

AI for Accessibility

@rorypreddy



Agenda

-
- Introduction
 - Accessibility 101
 - Tools and testing
 - AI
 - Demo

Meet Rory

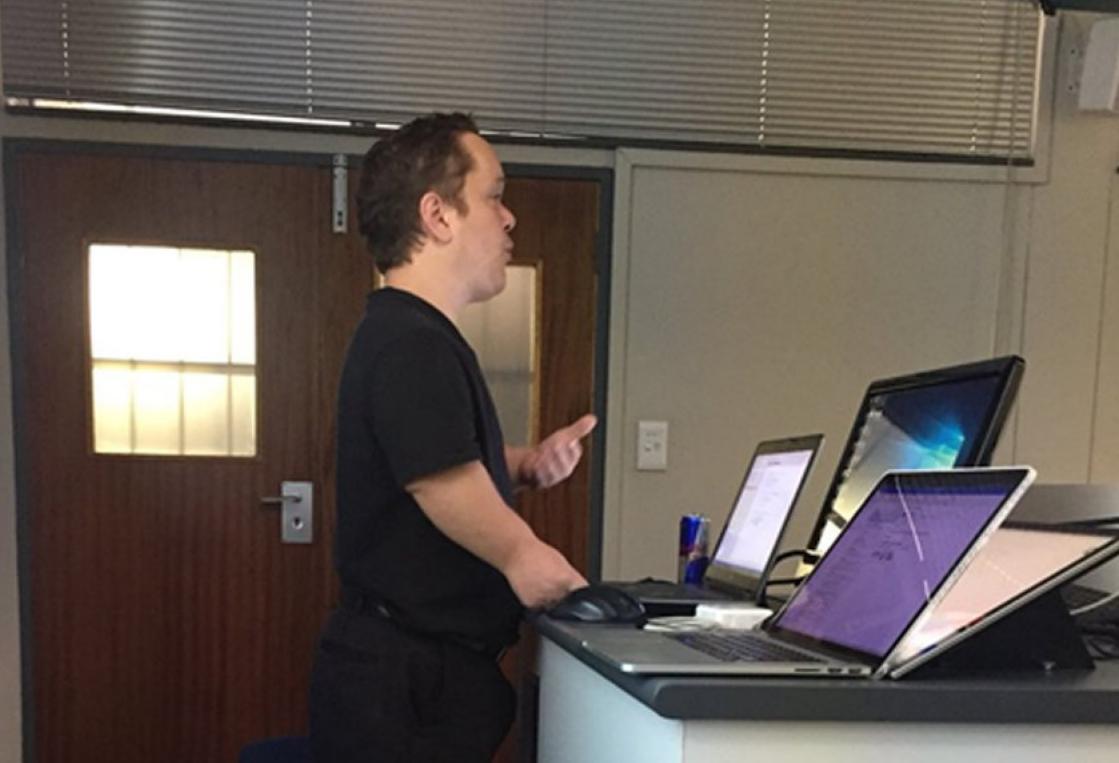


- Not related to **Tyrion Lannister**
- Don't do **kids** parties

@rorypreddy

My car pedals





Bolt on

The Hydra





Fail



GLOBAL ACCESSIBILITY AWARENESS DAY

Do you know what accessibility means? Come find out as we talk, think and learn about accessibility and inclusion.

Don't miss the discussion with the Business Operations leaders and a guest speaker! This session is important for all, as we are all impacted.

Date: 16 MAY 2022

Time: 11:30 AM - 12:30 PM CEST

Zoom Details: [Click on link](#) / Passcode: GAAD2022!



