Magic for everyone: How to make your app accessible

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Bird's eye view of a11y

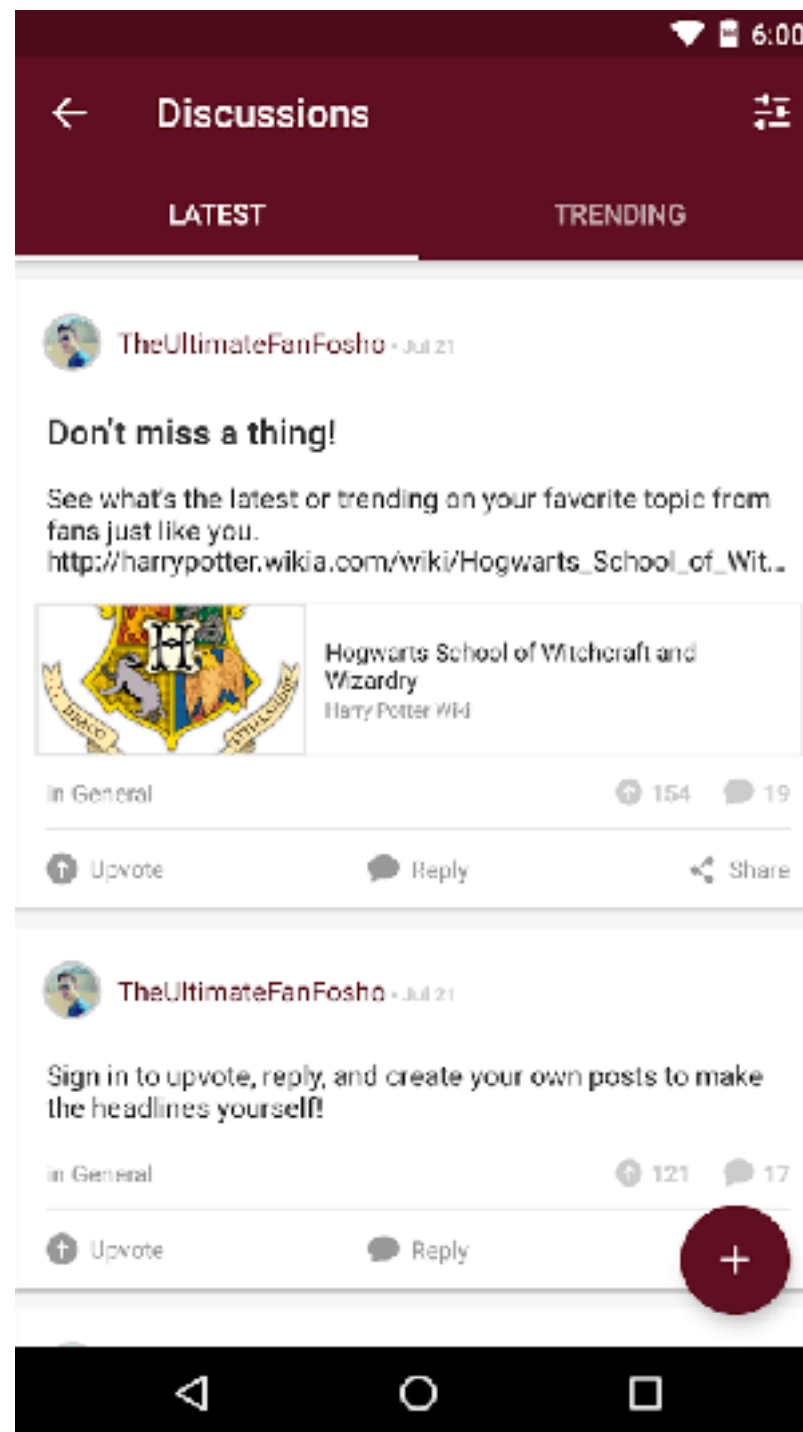**What is accessibility?**

• **accessibility (*adjective*)**

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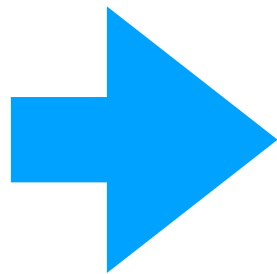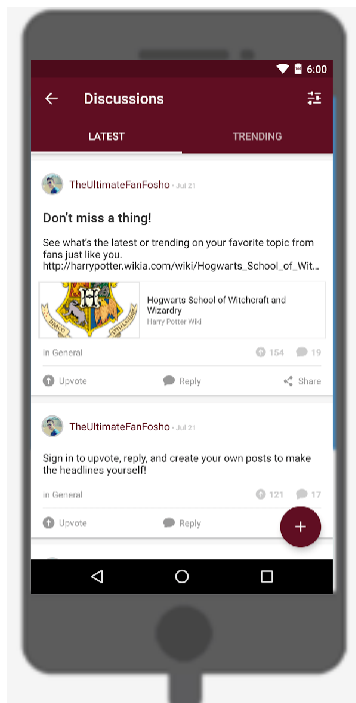   2. that can be used, entered, reached, etc.
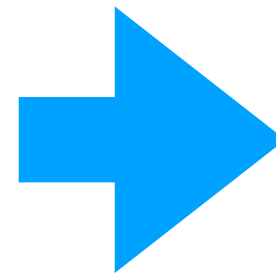
Raise of hands!

