

Building Accessible Apps with .NET MAUI

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<https://aka.ms/discord-maui> > #maui-accessibility

The Case for Accessibility

- Over 1 billion people currently experience some form of disability
- Designing for accessibility is not limited to people experiencing disabilities – the best solutions benefit everyone
 - Voice assistants on GPS
 - Closed captioning on videos
 - Raise hand feature on Microsoft Teams
 - Dark mode on devices
 - Dropped curbs on sidewalks and driveways
- Huge business opportunity – hundreds of billions
- Growing number of legal consequences

Approaching Accessible Apps

- Web Content Accessibility Guidelines (WCAG)

- Global accessibility standard and legal benchmark for both web and mobile
- 4 principles

Perceivable

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

- Text alternatives
- Time-based media
- Adaptable
- Distinguishable

Operable

User interface components and navigation must be operable.

- Keyboard accessible
- Time limits
- Seizures and physical reactions
- Navigable
- Input modalities

Understandable

Information and the operation of user interface must be understandable.

- Readable
- Predictable
- Input assistance

Robust

Content must be robust enough that it can be interpreted by ...assistive technologies.

- Compatible




























<https://www.w3.org/WAI/standards-guidelines/wcag/>

Approaching Accessible Apps

- **Empathy** is the name of the game
- Explore accessibility settings and features
 - Screen readers
 - TalkBack on Android
 - VoiceOver on iOS
 - Narrator on UWP
- Research accessibility models and APIs
- Test and leverage available tools/resources



With .NET MAUI,
you'll be able to
create accessible
apps more
seamlessly than
ever before

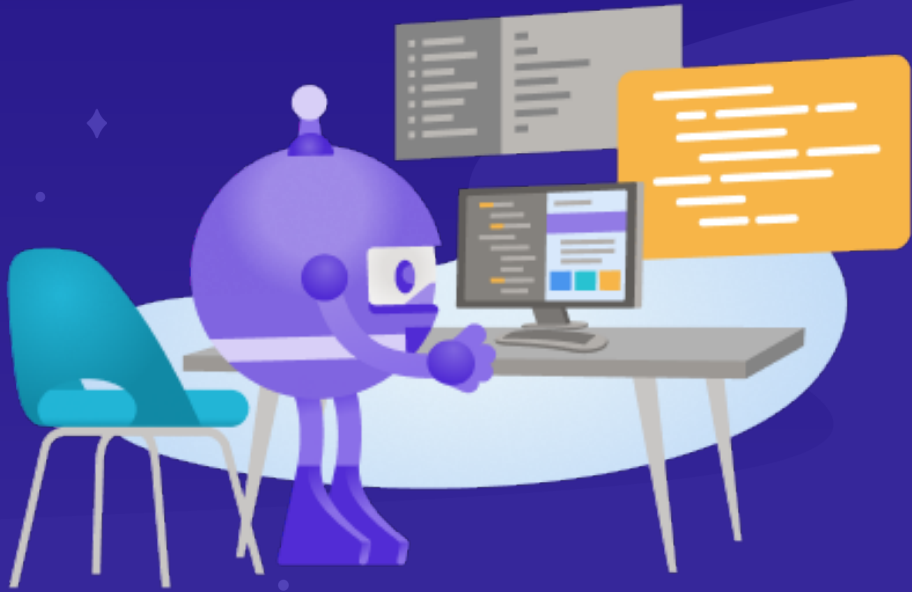
<input type="checkbox"/>	 Fix heading bug and templates semantics 	area/a11y
	#2069 by rachelkang was merged 16 days ago • Approved	
<input type="checkbox"/>	 Apply Accessibility traits to controls that have TapGestureRecognizers 	area/a11y
	#1886 by PureWeen was merged on Aug 2 • Approved 1 of 18 tasks 6.0.100-preview.7	
<input type="checkbox"/>	 Fix traits on Checkbox so they are settable 	area/a11y
	#1836 by PureWeen was merged on Jul 28 • Approved 1 of 18 tasks	
<input type="checkbox"/>	 Add traits to iOS Checkbox so it reads as Switch 	area/a11y
	#1832 by PureWeen was merged on Jul 27 • Approved 1 of 18 tasks	
<input type="checkbox"/>	 Introduce SetSemanticFocus API via SemanticExtensions 	area/a11y
	#1829 by PureWeen was merged on Jul 28 • Approved 6.0.100-preview.7	
<input type="checkbox"/>	 Introduce AutomationProperties.ExcludedWithChildren 	area/a11y
	#1815 by rachelkang was merged on Jul 27 • Approved 6.0.100-preview.7	
<input type="checkbox"/>	 Delete all the TabIndex, TabStop, Focusable things! 	area/a11y
	#1777 by rachelkang was merged on Jul 23 • Approved 6.0.100-preview.7	
<input type="checkbox"/>	 Font AutoScalingEnabled  	area/a11y
	#1774 by PureWeen was merged on Jul 24 • Approved	
<input type="checkbox"/>	 Introduce Announce method in Essentials 	area/a11y
	#1760 by rachelkang was merged on Jul 23 • Approved 6.0.100-preview.7	
<input type="checkbox"/>	 Update semantics 	area/a11y
	#1039 by rachelkang was merged on Jun 10 • Approved 18 tasks	
<input type="checkbox"/>	 Create semantics page 	area/a11y
	#679 by rachelkang was merged on Apr 8 • Approved 2 of 7 tasks	
<input type="checkbox"/>	 Semantics and some structure changes 	area/a11y
	#635 by PureWeen was merged on Apr 6 • Approved 17 tasks	
<input type="checkbox"/>	 Add AutomationId to IView 	area/a11y
	#491 by PureWeen was merged on Mar 12 • Approved 10 of 12 tasks	

