



Accessibility for All

Rory Preddy
Microsoft Developer Advocate



@rorypreddy

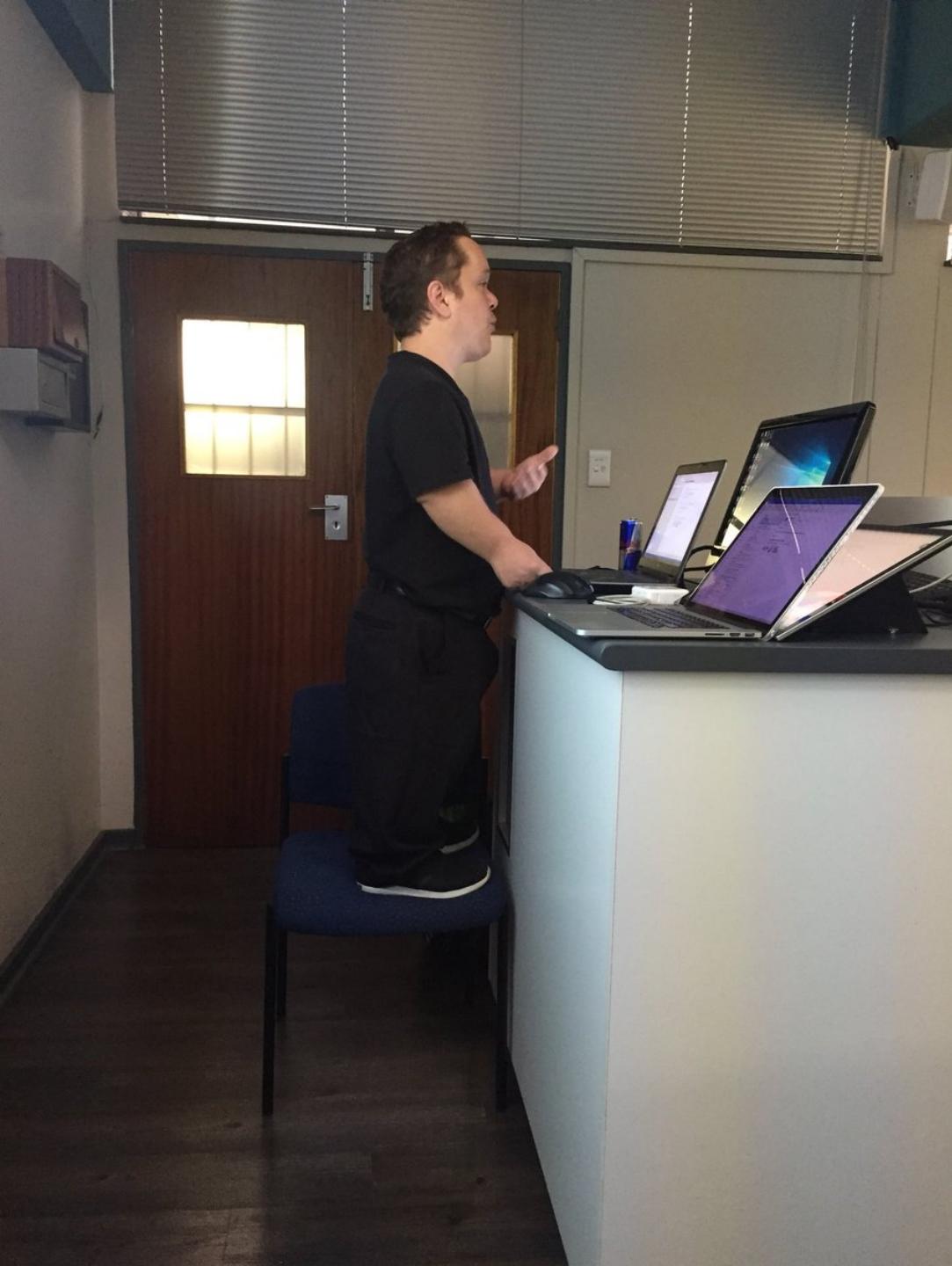


<https://aka.ms/for-all>

My Car Pedals



Bolt on



I felt left out

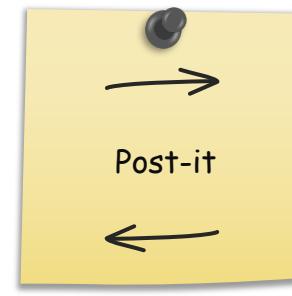
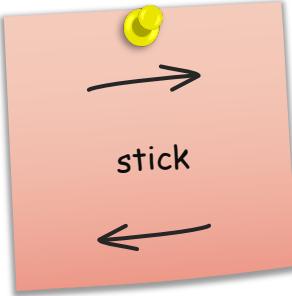
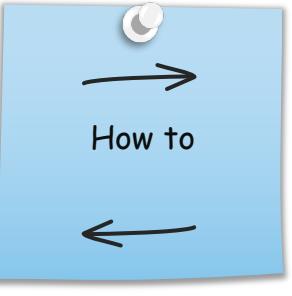


The Agile Manifesto



Open office

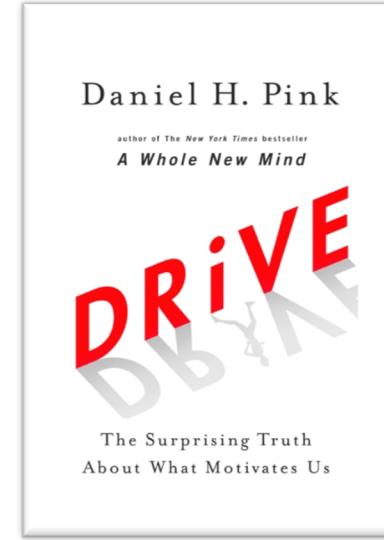
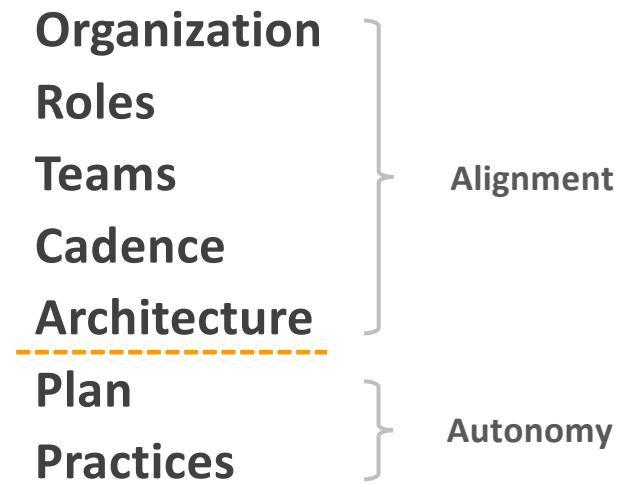