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

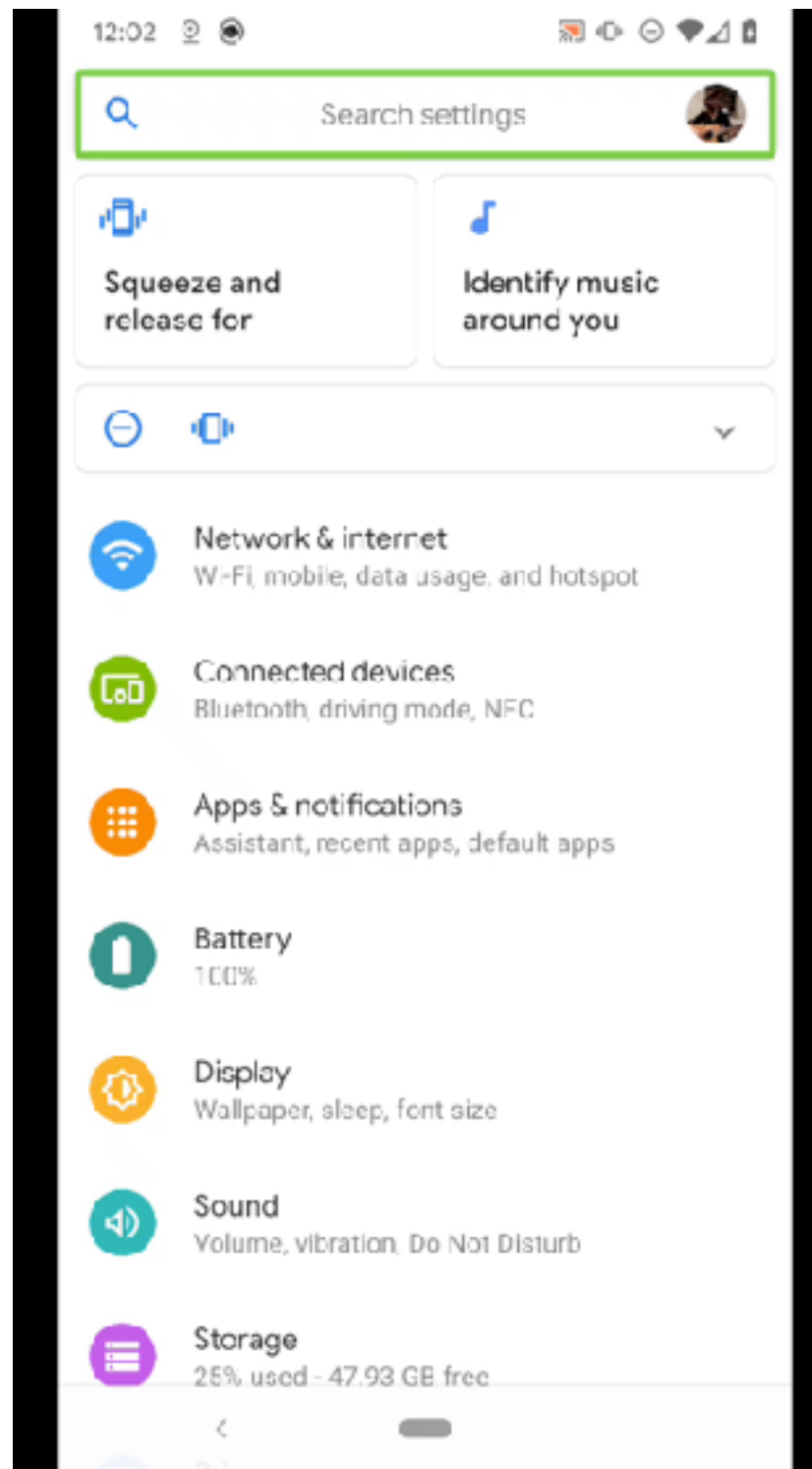Help for people with vision problems

Google BrailleBack
0.97.0.229666838 for Android   Google Inc.
Rate ★★★★★ 0

Google TalkBack

Accessibility guidelines

WCAG = Web Content Accessibility Guidelines
