

# Magic for everyone: How to make your app accessible



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# Bird's eye view of a11y



## What is accessibility?

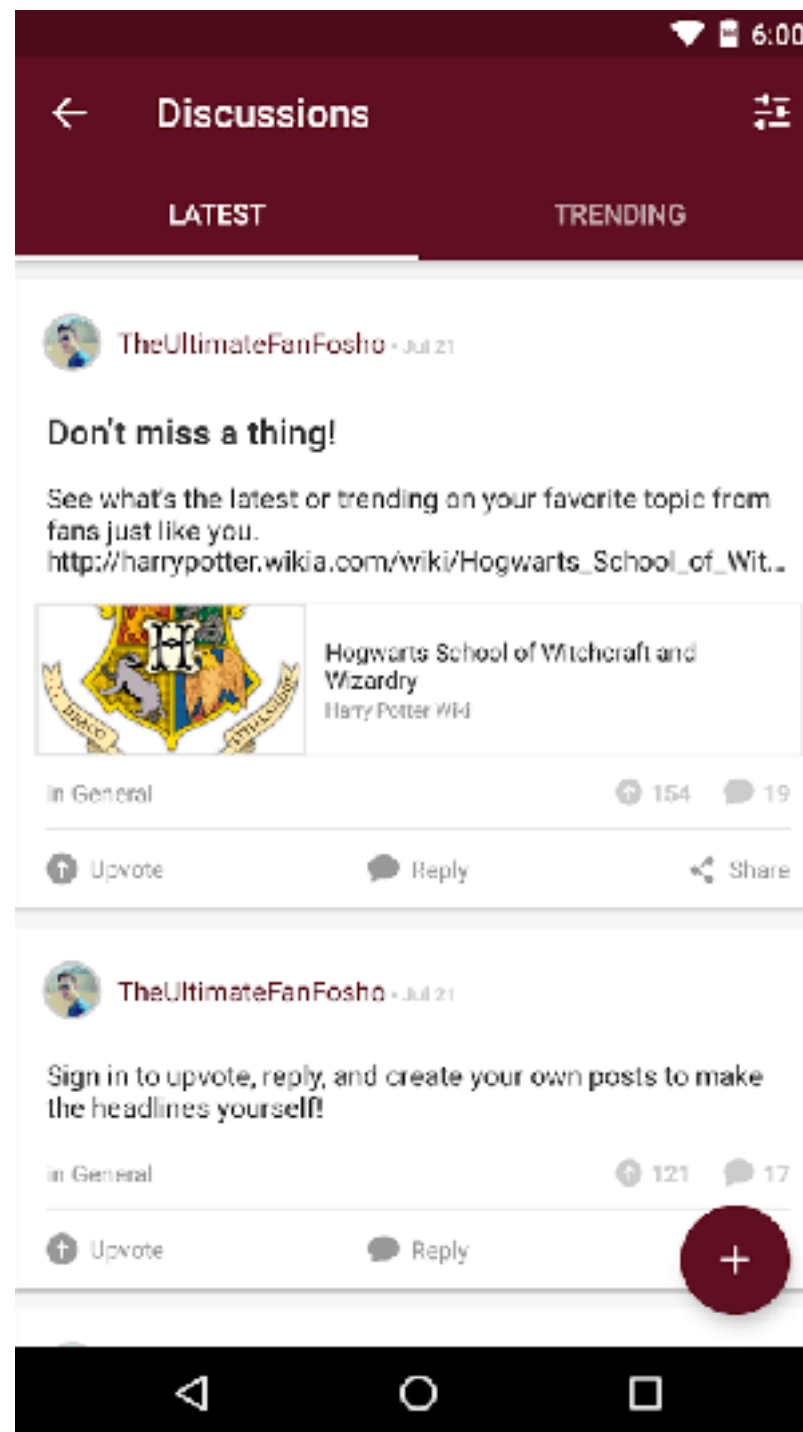
- **accessibility** (*adjective*)

1. easy to approach, reach, enter, speak with, or use.
2. that can be used, entered, reached, etc.

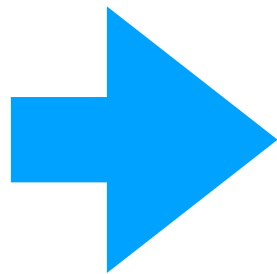
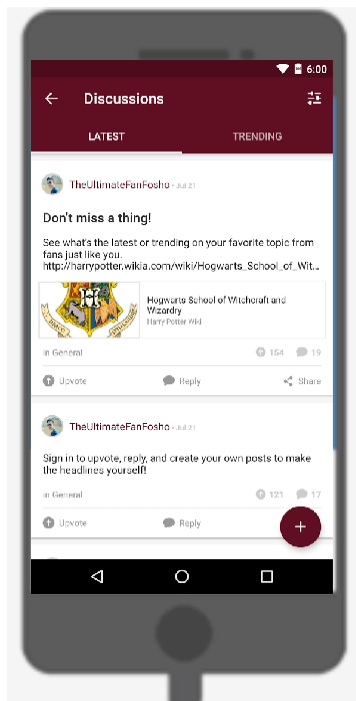
# Raise of hands!