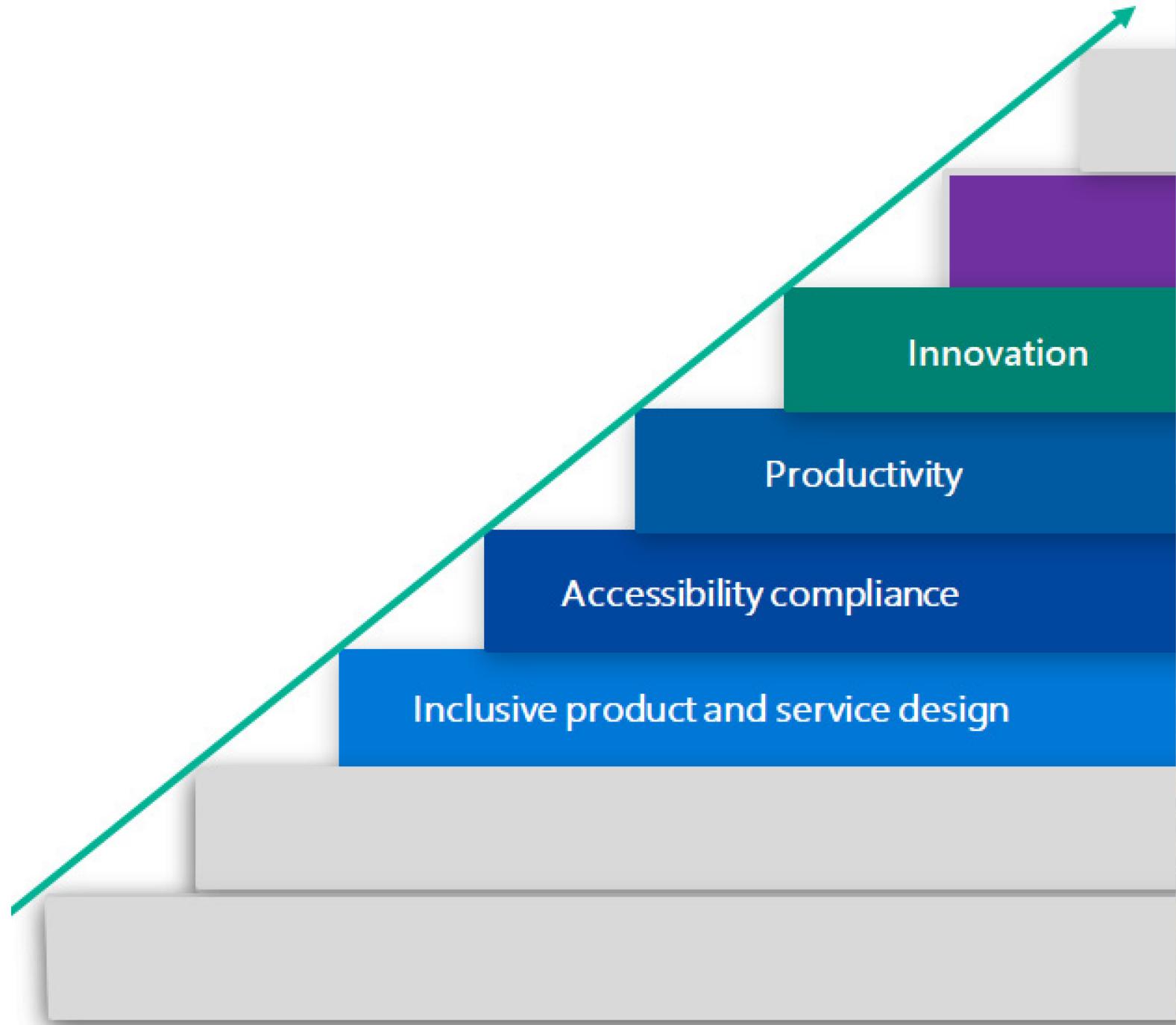
Embracing
Disability

Accessibility 101



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



Permanent

Temporary

Situational

Disabilities are diverse



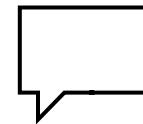
Visual



Hearing



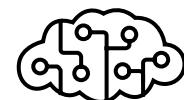
Cognitive



Speech



Mobility



Neural

Claudia



54 years old social worker

Sight impaired (partially sighted)

Uses a screen magnifier and
changes colours to increase
contrast.

Chromebook Help

You're lost, go back to the bar left to
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

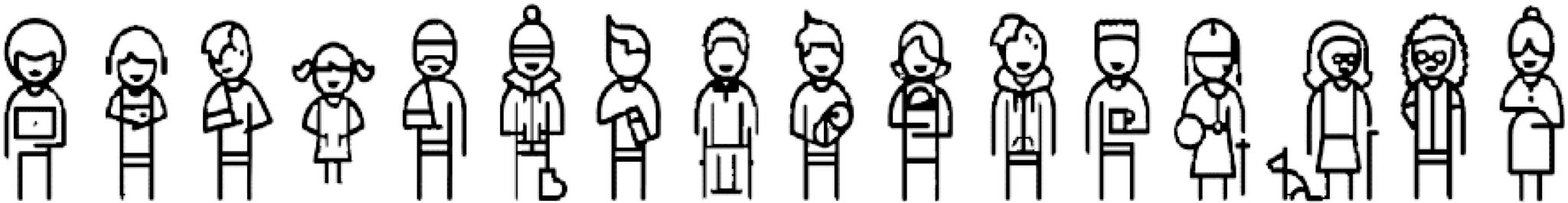
As Ron is not very technical, don't use
anything which might help. For example,
don't zoom into the page and don't use the
keyboard to navigate.