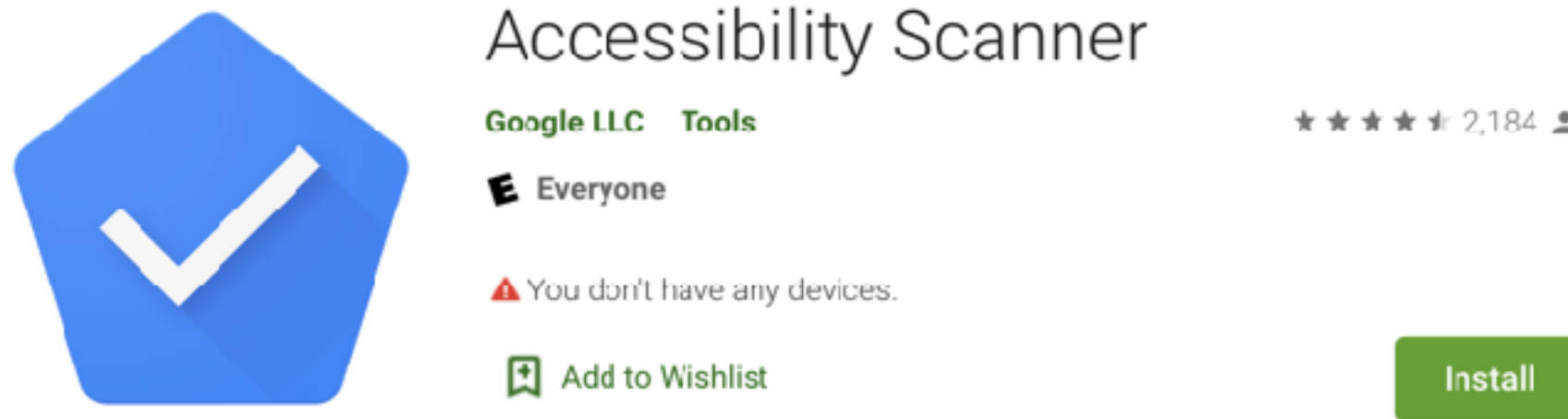
Some of WCAG Level A standards:

- Content Labeling
- Focus Order

Some of WCAG Level AA standards:

- Color Contrast (4.5:1)

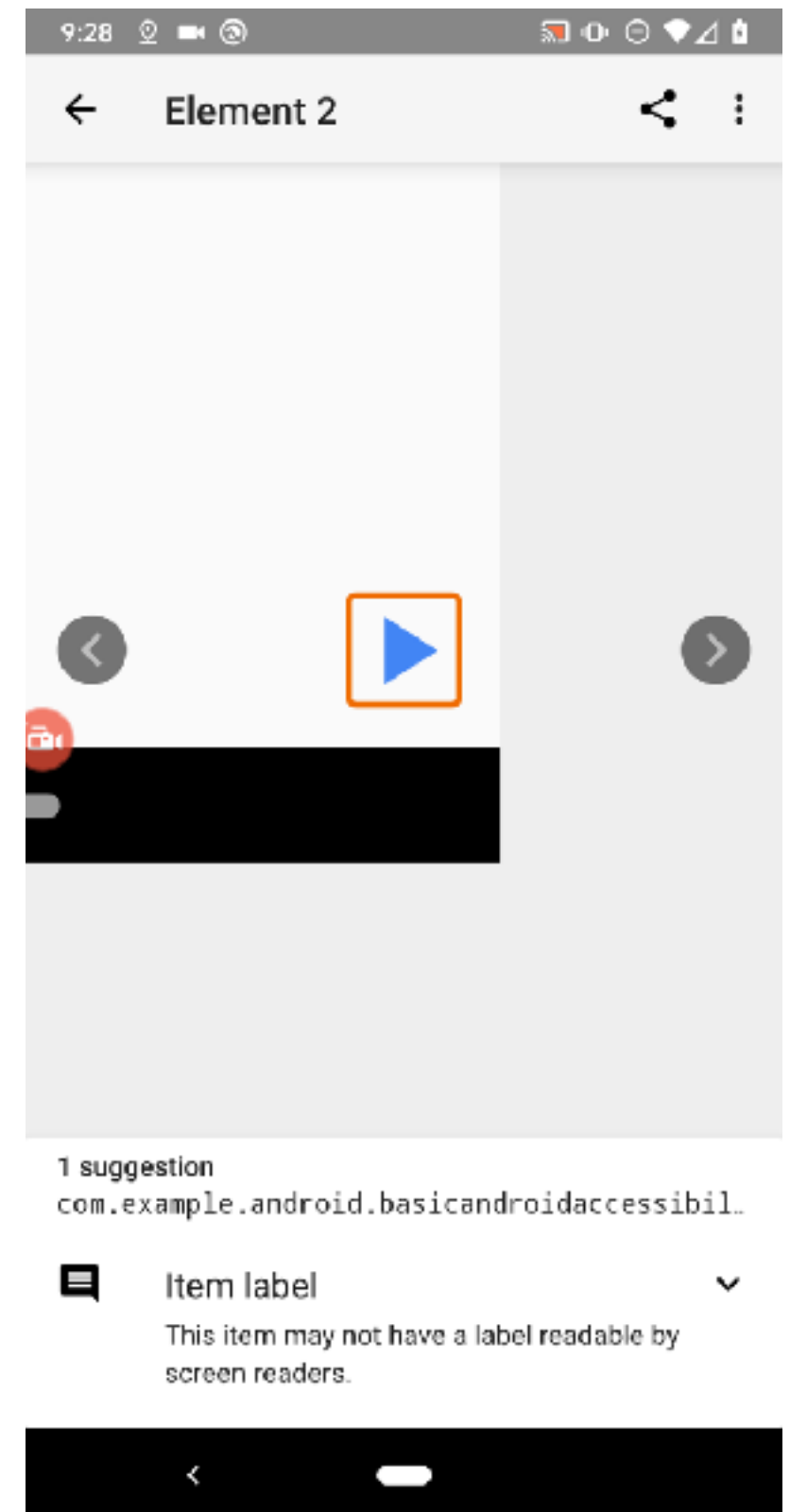# How do you discover a11y issues in your app?