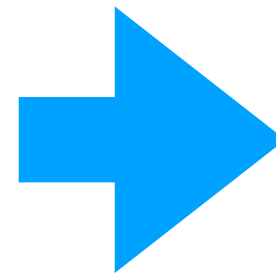
# How do users use your app?



# How do users use your app?



android



**Google Talkback**

8.0.0.247812625 for Android Google Inc.

4.1 ★★★★★ 28

Help for people with vision problems



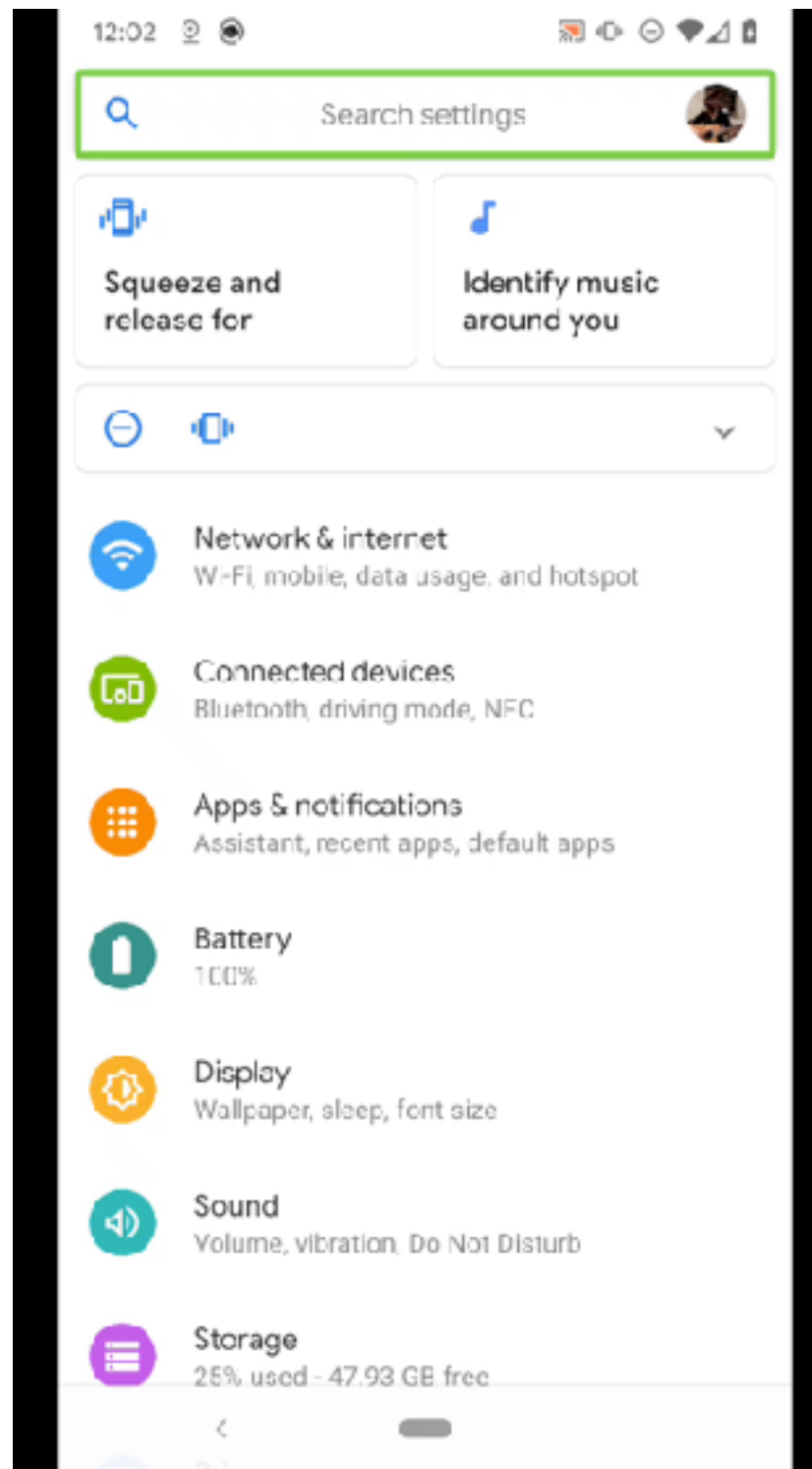
**Google BrailleBack**

0.97.0.229666838 for Android Google Inc.