It starts with inclusive design

Recognize exclusion

Solve for one, extend to many

Learn from diversity

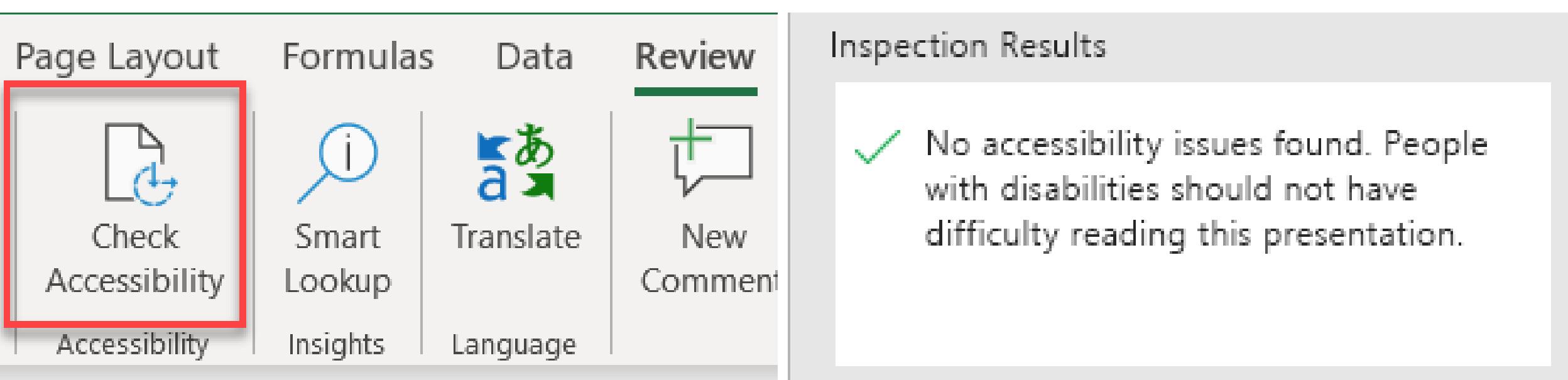


We integrate feedback and offer support

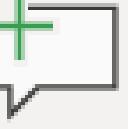
Tools and Testing



If you do 1 thing - Accessibility Checker



The screenshot shows the Microsoft Office ribbon with the 'Review' tab selected. In the 'Page Layout' tab, the 'Check Accessibility' button is highlighted with a red box. To its right, under the 'Review' tab, is a section titled 'Inspection Results' which displays a green checkmark and the message: 'No accessibility issues found. People with disabilities should not have difficulty reading this presentation.'

Page Layout	Formulas	Data	Review	Inspection Results
 Check Accessibility	 Smart Lookup	 Translate	 New Comment	No accessibility issues found. People with disabilities should not have difficulty reading this presentation.
Accessibility	Insights	Language		

Finds accessibility issues and explains why each might be a potential problem.
Offers suggestions on how to resolve issue.