The Hydra



Aligned Autonomy



*"Let's try to give our teams three things ...
Autonomy, Mastery, Purpose."*

Ikigai



Empathy



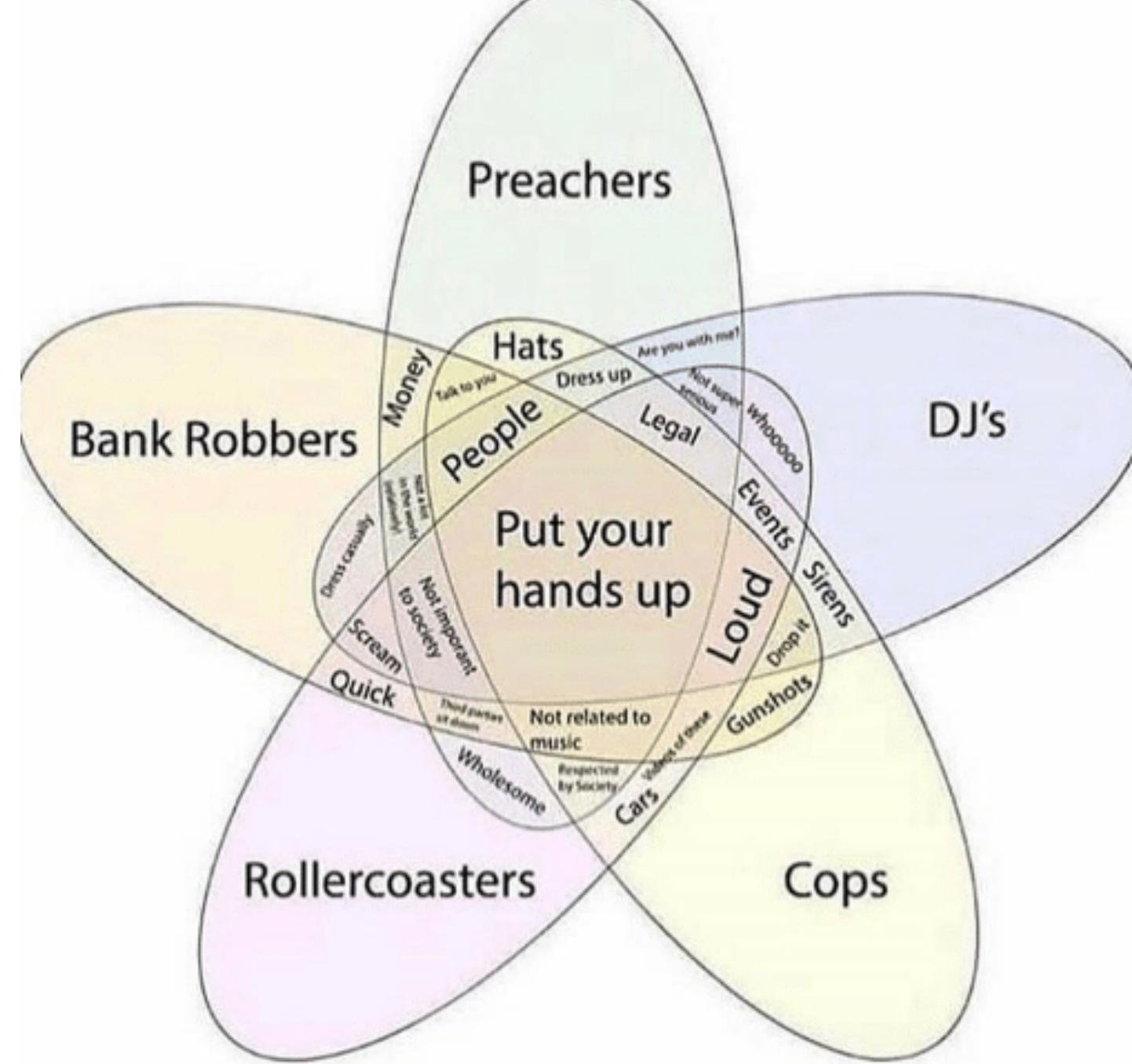


NEW SIDE PROJECT

ME

**ALL MY
OTHER UNFINISHED
PROJECTS**

Put your hands up



Empathy Bubble



Fail

FAIL

The plan

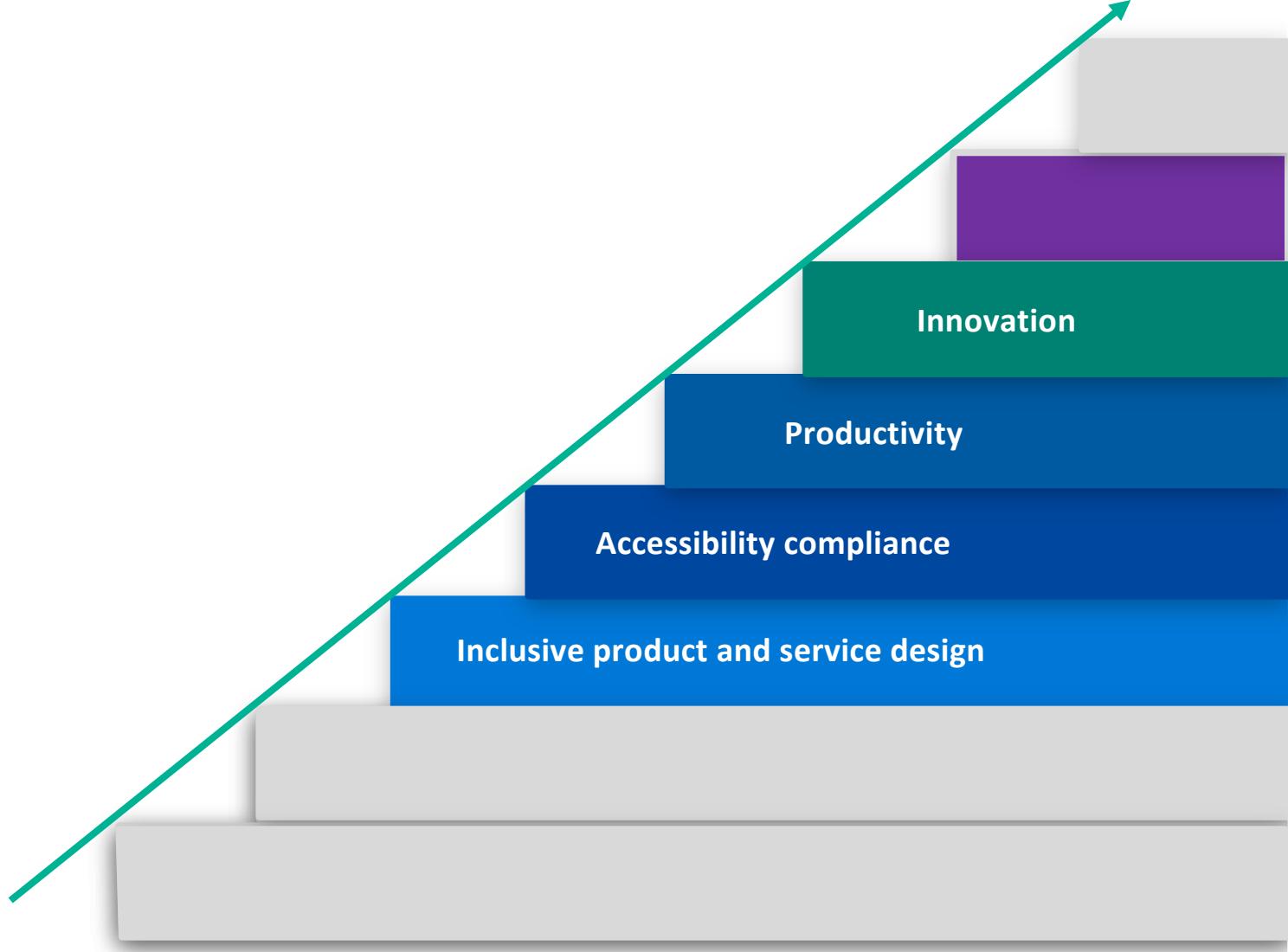
- Understanding Your Organization's Unique Accessibility Motivators
- Set Achievable Interim Milestones
- Implement Tools
- Measure, Improve and Automate

Accessibility



Accessibility is...