Rate ★★★★★ 0



# Google TalkBack



# Accessibility guidelines

**WCAG = Web Content Accessibility Guidelines**

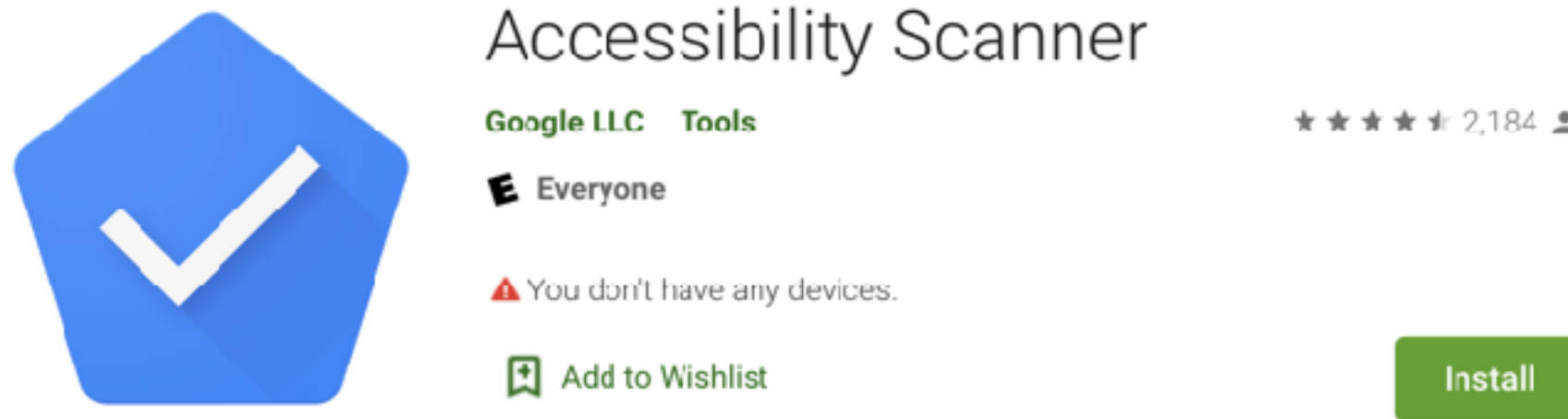
**Some of WCAG Level A standards:**

- Content Labeling
- Focus Order

**Some of WCAG Level AA standards:**

- Color Contrast (4.5:1)