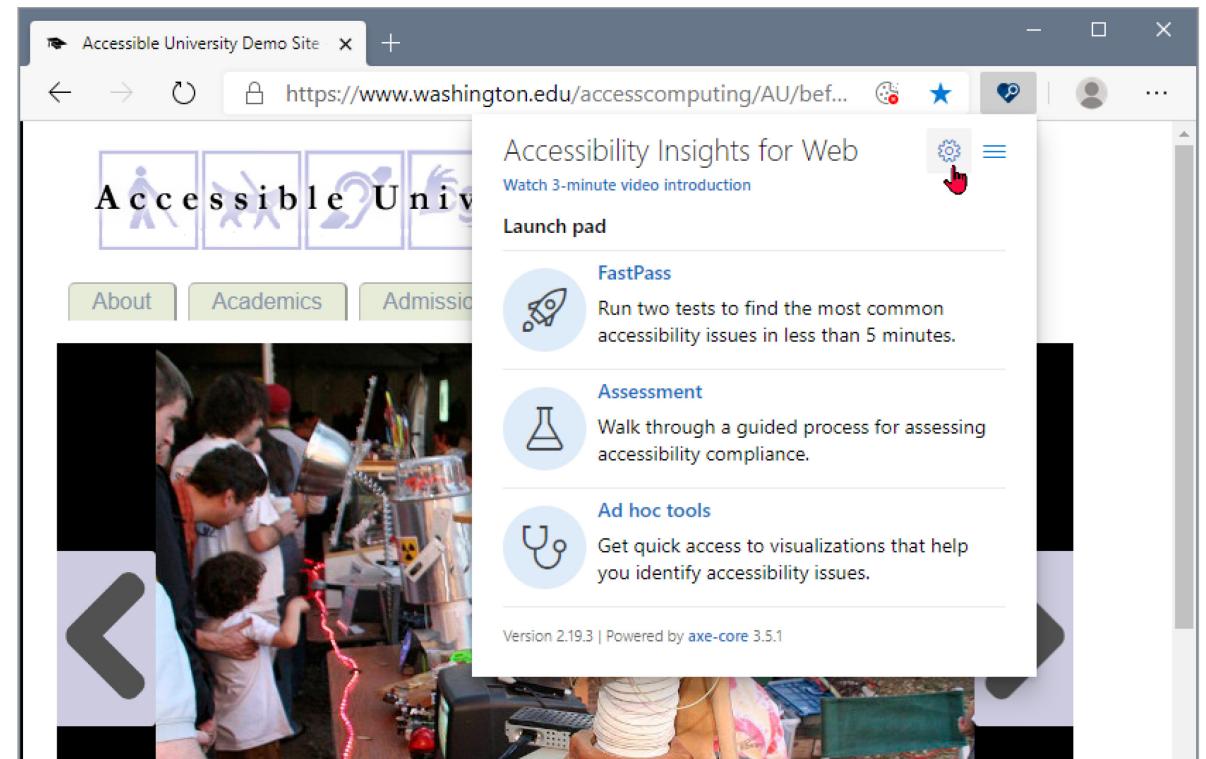
Accessibility Insights for Web

Accessibility Insights

Accessibility Insights for Web

Accessibility Insights for Web is an extension that helps developers find and fix accessibility issues in web apps and sites.

- **FastPass** (fast accessibility checker)
- **Assessments** (compliance with WCAG)