...the design of products, services, and environments so that everyone, including people with disabilities, can fully experience them.



Disability



Personal
health
condition

Disability



Mismatched
human
interactions

WCAG – Compliance levels

Level A — deals with the most basic web accessibility features

Level AA — signifies the biggest and most common barriers for disabled users

Level AAA — addresses the highest (and most complex) level of web accessibility

WCAG - principles

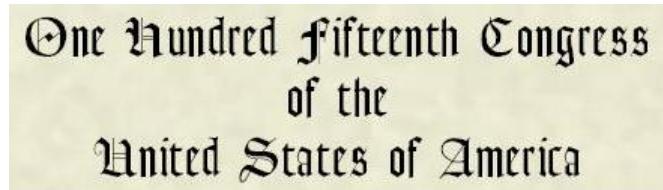
- Perceivable – *can you see it*
- Operable – *can you use it*
- Understandable – *can you understand it*
- Robust – *it won't break future technologies*



Motivators



Legislation



US 21st Century Integrated Digital Experience Act



EU parliament directive on digital accessibility



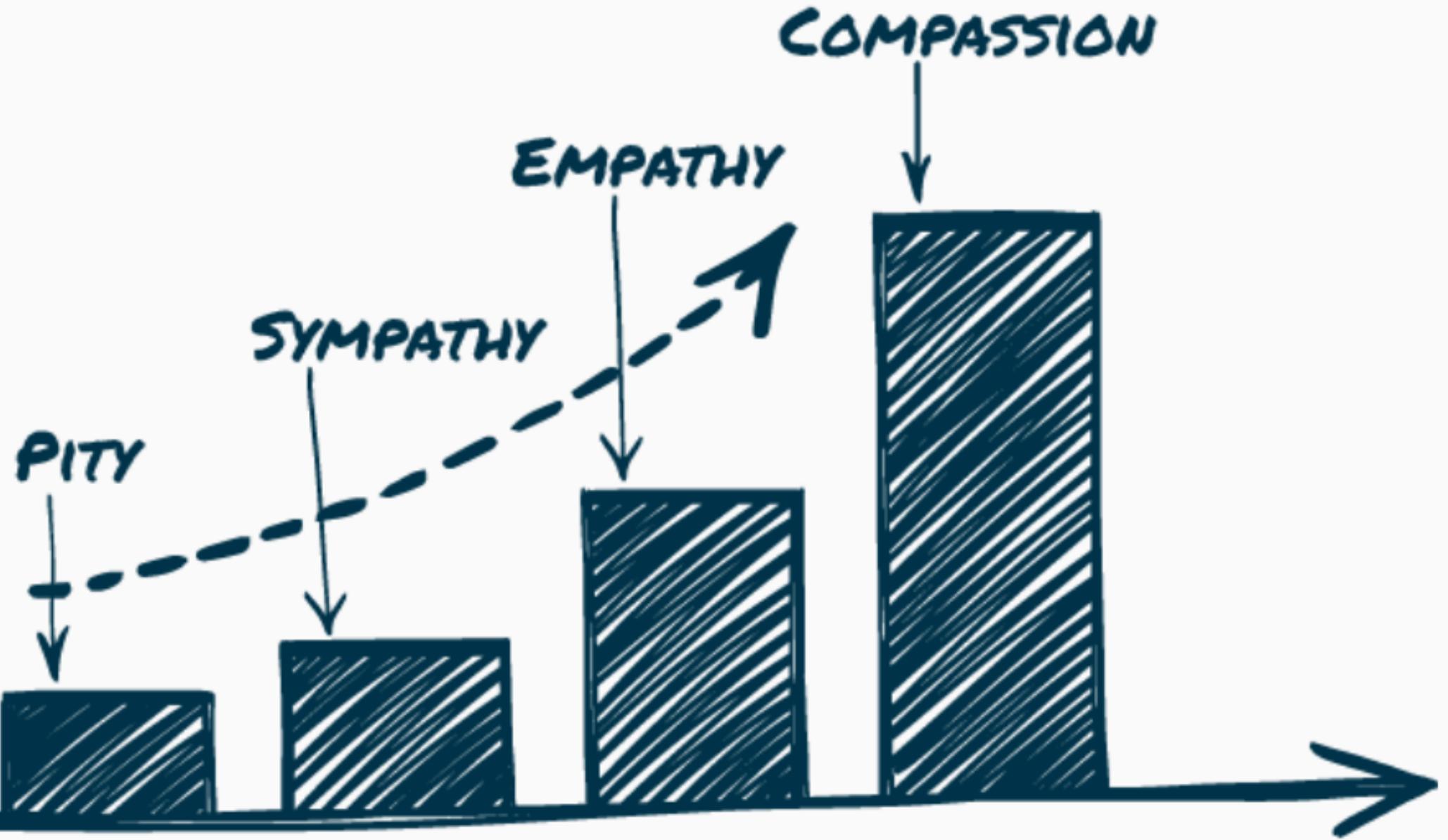
Quality of life

For most of human history, we've put our innovative capacity into improving the quantity of life. Because we're living longer, our focus is starting to shift toward improving our quality of life

--Bill Gates



Emotional Engagement





Claudia



54 years old social worker

Sight impaired (partially sighted)

Uses a screen magnifier and changes colours to increase contrast

Chromebook help

If you're lost, go back to the first tab to re-orientate yourself!

Ashleigh



24 years old arts graduate and administrative assistant

Severely sight impaired (blind)

Uses a screen reader

Chromebook help

Screen reader quick guide:

Use Tab to move from links and form elements to the next. Shift + Tab to go back. Search + Arrow Right/Left to read text in between those.

Ron



82 years old, retired

Multiple conditions: arthritis, losing his hearing, cataracts, hip replacements

Doesn't use any assistive technology

Chromebook help

As Ron is not very technical, don't use anything which might help. For example, don't zoom into the page and don't use the keyboard to navigate.