# How do you discover a11y issues in your app?



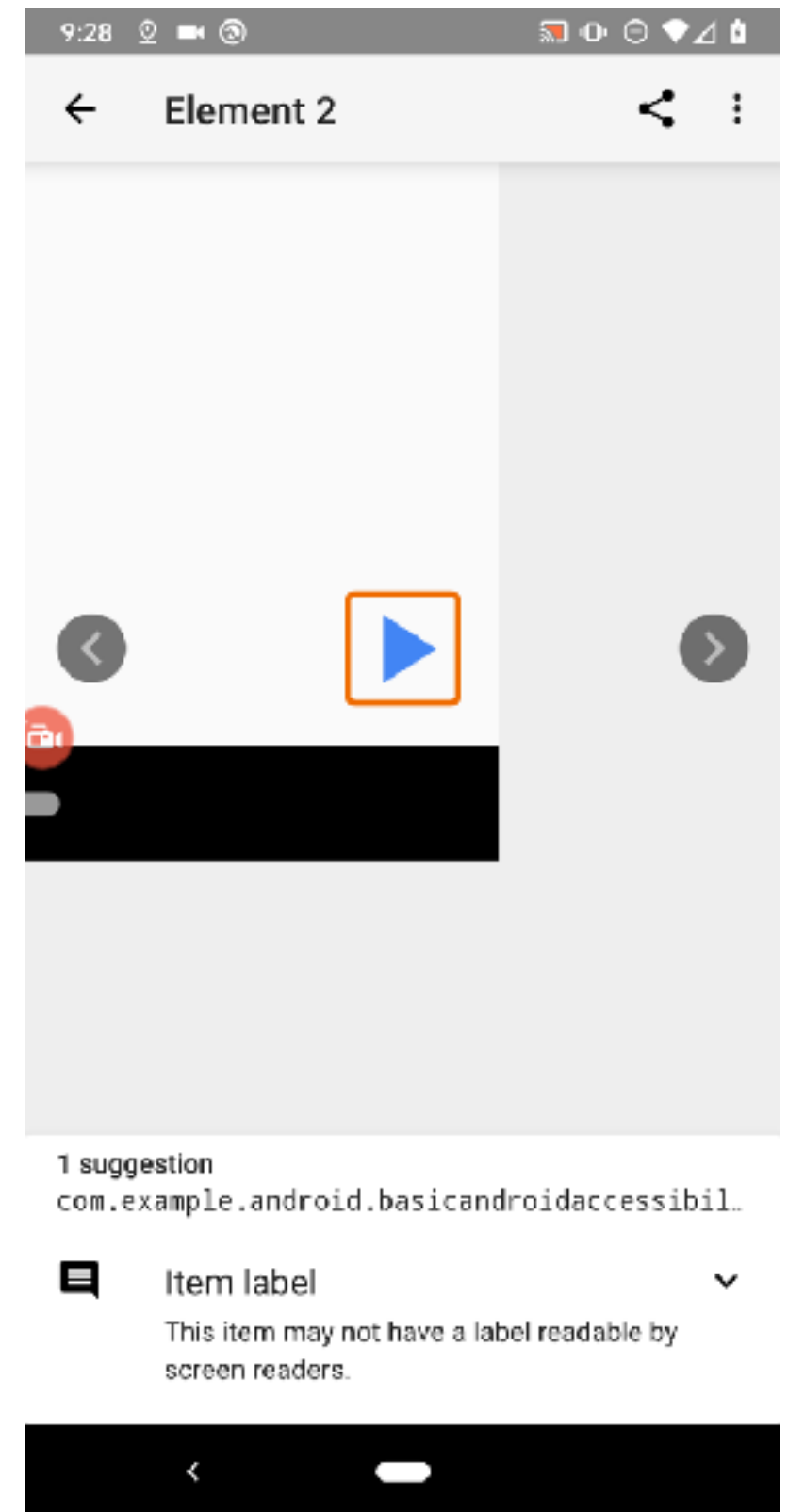
+

Google Play Console Pre-Launch report



# How do you fix a11y issues

- **Issue: Missing Content description (A)**



# How do you fix a11y issues

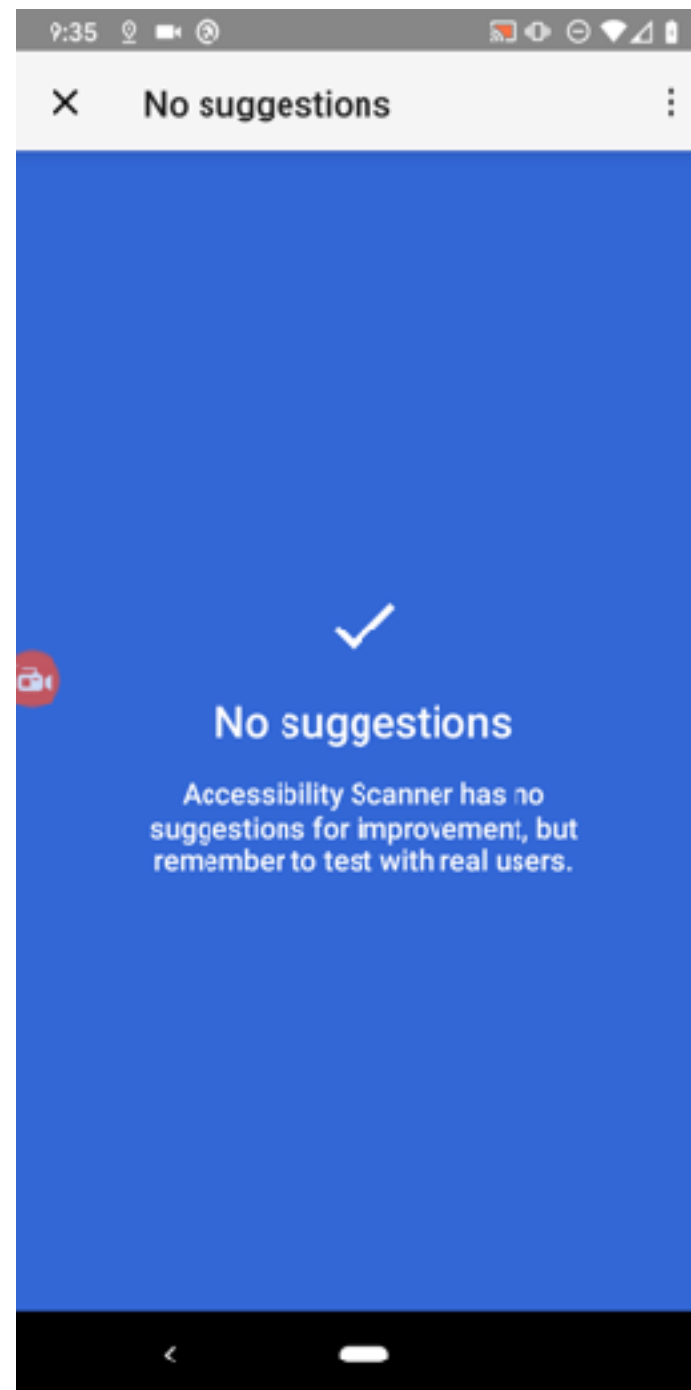
- XML

```
1 <ImageButton
2     android:id="@+id/header_image"
3     android:src="@drawable/headerImage"
4     android:contentDescription="@string/header_image_description"
5     />
```

- Kotlin

```
1 private fun updateContentDescription(contentDescription: CharSequence) {
2     titleView.contentDescription = contentDescription
3 }
```

# How do you fix a11y issues



# Pop quiz!

**How would you announce the friends/messages / notifications statuses to users?**



# How do you fix a11y issues

## **Issue: Localization issues and concatenation (A)**

- Accessibility descriptions should be concise
- Localization: “Friend requests. You have 1 new friend request.”
  - Ordering is different in different languages