+

Google Play Console Pre-Launch report

How do you fix a11y issues

- **Issue: Missing Content description (A)**
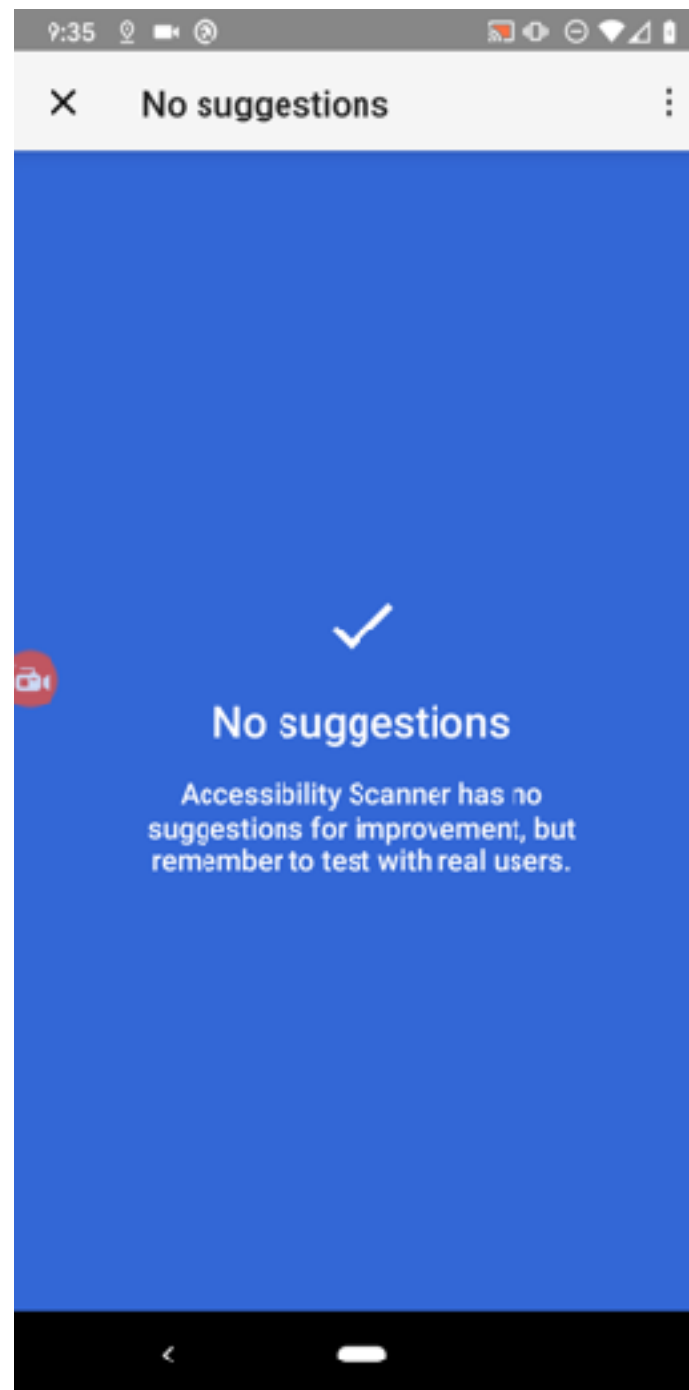
How do you fix a11y issues

- XML

```xml
<ImageButton
    android:id="@+id/header_image"
    android:src="@drawable/headerImage"
    android:contentDescription="@string/header_image_description"
    />
```

- Kotlin

```kotlin
private fun updateContentDescription(contentDescription: CharSequence) {
    titleView.contentDescription = contentDescription
}
```

