specific disabilities and impairments.

These user profiles or personas can then be used **throughout your process** to ensure inclusion.

We're now going to **do an activity** to build some accessibility user profiles based on Gov.UK.

# What is WCAG?

What does the term **"WCAG"** stand for?

The World Wide Web Consortium (W3C) is the primary organisation that **develops international standards for the World Wide Web**.

One of the standards produced by the W3C is the **Web Content Accessibility Guidelines** - often referred to as "WCAG".

- **WCAG 2.0** – released in Dec 2008
- **WCAG 2.1** – released June 2018
- **WCAG 2.2** – due later in 2022
- **WCAG 3.0** – expected 2023/24

## 4 Principles

- **4 Principles**
  - 13 Guidelines
    - 78 Success Criteria
      - Sufficient Techniques
      - Advisory Techniques
      - Failures

### 1. Perceivable

Information and user interface components must be presented to users in ways they can perceive.

### 2. Operable

User interface components and navigation must be operable by anyone.

### 3. Understandable

Information and the operation of a user interface must be understandable.

### 4. Robust

Content must be robust enough to be interpreted reliably by a wide variety of user agents.

## 13 Guidelines

- 4 Principles
  - **13 Guidelines**
    - 78 Success Criteria
      - Sufficient Techniques
      - Advisory Techniques
      - Failures

These guidelines **provide the overarching goals** to make content more accessible.

## 78 Success criteria

- 4 Principles
  - 13 Guidelines
    - **78 Success Criteria**
      - Sufficient Techniques
      - Advisory Techniques
      - Failures

These are a series of **testable success criteria** that helps determine if the site/app can be considered “accessible”.

Each Success Criteria has a compliance level of either: **“A”, “AA”, or “AAA”**.

## WCAG 2.1

- **30 level “A”** (minimum level of conformance).
- **20 level “AA”**.
- **28 level “AAA”** (maximum level of conformance).

To be “AA” compliant, sites **must meet all “A” and “AA”** Success Criteria.

This means that websites and web apps **must comply with all 50 Success Criteria**.

## WCAG 2.2

- 9 new success criteria
  - 2 Level A, 5 Level AA, 2 Level AAA
- 2 updated success criteria
  - 1 renamed, 1 new level

Any **questions or comments**?

# How accessibility-mature is your organisation?

The W3C has a very detailed document called the W3C Accessibility Maturity Model that provides a **framework for measuring accessibility maturity**.

There is a **much simpler model** that allows you to quickly determine the accessibility-maturity of your organisation.

Let's all go to the Acacado maturity model and **try it out**.

That was a **high-level, organisational view** of maturity. Let's dive deeper!

I'd like you all to **answer a series of questions** in chat - lots of individual answers and fine!

And these questions are **not designed to shame** your organisation or individuals.

So, **it doesn't matter** if the answers are either:

- *"No."*

- *"I don't know."*

These questions will **help to**:

- Define your current level of accessibility maturity
- Provide a roadmap for areas of improvement
- Decide the highest priorities to focus on for our next session

## 1. Key documents

For these first questions, I'm going to ask whether you **know if some key accessibility documents exist**.

But I'm also going to ask if **you'd know where to find them**.

Knowing the exact location of important documents is a sign of **shared knowledge across the team** and a higher level of maturity.

1.1: Does your organisation have a **commitment to accessibility/inclusion**?
If yes, do you know where to find it?

1.2: Does your organisation have a **public accessibility statement**?
If yes, do you know where to find it?

*It presents information about the target level of web accessibility for the website and the methods used to achieve those targets.*
*It acknowledges any areas of the website where accessibility targets have not been met.*

*It is a powerful declaration of commitment.*

1.3: Does your organisation have a **definition of "Supported technologies"**?
If yes, do you know where to find it?

*This is a list of technologies (browsers, operating systems and assistive technologies) that you have tested your products with and can declare will work as expected with your product.*

## 2. Knowledge / Skills

2.1: Are all roles **aware of the importance of accessibility**?
PMs, POs, BAs, IMs, QAs, Designers, Engineers

2.2: Have designers, engineers, and QA's received **role-specific accessibility training**?

2.3: Have all key roles been trained in **how to test for accessibility**?

2.4: Have **accessibility champions** been established within teams?

## 3. Processes

3.1: Do you have processes for **accessibility-related complaints** from the public?

3.2: Have accessibility responsibilities been **defined for all key roles**?

3.3: Are regular **accessibility design reviews** in place?

3.4: Are **accessibility requirements** included as part of:

- Sprint planning?
- User stories?
- Estimates? (Fibonacci, T-shirt sizing)
- Definitions of done?

3.5: Have **disability profiles or personas** been established, and are they in use?

## 4. Testing

4.1: Is **accessibility testing** conducted by:

- External experts
- Inhouse experts
- QAs
- Key roles within teams

4.2: Do teams have **automated accessibility testing tools** in place?

4.3: Are regular **accessibility audits** conducted on products before and after launch?

4.4: Are **people with disabilities** included in key processes?

## 5. Procurement and hiring

5.1: Does your organisation have **accessibility guidelines for digital product procurement**?
If yes, do you know where to find it?

5.2: Is accessibility skills/knowledge considered part of **recruitment**?

## 6. Different mediums

6.1: Are there processes in place to ensure **internal and external Word documents** re accessible?

6.2: Are there processes in place to ensure **internal and external PDF documents** re accessible?

6.3: Are all **email communications** accessible

6.4: Are all **social media communications** accessible? (Alt text, caption, transcripts etc.)

## 7. Some questions for managers

7.1: Are all digital managers aware of **the standards and requirements that you must to comply with** for your digital products?

7.2: Do all digital managers have the **remit to stop something from going live** if it is not accessible?

# Time for questions/discussion?