# How do you fix a11y issues

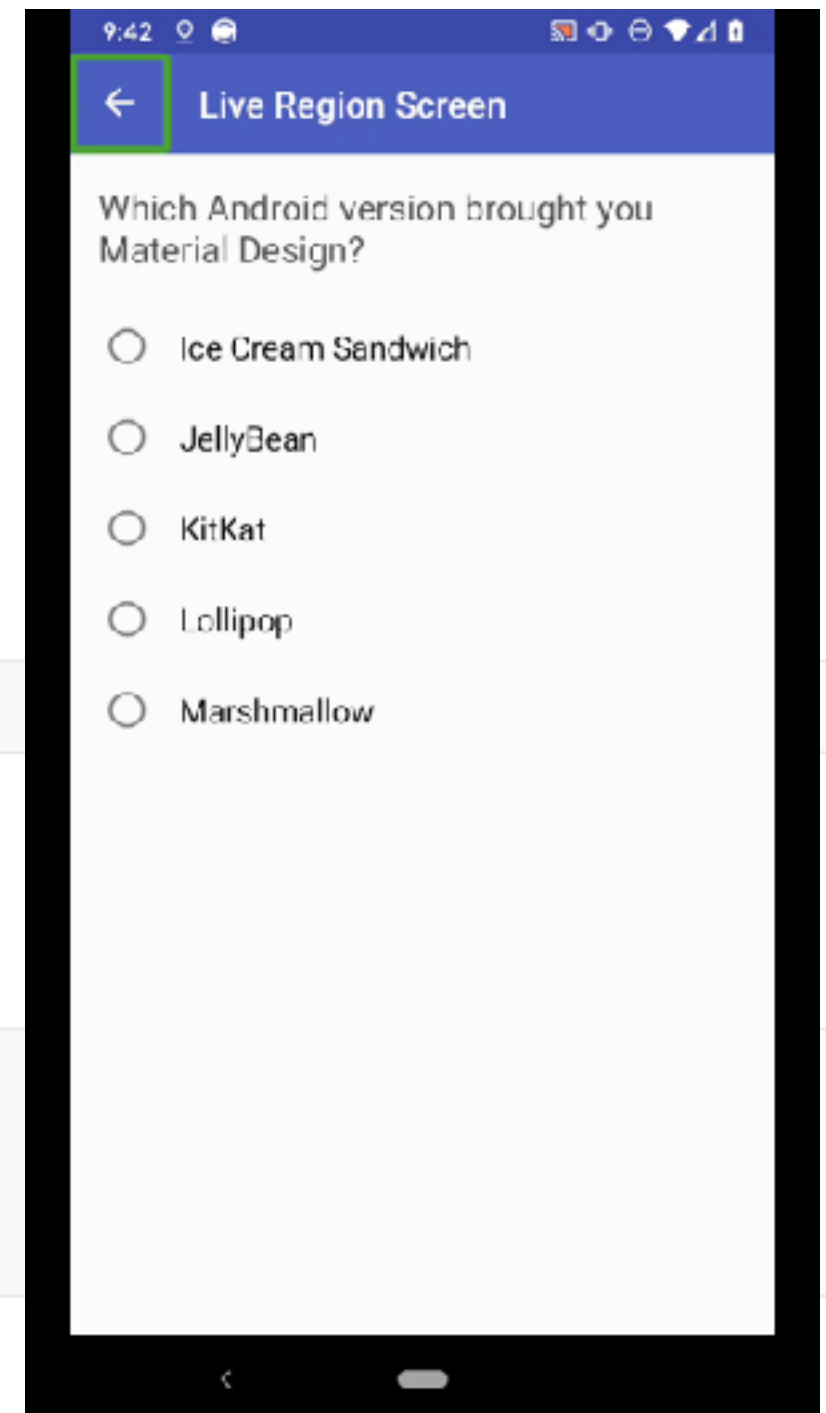
## Announce for change of state (A)

- Selected/Unselected images
- Video start/paused/resumed
- Search result rendered

```
View.announceForAccessibility(CharSequence text)
```

## Live Regions

```
1 <TextView
2     android:id="@+id/feedback_text_view"
3     android:accessibilityLiveRegion="polite"/>
```