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
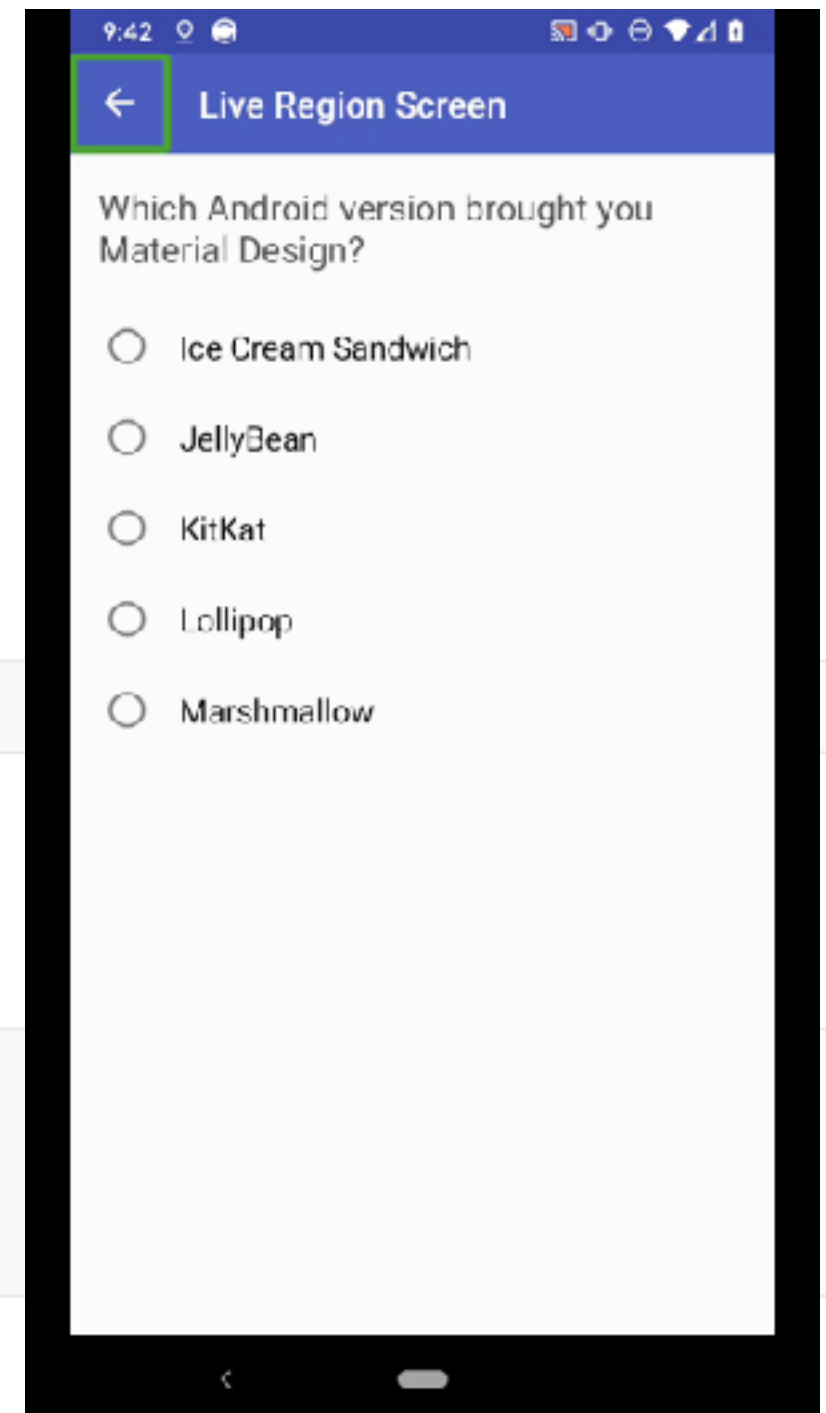
How do you fix a11y issues