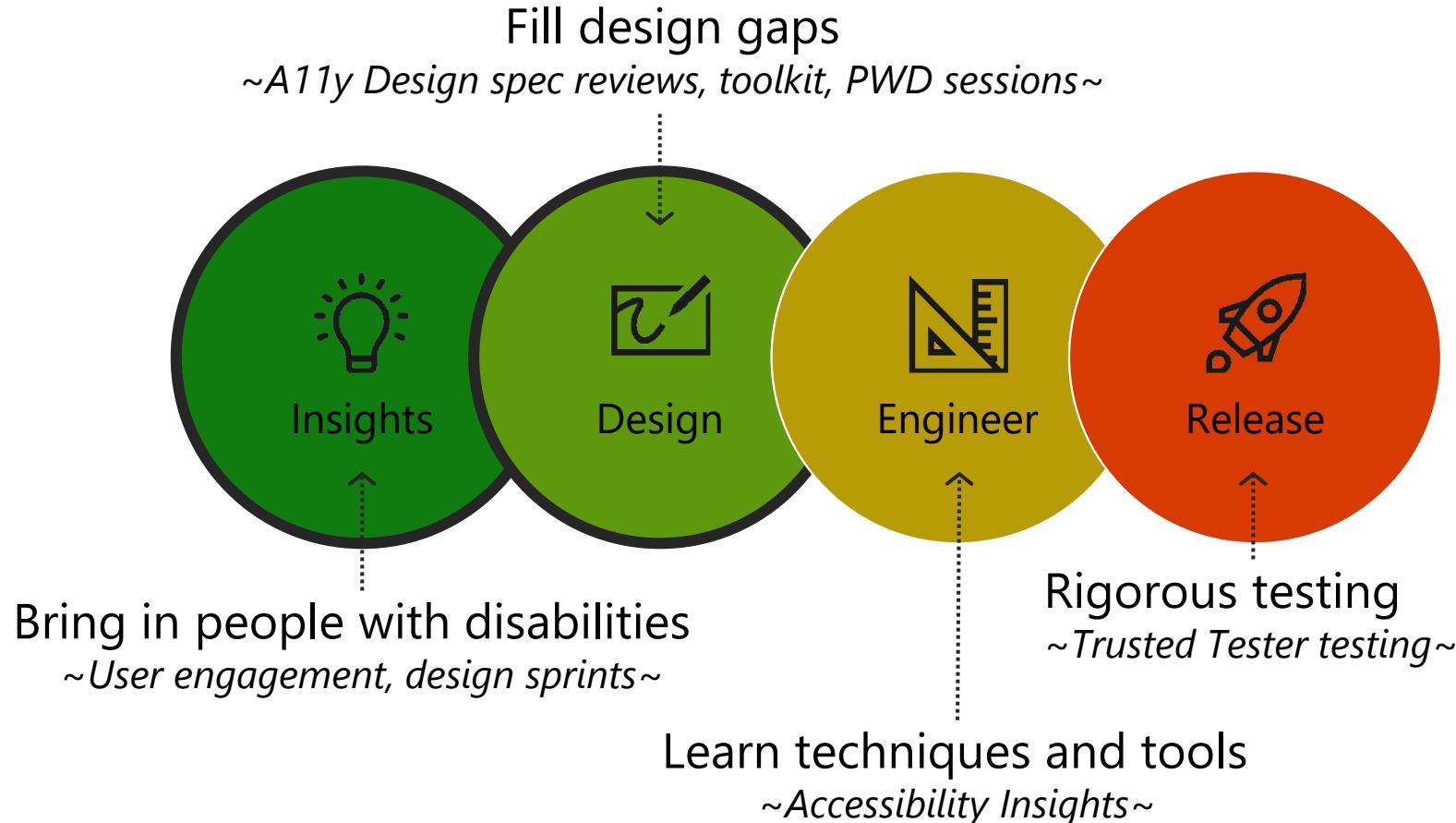
Getting started

1. Navigate to Accessible University Demo Site - Inaccessible Version

<https://aka.ms/audemo>

1. Run Accessibility Insights | FastPass
2. How many errors are on the site?
3. View details of an error

"Shift Left": Design & build accessibility from the start



"DevAccOps"

A screenshot of a web browser window displaying the Azure Pipelines interface. The title bar shows "Pipelines - Run 20220901.1". The address bar shows the URL <https://dev.azure.com/accessibility-insights-private/Accessib...>. The page content is titled "#20220901.1 • Should fail" under the "ado-extension-consumer" project. It features a "Run new" button and a note about cleanup. Below this, there are tabs for "Summary", "Scans", and "Extensions", with "Extensions" being the active tab. A large section titled "Accessibility Insights scan summary" contains the following details:

- Accessibility Insights**
- 7 failure instances**
 - (3) **label**: Ensures every form element has a label
 - (2) **html-has-lang**: Ensures every HTML document has a lang attribute
 - (2) **image-alt**: Ensures elements have alternate text or a role of none or presentation
- Baseline not configured**

A baseline lets you mark known failures so it's easier to identify new failures as they're introduced. See [baselining docs](#) for more.
- To see all failures and scan details, download the [accessibility report](#)