# Pop Quiz!

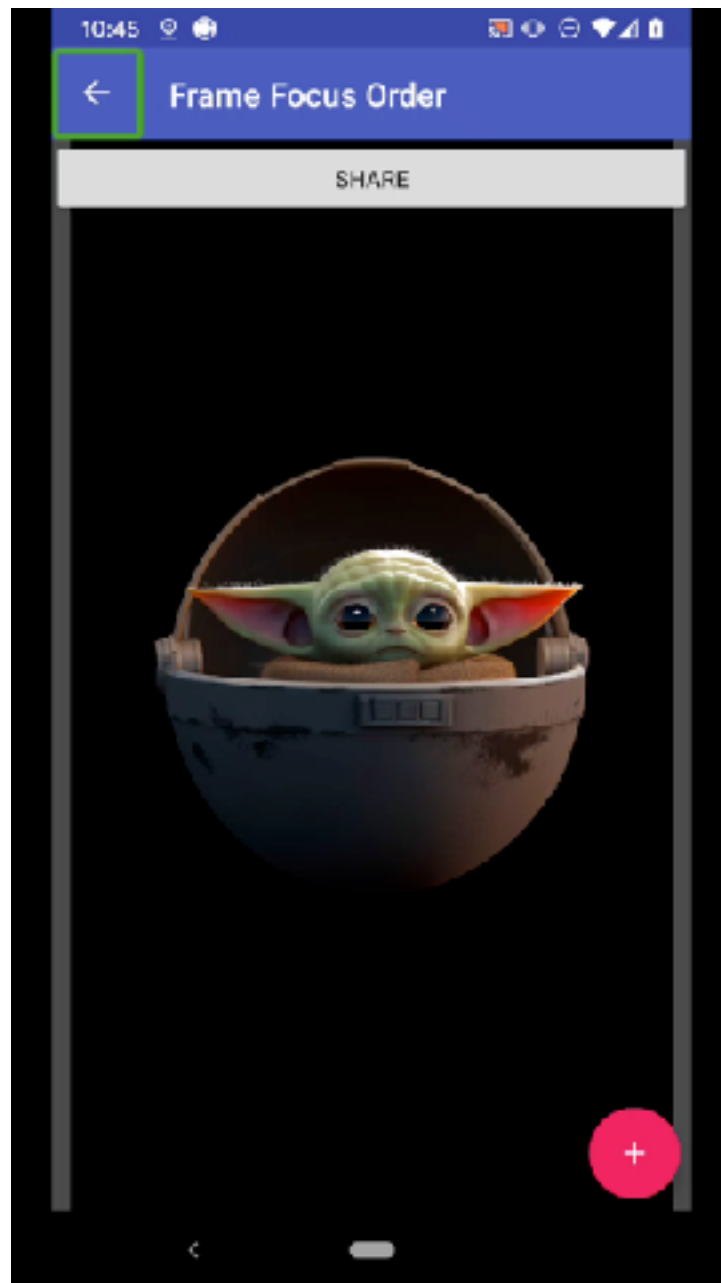
What should be the traversal order for Talkback for this screen?



```
1 <FrameLayout
2     android:layout_width="match_parent"
3     android:layout_height="match_parent">
4     <Button
5         android:id="@+id/share_button"
6         android:text="Share" />
7     <com.google.android.material.floatingactionbutton.FloatingActionButton
8         android:contentDescription="@string/add_image"/>
9
10    <FrameLayout
11        android:layout_width="match_parent"
12        android:layout_height="match_parent">
13        <ImageView
14            android:id="@+id/yoda"
15            android:focusable="true"
16            android:contentDescription="@string/baby_yoda"/>
17    </FrameLayout>
18
19 </FrameLayout>
```