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"/>
```
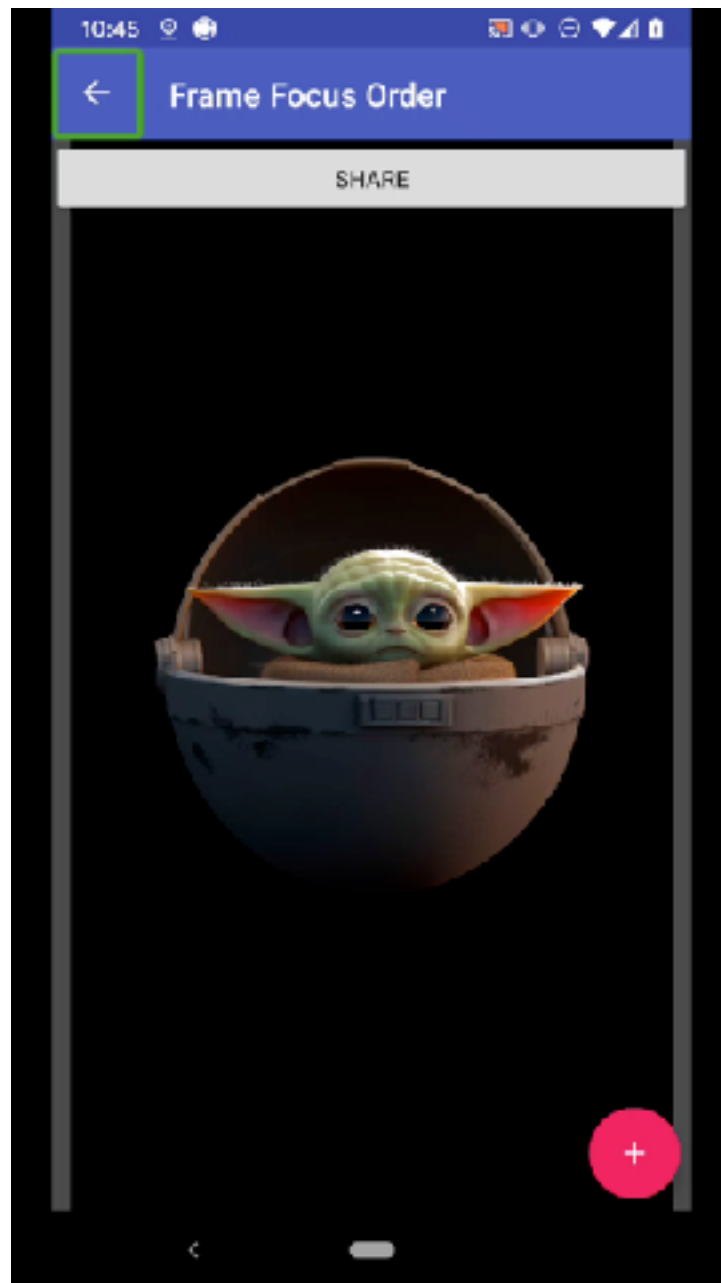
Pop Quiz!

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