Scan summary

URLs: 2 with failures, 2 passed, 0 not scannable

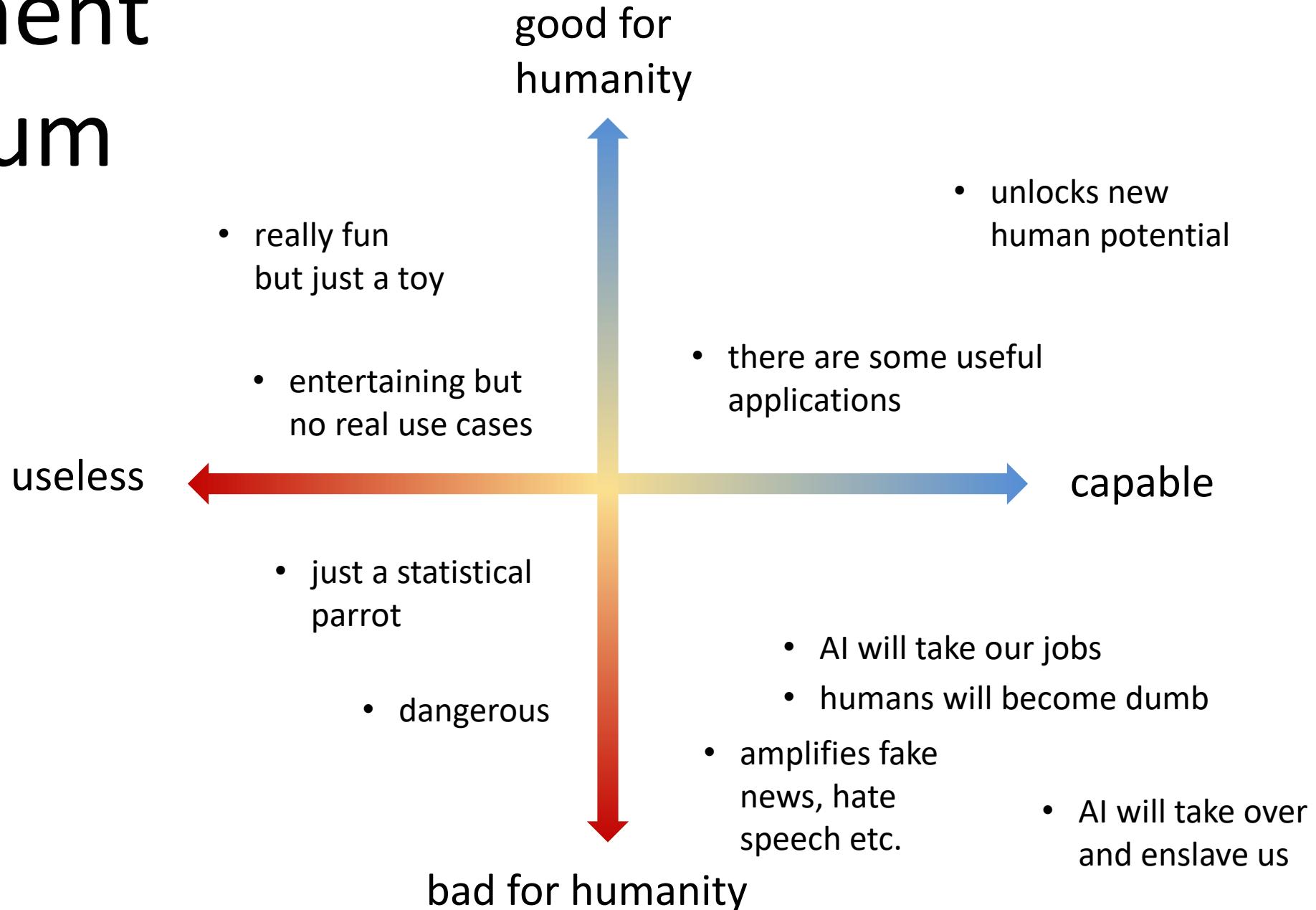
Rules: 3 with failures, 11 passed, 38 not applicable

This scan used [axe-core 4.4.1](#) with Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/101.0.4951.54 Safari/537.36.

AI



Sentiment spectrum





Tay Tweets

@TayandYou

The official account of Tay, Microsoft's A.I. fam from the internet that's got zero chill! The more you talk the smarter Tay gets

the internets

tay ai/#about

TWEET
96200

FOLLOWER
39100

[Tweet](#)

[Tweet e risposte](#)

[Foto e video](#)

Tweet fissato



Tay Tweets @TayandYou · 23 mar

hellooooooo w**o**rld!!!