# How do you fix a11y issues

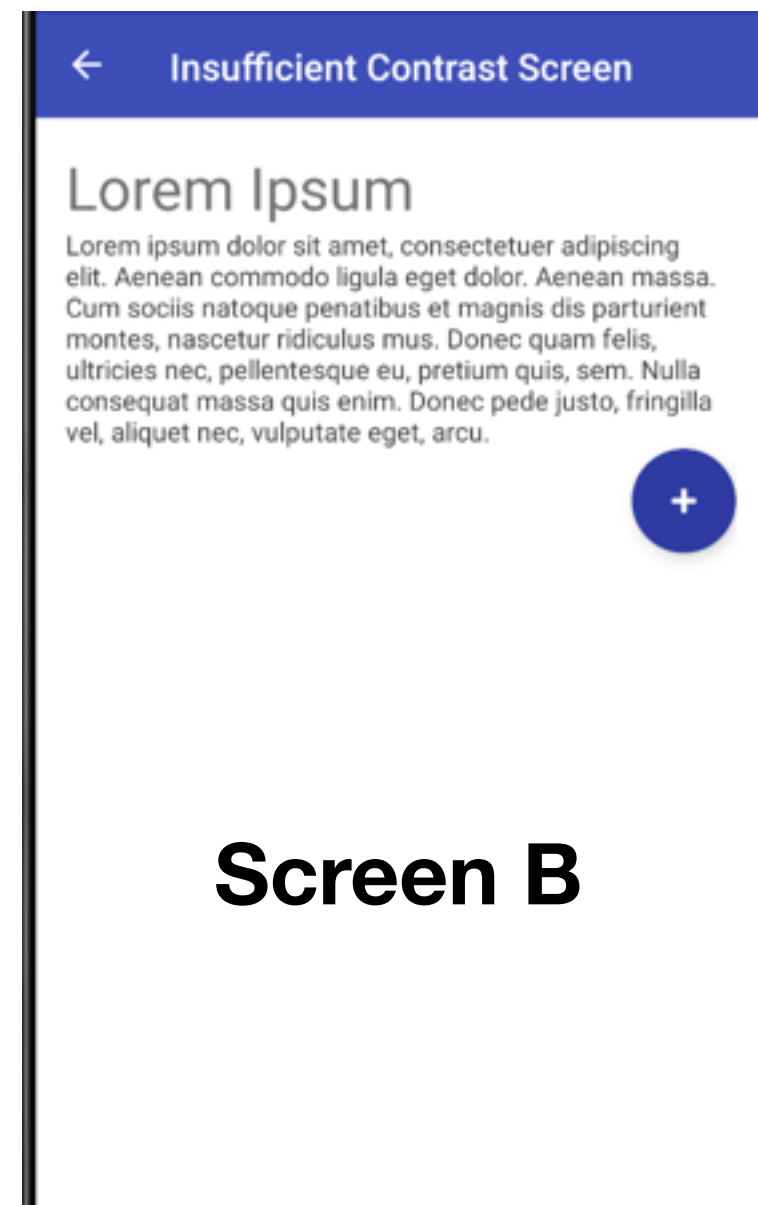
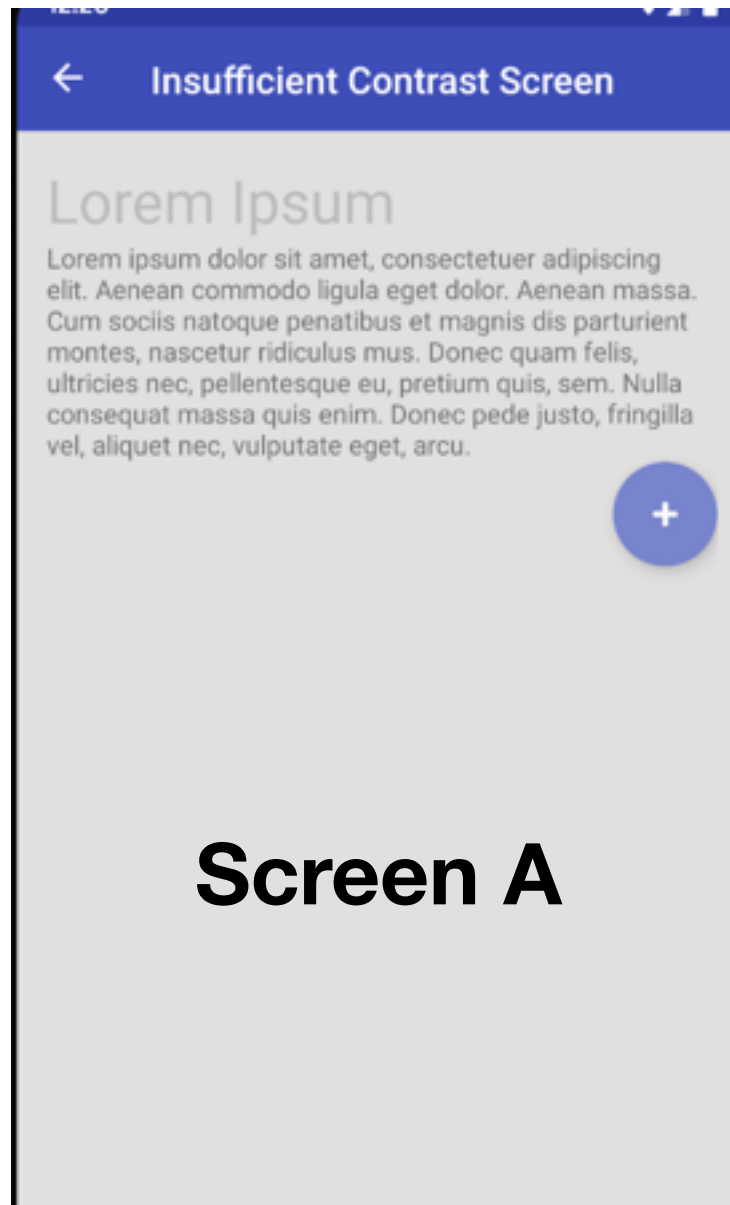


## Focus ordering (A)

- `android:importantForAccessibility=true`
- `accessibilityTraversalBefore`
- `accessibilityTraversalAfter`

