

To make the world's information universally accessible and useful

# Android for Everyone

## Accessibility in Mobile

...



*SierraOBryan*  
S I E R R A O B R Y A N (S H E / H E R)

 @\_sierraOBryan

Make Tech Inclusive.  
Make Inclusive Tech.

Kim Arnett [@kaydacode](#)

More  
users!

Risk  
Management

WHY?

Better for  
Everyone

The right  
thing to do

Accessibility is not only a  
“nice” thing to do, your app  
quality increases as you make  
it more accessible.

Victoria Gonda [@ttgonda](#)

# Types of Disabilities

- Motor Impairments
  - May use a hardware device - Accessibility Switch - to control the app or accessibility menu
- Cognitive Impairments
  - May use Action Blocks to set up routines
- Visual Impairments
  - May use increased text size, Braille keyboard, or TalkBack
- Deaf and Hard of Hearing
  - May use Closed Captioning, Live Transcribe or Live Captioning

If you open your [accessibility settings](#), you'll find even more options that folks might use on their device

# What are the Web Content Accessibility Guidelines and why do they matter for mobile?

[Learn more](#)

# How to test your app for accessibility [Learn More](#)

- User and Manual testing
- Analysis Tools
  - Accessibility Scanner
  - UI Automator Viewer
  - Lint
- Automated Testing
  - Espresso and Robolectric



# Consistency



# Touch Targets [Learn More](#)

The recommended size for each interactive UI element's focusable area, or **touch target size**, is at least 48px by 48px.

This does **not** mean the UI element's visible area must be at least 48px by 48px.

This can be achieved with padding and height / width or minHeight / minWidth.

$$\text{paddingTop} + \text{height}/\text{minHeight} + \text{paddingBottom} \geq 48\text{dp}$$
$$\text{paddingStart} + \text{width}/\text{minWidth} + \text{paddingEnd} \geq 48\text{dp}$$

PS - what does minHeight do? Just adds padding to meet the required height

# Color Contrast [Learn more](#)

Slides: 5.88 : 1

AA Compliance requires at least a requires **4.5 : 1** for regular text and **3 : 1** for large text

**7.62 : 1**

**3.92 : 1**

**2.38 : 1**

How do I meet these requirements and stick to my theme?

Use [Material Color Palettes](#)!

How do I check my colors? There are lots of [tools](#) online!

# Labels (and hints) [Learn more](#)

The basics of adding labels is that each UI element in your app includes a description that describes the element's purpose.

We do this using `contentDescription` although we get some for free - we do not need to provide a description for `TextView` because Android Accessibility automatically announces the text as the description.

Some best practices: Use the right UI element, don't include the UI element in the description, descriptions should be unique, skip over decorative effects

Localized, Concise, descriptive

# There's a lot to think about with Labels

**Does it need a label? It depends but generally...**

TextView: No

Text Button: No

EditText: Include a hint

ImageButton: Yes

ImageView: Maybe

**Can it be skipped?**

Is it a decorator?

**Should it be grouped?**

Do they make  
more sense  
together?

**How will it be read?**

Does it include  
numbers or  
abbreviations?

# There are a lot of tools to help

There are many UI attributes to help build an accessible UI ([learn more](#))

```
labelFor  
screenReaderFocusable  
accessibilityHeading
```

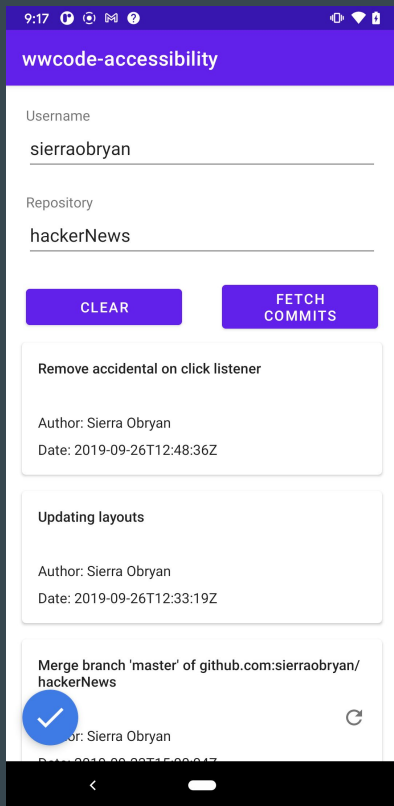
A [TtsSpan](#) is a special type of span that can pass in metadata to give contextual information about the string. This information can help Text to Speech correctly pronounce a text element