>
```
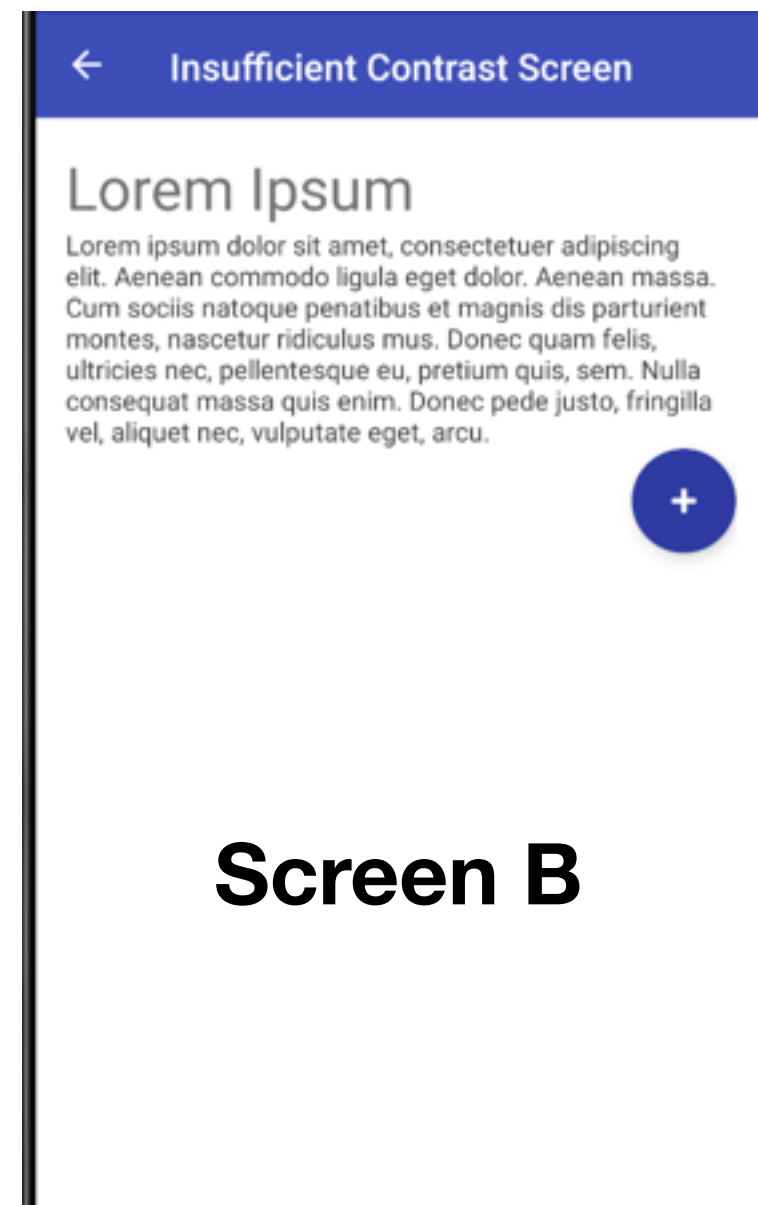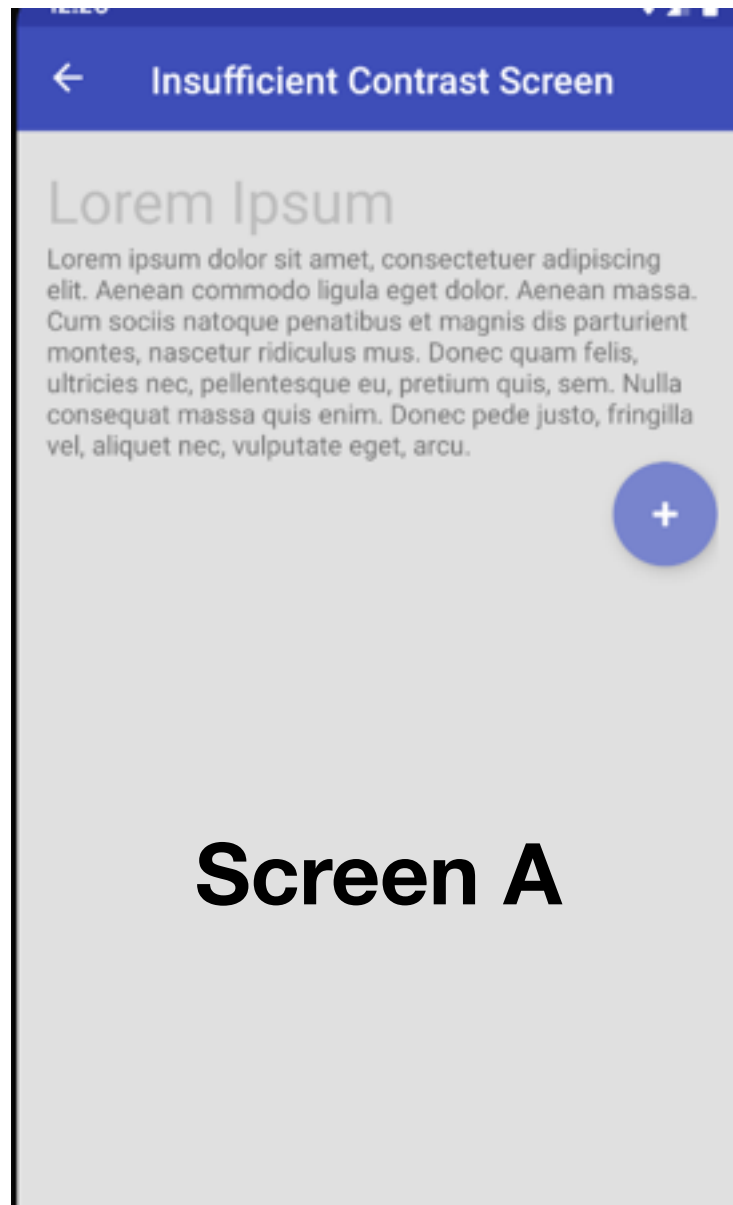
How do you fix a11y issues