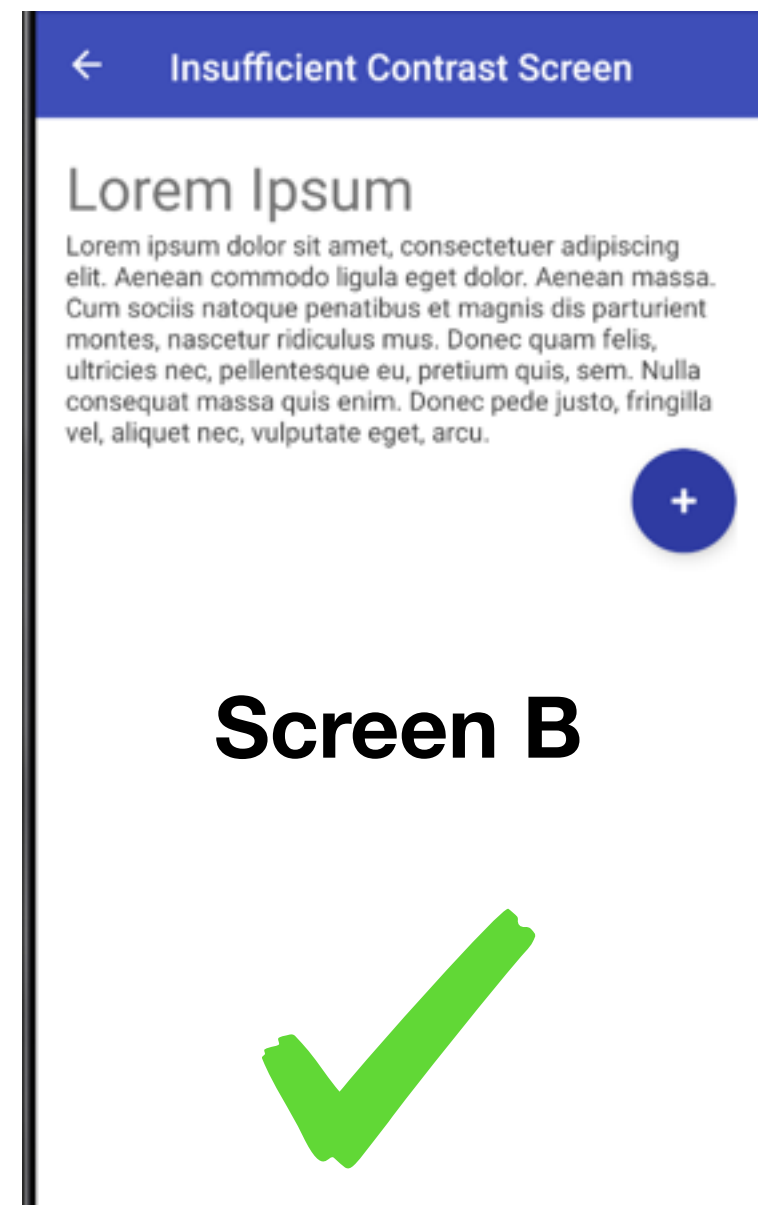
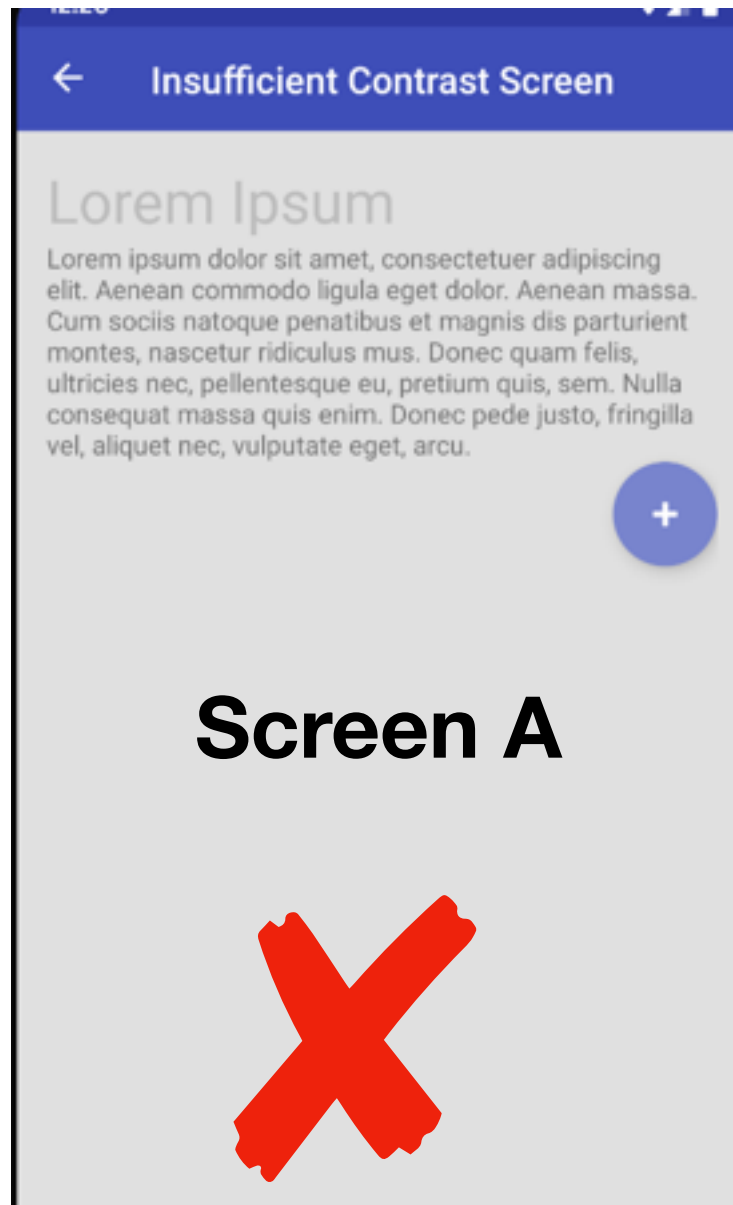
# Pop Quiz!

**Which screen would pass WCAG AA accessibility requirements?**



# How do you fix a11y issues

- **WCAG Contrast ratio requirement (AA) - 4.5 : 1**



# What can you do?

- Understand the a11y contract between Android and your app
- Make accessibility a part of your development process (lint rules, QA testing, accessibility bug bashes)
- Think if your feature can be used by talkback users as well while developing
- Do not use `FrameLayout`, use `ConstraintLayout`
- Educate other developers about a11y

# Thank you!



Slides link: **[bit.ly/30Eo3cD](https://bit.ly/30Eo3cD)**



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