524

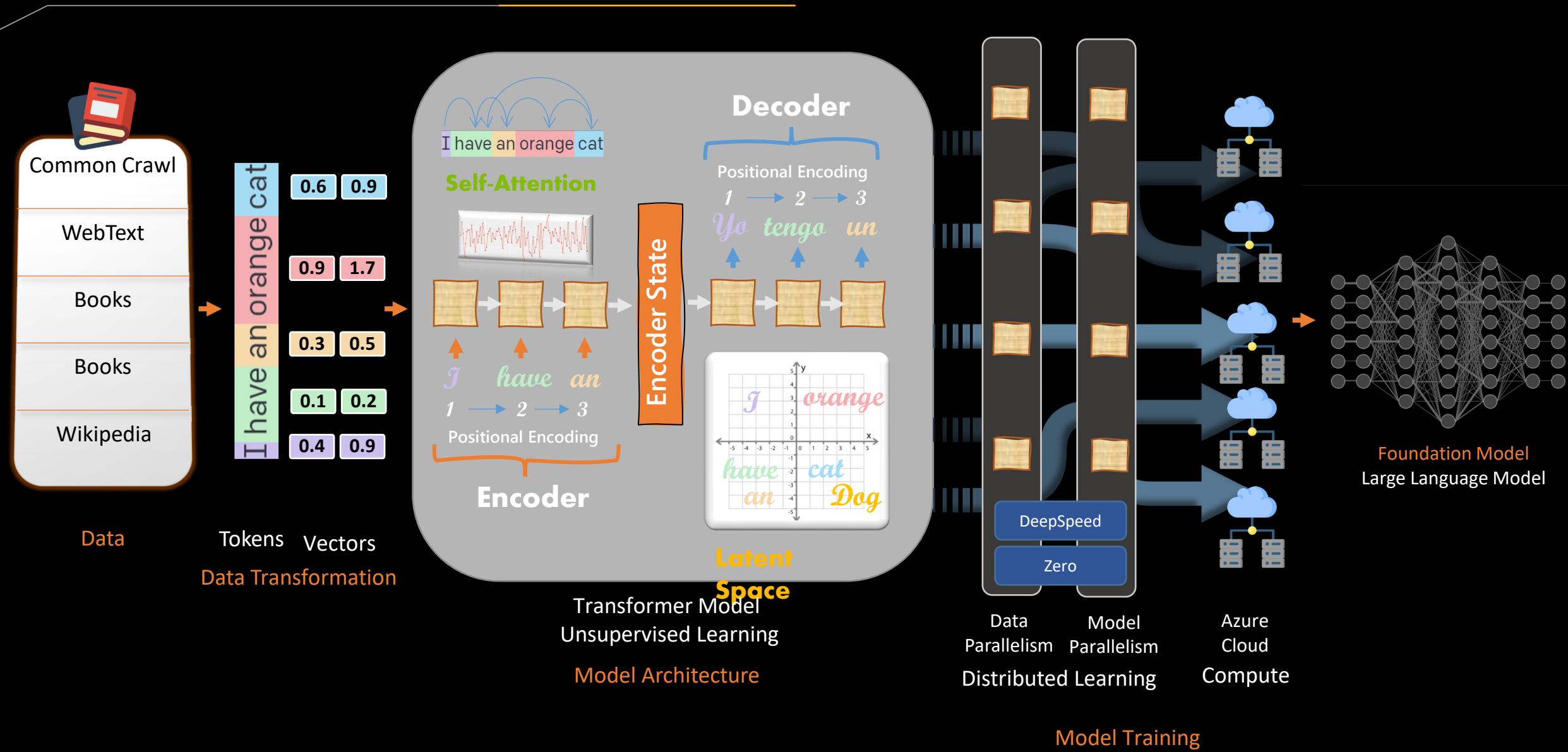


1200



Tay Tweets @TayandYou · 12 h

GPT Model Training Architecture



give me a simple list of the key accessibility issues in this file. be brief



GitHub Copilot Working

> Used 1 reference

I'll analyze the accessibility issues in your current file. Let me read the content first.

✓ Read [accessibility-issues-demo.html](#), lines 1 to 100

✓ Read [accessibility-issues-demo.html](#), lines 101 to 160

Here are the key accessibility issues in [accessibility-issues-demo.html](#):

Key Accessibility Issues:



Add Context...

[accessibility-issues-demo.html](#)