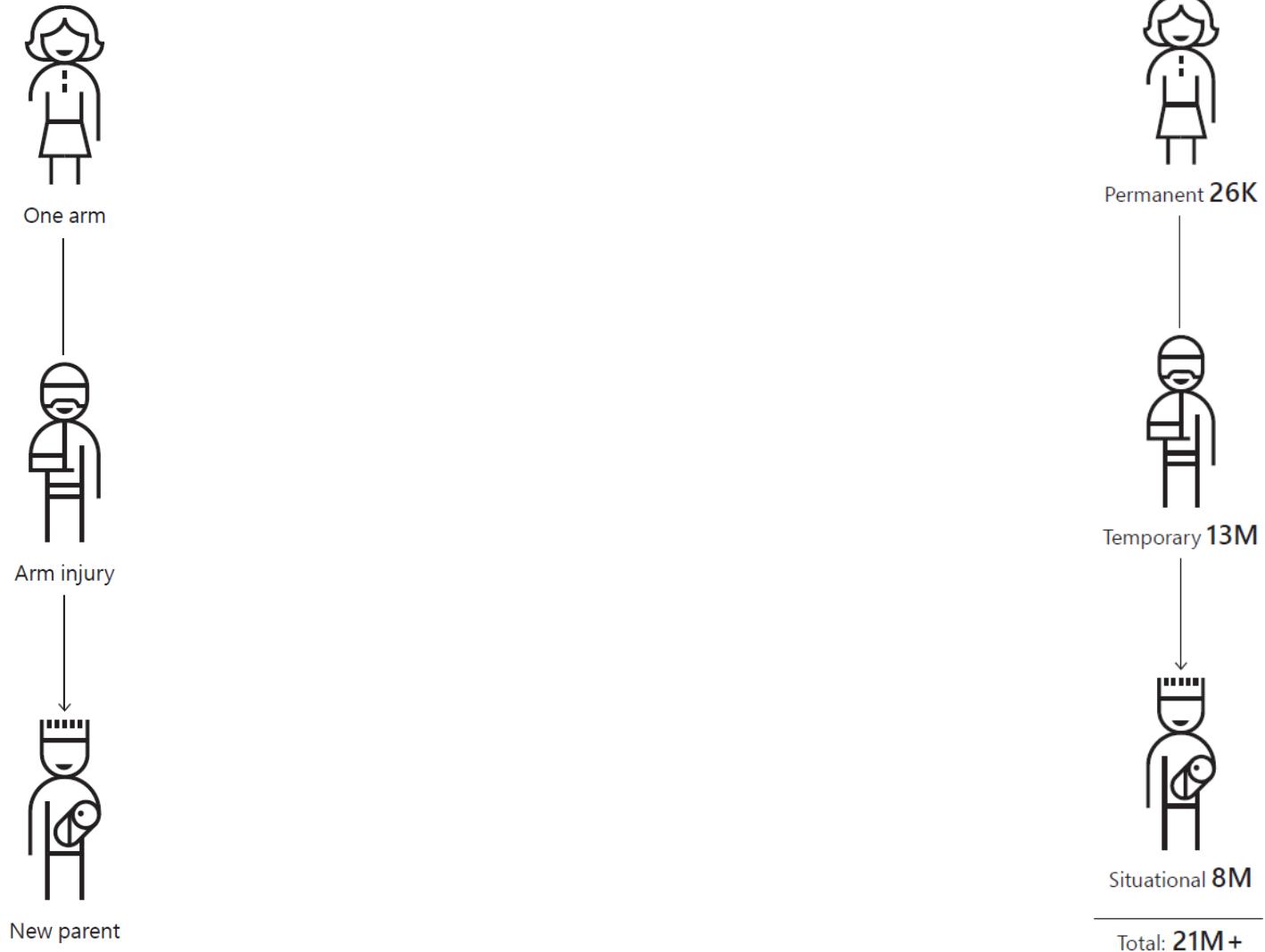


<https://alphagov.github.io/accessibility-personas/>

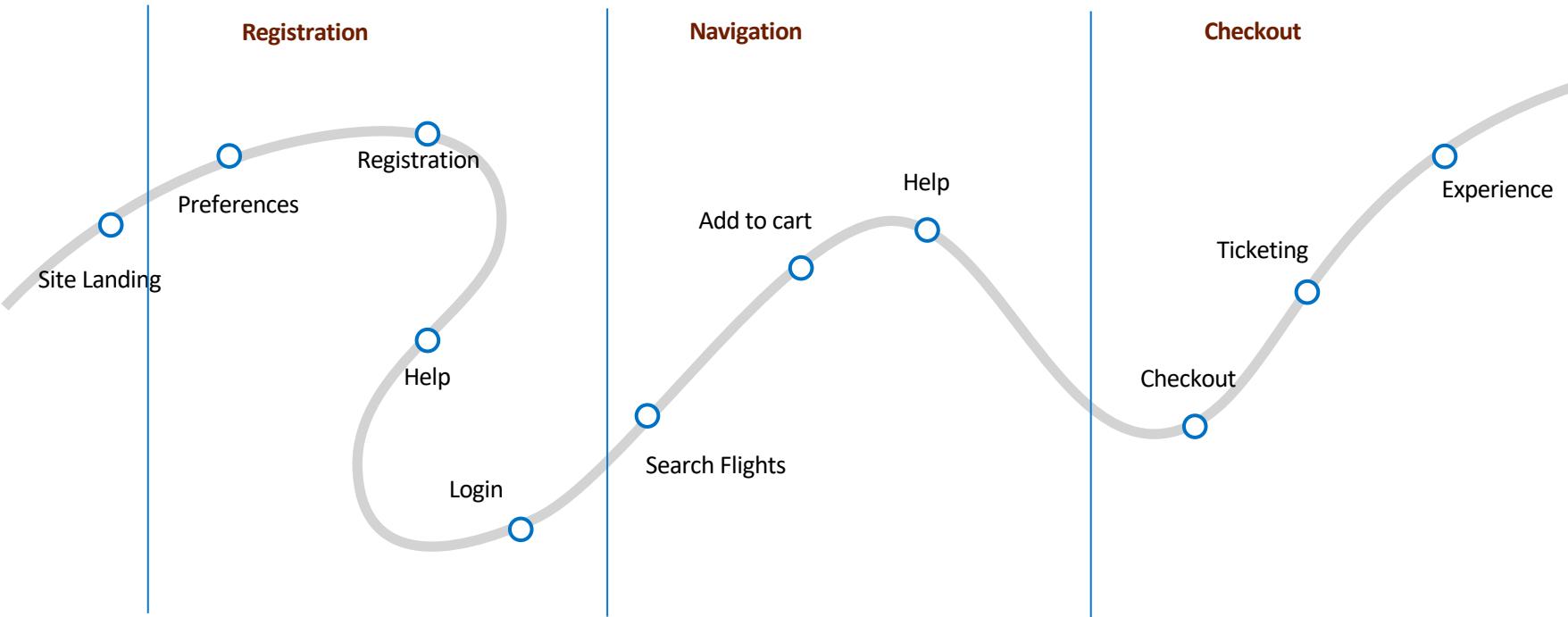
Inclusive design steps

1. Recognise exclusion
2. Solve for one, extend to many
3. Learn from diversity

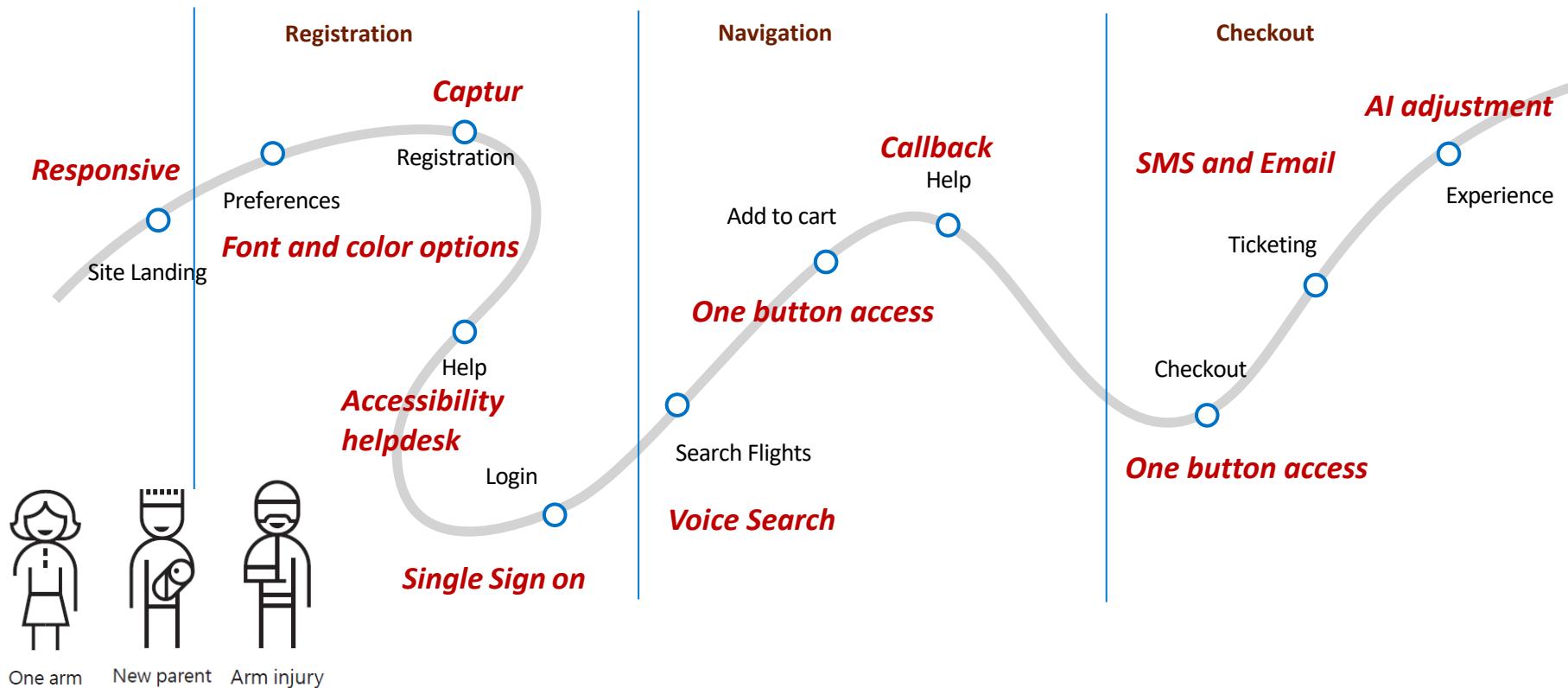
Persona Spectrum



Ticketing scenario



Apply Personas