Focus ordering (A)

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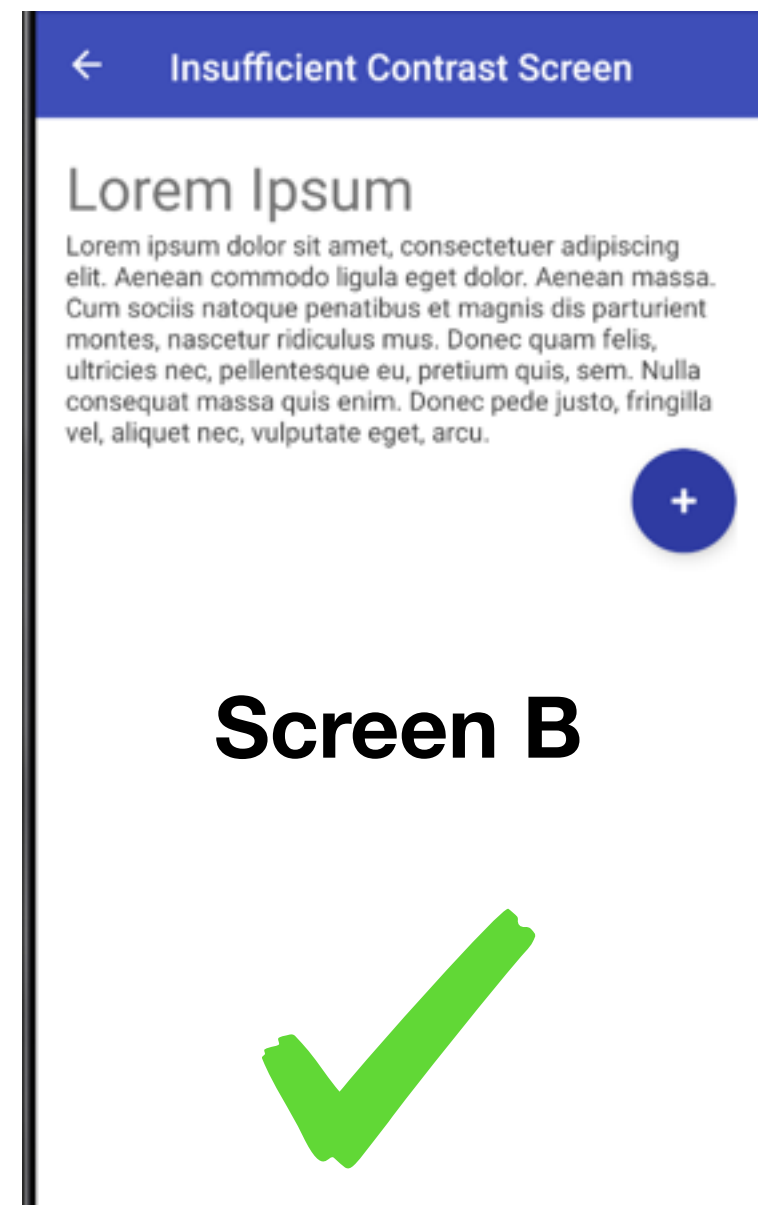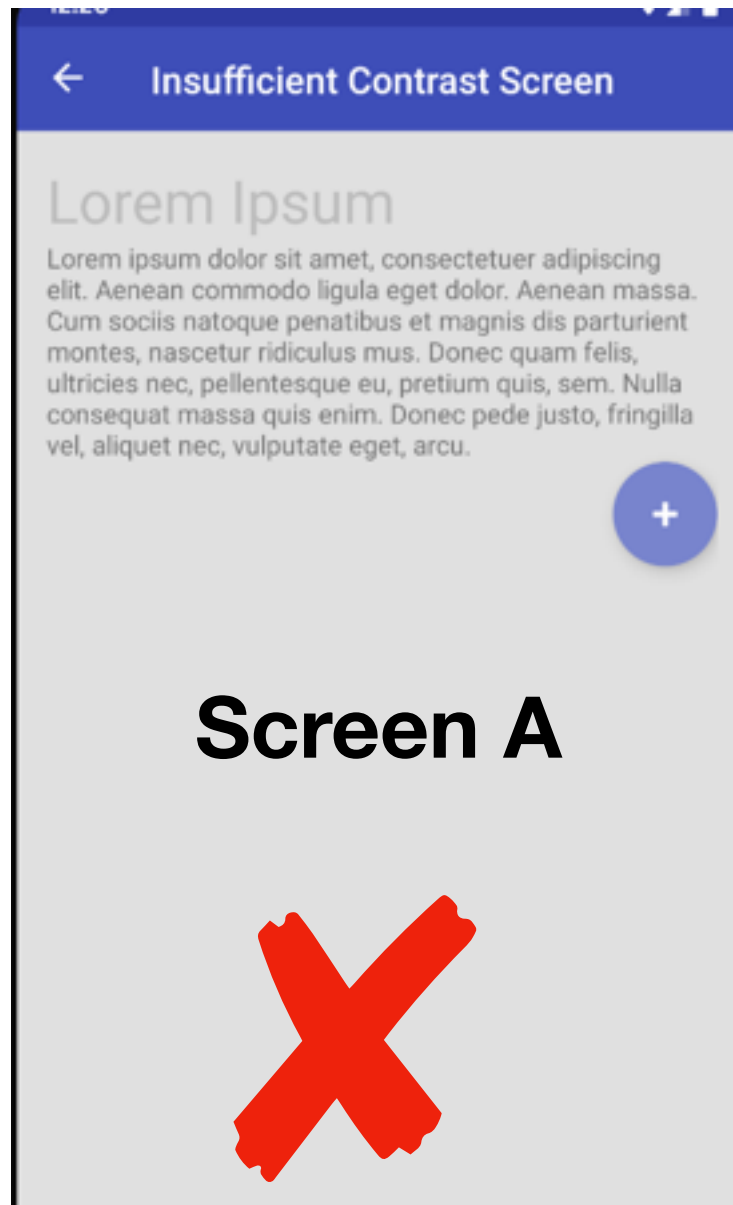- `accessibilityTraversalAfter`

Pop Quiz!

Which screen would pass WCAG AA accessibility requirements?

Screen A

Screen B

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: TODO
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