Accessibility in .NET MAUI

- SemanticProperties (new)
 - `SemanticProperties.Description`
 - `SemanticProperties.Hint`
 - `SemanticProperties.HeadingLevel`
- SemanticExtensions (new)
 - `SetSemanticFocus`
 - `UpdateSemantics` / `UpdateSemanticNodeInfo`
- SemanticScreenReader (new)
 - `SemanticScreenReader.Announce`
- AutomationProperties (from Xamarin.Forms)
 - `AutomationProperties.ExcludeWithChildren`

Accessibility in .NET MAUI

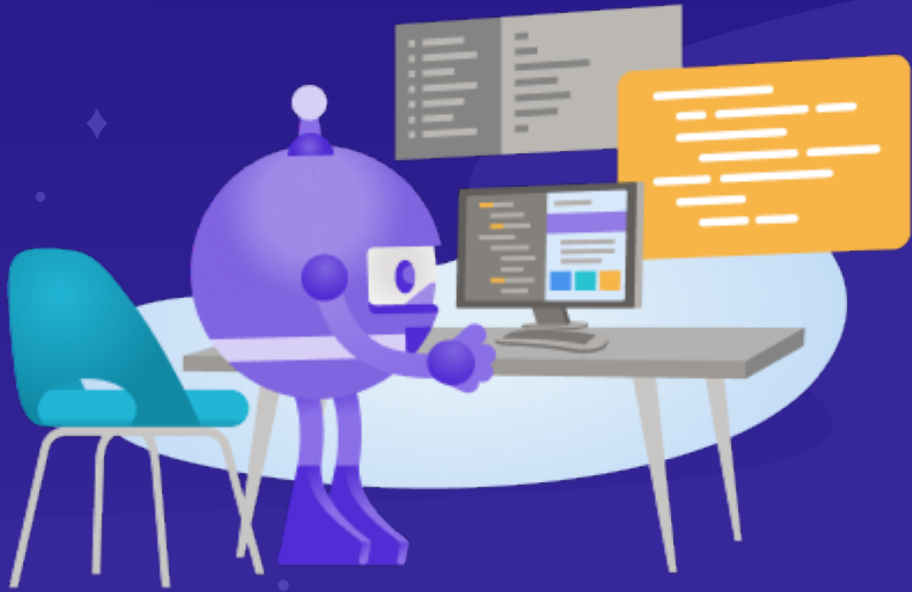
- Fonts
 - Scales with device settings on Android *and* iOS
 - FontAutoScalingEnabled property
- Checkbox
 - iOS accessibility as a Switch
- Removed TabIndex / TabStop
- Accessibility validation
 - Recipes app
- Constantly looking for ways to improve



Demo time!

Accessibility APIs in Xamarin.Forms + XCT

- Xamarin.Forms
 - “Accessibility_Experimental” flag
- Xamarin Community Toolkit
 - SemanticEffects
 - SemanticEffect.Description
 - SemanticEffect.Hint
 - SemanticEffect.SemanticInclusion
 - SemanticInclusion.Include
 - SemanticInclusion.Exclude
 - SemanticInclusion.ExcludeWithChildren
 - SemanticOrderView



Demo time!

Stay tuned for more!

- Accessibility blog post series <https://devblogs.microsoft.com/xamarin/>
- Discord <https://aka.ms/discord-maui> > **#maui-accessibility**

The Journey to Accessible Apps



April 14th, 2021

No matter what stage of the app development process you're at, and no matter your level of familiarity with developing inclusive apps, it is always the right time to make your apps more inclusive. Get started on your journey to developing inclusive apps today.

Ensuring your apps are inclusive has wide implications. It involves making sure that your app appeals to audiences of all different identities – of age, gender, ethnicity, ability, education, and so much more. It involves making sure all your app's users are granted an equitable user experience. It involves executing proper customer validation and working with a representative team.

With all these moving parts, it can be tough to know where to start – but fear not!

You can start here, with accessibility, today.

The Journey to Accessible Apps: Screen Readers



May 24th, 2021

at you're reading in at least one of the following ways:

individual
s like screen readers
like refreshable braille displays

n reduce technological barriers that individuals may
le individuals experiencing disabilities to accomplish tasks,
serve the needs of individuals in different situations. Assistive
thers, they include screen readers and screen magnification
s with visual impairments), as well as alternative keyboards
pecially helpful for individuals with motor impairments).

The Journey to Accessible Apps: Making Visual Text Accessible



August 19th, 2021

reen readers, a key assistive technology that provides an
ce for app users. While screen readers may entirely replace the
portant to remember that they are complementary in many
ace must be accessible to the wide range of sighted users, even
sistive tools.

g this example.

Thank you!



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