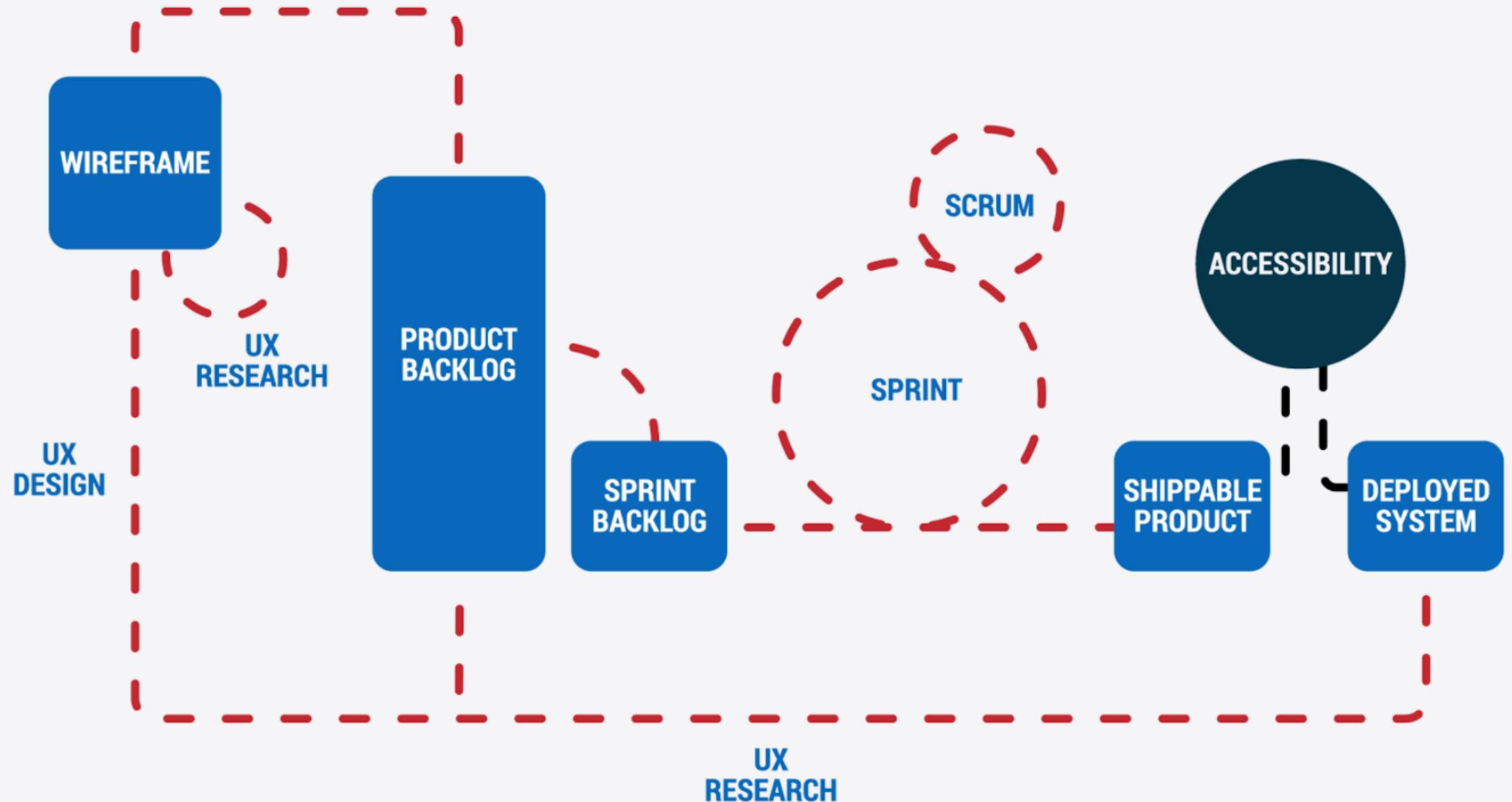


Empathy Transformation Practices

- Create a central team to manage the transformation
- Execute an empathy program to drive motivation.
- Make high-quality learning resources available and integrate these into onboarding.
- Form a team of accessibility coaches to coach agile teams.
- Create an accessibility dashboard to measure progress.