123456789    TYPE\_DIGIT

“1 hundred 23 million 4 hundred 56 thousand 7 hundred 89” vs  
“1 2 3 4 5 6 7 8 9 ”

# Think about (different) Displays [Learn more](#)

Normal



9:17

wwcode-accessibility

Username  
sierraobryan

Repository  
hackerNews

CLEAR FETCH COMMITS

Remove accidental on click listener

Author: Sierra Obryan  
Date: 2019-09-26T12:48:36Z

Updating layouts

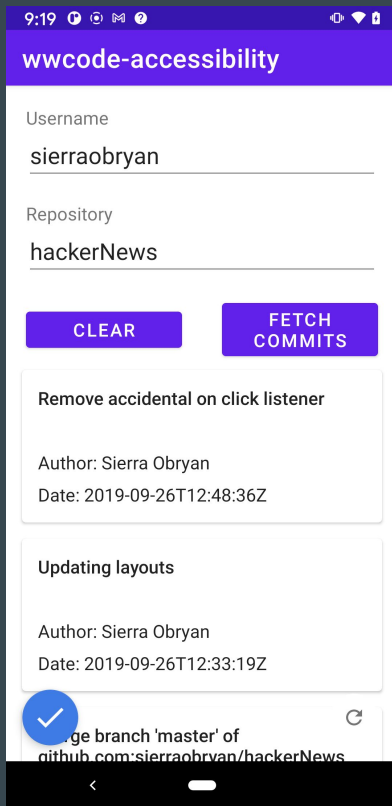
Author: Sierra Obryan  
Date: 2019-09-26T12:33:19Z

Merge branch 'master' of github.com:sierraobryan/hackerNews

✓

Author: Sierra Obryan  
Date: 2019-09-26T12:33:19Z

Large Text



9:19

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Updating layouts

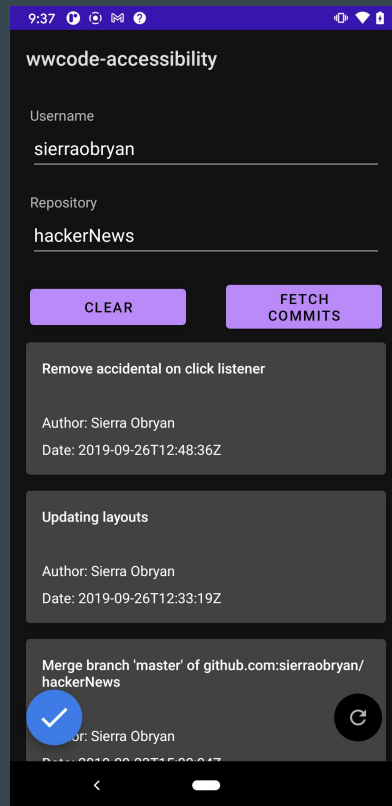
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✓

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Dark Mode



9:37

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# What else?

- Custom Views and Accessibility APIs
  - Swipe to delete
  - Actions
  - Spans with link
  - Custom Alerts
- Other Media



# What's next?

The Web Content Accessibility Guidelines are set to be updated in 2021

## what does that mean for mobile?

[Draft 1](#) was published in late January

## where do I learn more?

[Android Accessibility by Tutorials!](#) by Victoria Gonda

We talked about a lot of XML

## what about Jetpack Compose?

[Jetpack Compose: Accessibility](#)



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# Thank you!

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Where to find me?



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[www.sierraobryan.com](http://www.sierraobryan.com)