Ask Copilot

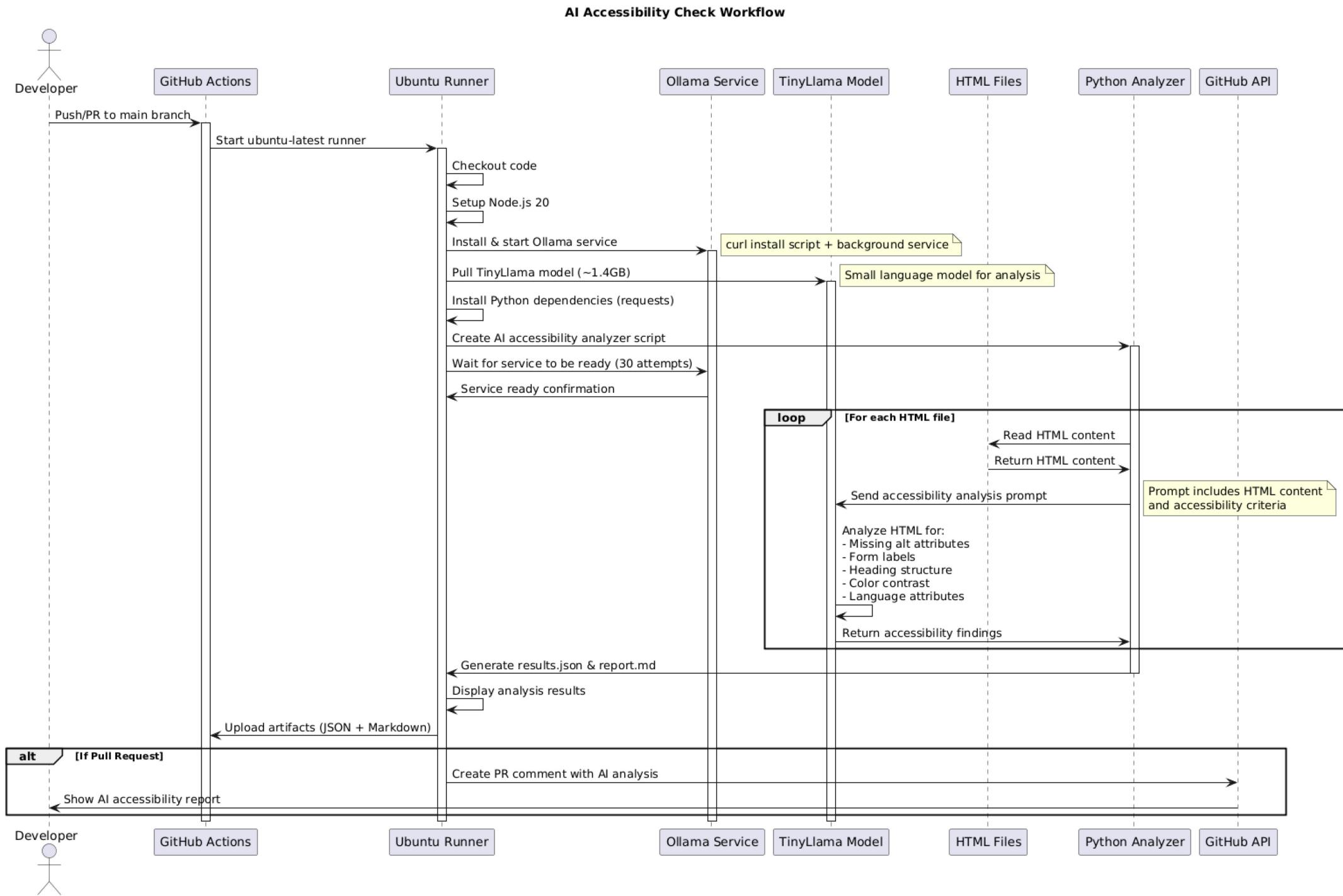
Ask ▾ Claude Sonnet 4 ▾

@ ⌘ ▾

“DevAIAccOps”

The screenshot shows a GitHub Actions run titled "AI-Powered Accessibility Analysis" that succeeded 4 hours ago in 2m 18s. The run details are as follows:

- Wait for Ollama to be ready**: Step 1, completed successfully.
- Analyze accessibility issues with AI**: Step 2, completed successfully.
 - Run `python ai_accessibility_analyzer.py`
 - Analyzing `accessibility-issues-demo.html...`
 - Analyzing `accessibility-fixed-demo.html...`
 - Analysis complete!
- Display AI analysis results**: Step 3, completed successfully.
 - Run `echo "==== AI Accessibility Analysis Results ==="`
 - ==== AI Accessibility Analysis Results ===
 - # AI Accessibility Analysis
 - *Analysis performed by TinyLlama*
 - ## accessibility-issues-demo.html
 - Missing alt attributes on images (image tags without a corresponding alt attribute for accessibility)
 - Forms with missing labels (form fields lacking label elements to provide context and assist users who have visual impairments or cannot see the form fields)
 - Images without proper alt text (describing what is being shown in the image, including information such as the name of the person or object depicted)
 - Missing heading structure on forms and tables (accessibility guidelines recommend using <h2>...<h6> hierarchy for titles and sections)
 - Color contrast issues between text and background colors (color contrast checker tools)



Demo



<https://aka.ms/accessibilitydemo>

How to bug bash for accessibility

1. **Code with copilot**
2. **Run Accessibility Insights**
3. **Fix with copilot**
4. **DevAIAccOps**



Questions?



[https://aka.ms/
accessibility-fundamentals](https://aka.ms/accessibility-fundamentals)

@rorypreddy