Milestones





Backlog

Design

Coding

Testing

Release



Small Investment

Small Investment

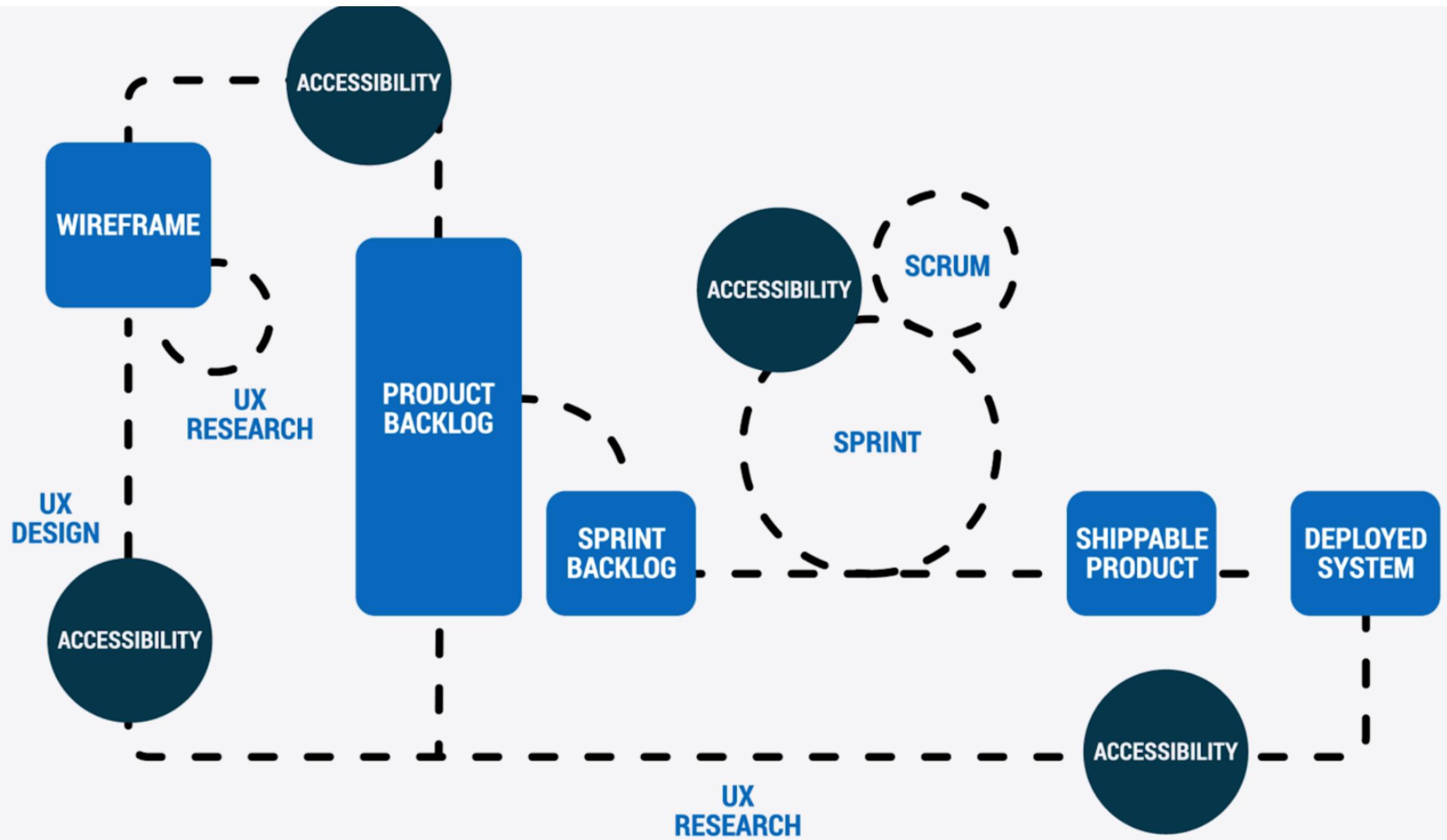
Small Investment

Small Investment

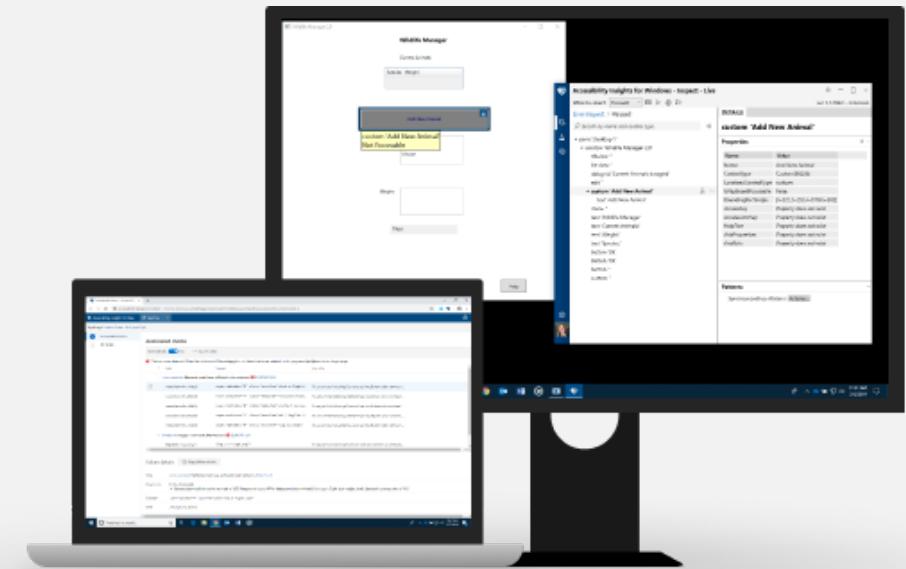
Large Investment

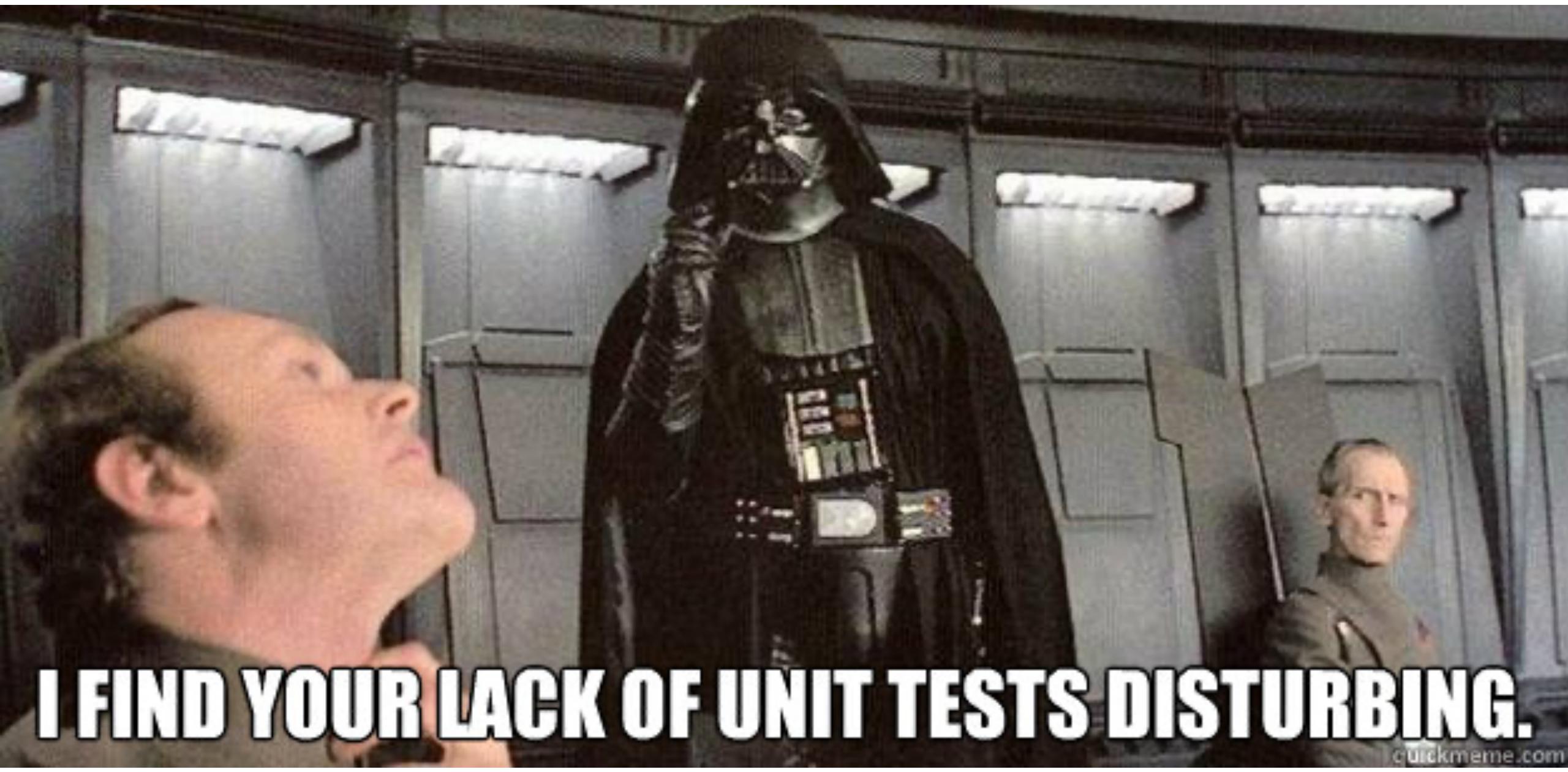
⚠ Traditional





Tools

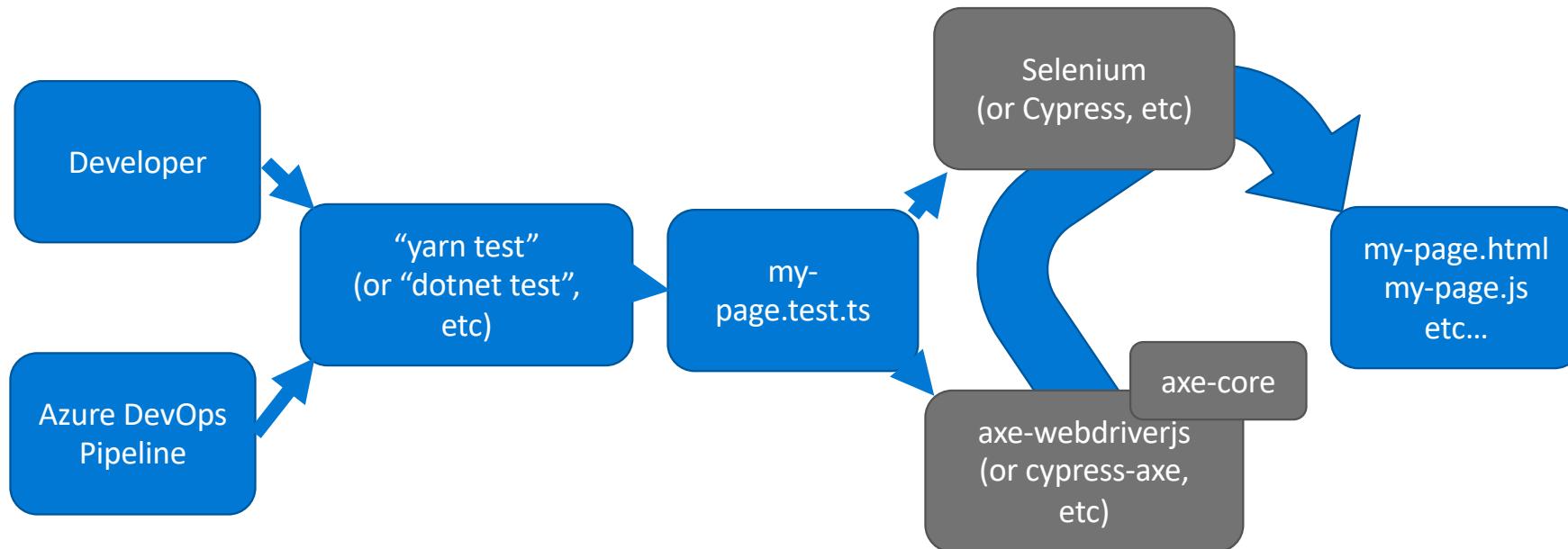




I FIND YOUR LACK OF UNIT TESTS DISTURBING.

Scanning with axe-core

- axe-core is a javascript library (npm package)
- scans a rendered DOM
- reports back results as json
- Same engine that Accessibility Insights uses



Azure DevOps :: / Pipelines / [failing example] csharp-sel... / 20200115.8

Search

axe-pipelines-samples

Overview

Pipelines

Pipelines

Releases

Jobs

← Jobs in run #202...

[failing example] csharp-selenium-webdriver-sample

Job win-chrom 1m 30s

- Initialize job 3s
- Checkout 4s
- install .NET Core 13s
- dotnet restore 34s
- dotnet test 33s
- Component Det <1s
- Post-job: Check <1s
- Finalize Job <1s

dotnet test

Results File: d:\a_temp\VssAdministrator_fv-az130_2020-01-15_21_50_38.trx

Test Run Failed.

Total tests: 4

Passed: 3

Failed: 1

Total time: 22.5409 Seconds

##[error]Error: The process 'C:\hostedtoolcache\windows\dotnet\dotnet.exe' failed with exit code 1

Info: Azure Pipelines hosted agents have been updated to contain .Net Core 3.x SDK/Runtime along with the .NET Core 3.x runtime.

Some commonly encountered changes are:

If you're using `Publish` command with -o or --Output argument, you will see that the output folder is now relative to the root of your repository.

##[error]Dotnet command failed with non-zero exit code on the following projects : d:\a\1\s\csharp-dotnet-test\src\csharp-dotnet-test.csproj

Async Command Start: Publish test results

Publishing test results to test run '16690'.

TestResults To Publish 4, Test run id:16690

Test results publishing 4, remaining: 0. Test run id: 16690

Published Test Run : https://dev.azure.com/accessibility-insights/axe-pipelines-samples/_TestManagement

Async Command End: Publish test results

Finishing: dotnet test

View raw log

...

<https://github.com/microsoft/axe-pipelines-samples>

A axe-pipelines-samples +

Overview

Pipelines

Builds

Releases

Library

Task groups

Deployment groups

Compliance

✓ #20190802.1: Bump lodash in /typescript-selenium-webdriver-sample (#49)

Triggered aug 1 at 6:00 pm for dependabot[bot] ⚡ microsoft/axe-pipelines-samples ➔ master ⚡ 1ffaaba

Release

Artifacts

⋮

Logs Summary Tests Scans

Summary

1 Run(s) Completed (1 Passed, 0 Failed)

4

Total tests
+44 ● Passed
0 ● Failed
0 ● Others

100%

Pass percentage
↑ 100%

14s 240ms

Run duration ⓘ
↑ +14s 240ms

Test run Column Options

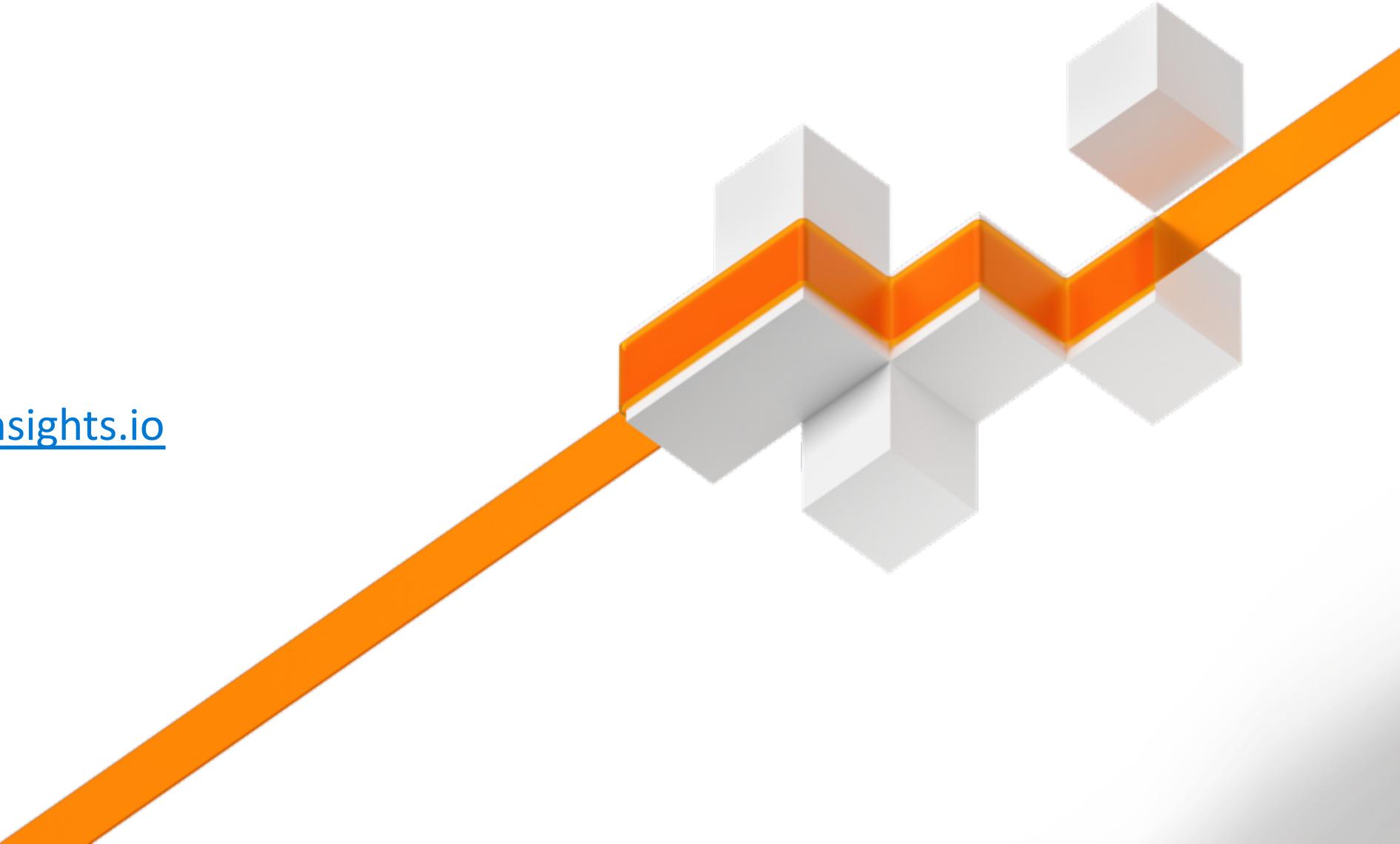
Filter by test or run name

Tags Test file Owner Outcome

Test	Duration	Failing since	Failing build	Tags
✓ ✓ typescript-selenium-webdriver-sample (4/4)	0:00:14.240			
✓ index.html has no accessibility violations in the h1 element	0:00:08.657			
✓ index.html has no accessibility violations outside of the known example violations	0:00:00.290			
✓ index.html has only those accessibility violations present in snapshot	0:00:00.290			
✓ index.html has only accessibility issues stored in our snapshot corresponding to only wcag2a and w	0:00:00.276			

Demo

<https://accessibilityinsights.io>



BeAccessible

exclude known inaccessible subtree

check known inaccessible page

check known accessible subtree

cucumber

mixes the DSL into World (PENDING: Not yet implemented)

Axe::DSL

can be mixed in (PENDING: Not yet implemented)

can be used directly (PENDING: Not yet implemented)

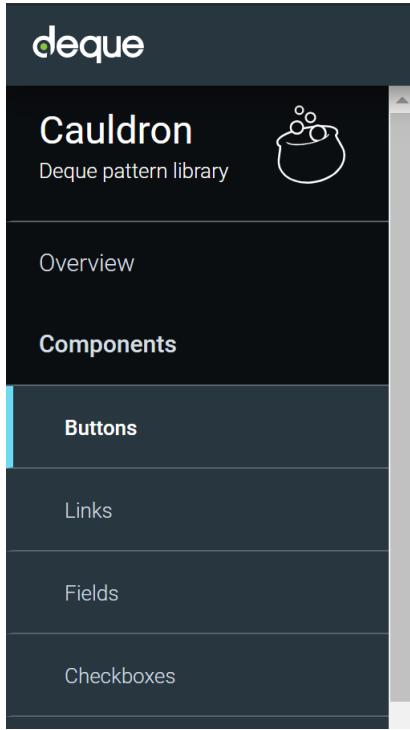
axe-matchers

using minimal Selenium-Webdriver setup (using firefox)

```
2
3  Background:
4    Given I am a visitor
5    When I visit "http://abcdcompute.tech.dequeCloud.com/"
6
7    # The steps for the following scenarios are provided by the axe-matchers gem
8
9  Scenario: Test whole page (known to be inaccessible, should fail)
10    Then the page should not be accessible
11
12 Scenario: Test working sub-tree (should pass)
13    Then the page should be accessible within "#intro"
14
15 Scenario: Test broken sub-tree (known to be inaccessible)
16    Then the page should not be accessible within "#topbar"
17
```

<https://github.com/dequelabs/axe-matchers>

Pattern libraries



The screenshot shows the 'Buttons' section of the deque Cauldron pattern library. The left sidebar lists components: Overview, Components, Buttons (selected), Links, Fields, and Checkboxes. The main content area has a heading 'Try it out' and two sections: 'Primary button' and 'Secondary button'. The 'Primary button' section contains text about its usage and a large blue button labeled 'PRIMARY'. The 'Secondary button' section contains text about its usage and a smaller grey button labeled 'SECONDARY'. Above the 'Primary button' section, there is a list of rules:

1. Buttons are used for terminal actions only.
2. Secondary buttons are always located to the right of a primary button.
3. See "Forms" and "Modals" sections for more information about specific rules on button usage.

<https://pattern-library.dequelabs.com/>

Team Practices

- Include Users with Disabilities in Research
- Communicate Design Intent
- Leverage a pattern library
- Leverage automated testing library
- Automate accessibility testing
- Measure progress
- Accessibility in retrospectives



Conclusion

1. Empathy
2. Shift Left
3. Automate



<https://aka.ms/for-all>



@rorypreddy