

# Working with Notifications

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# What to Expect from This Module



**Notification Overview**

**Creating and Displaying Notifications**

**Customizing Notification Helper Class**

**Notification Styles**

**Launching an Activity from a Notification**

**Additional Notification Actions**



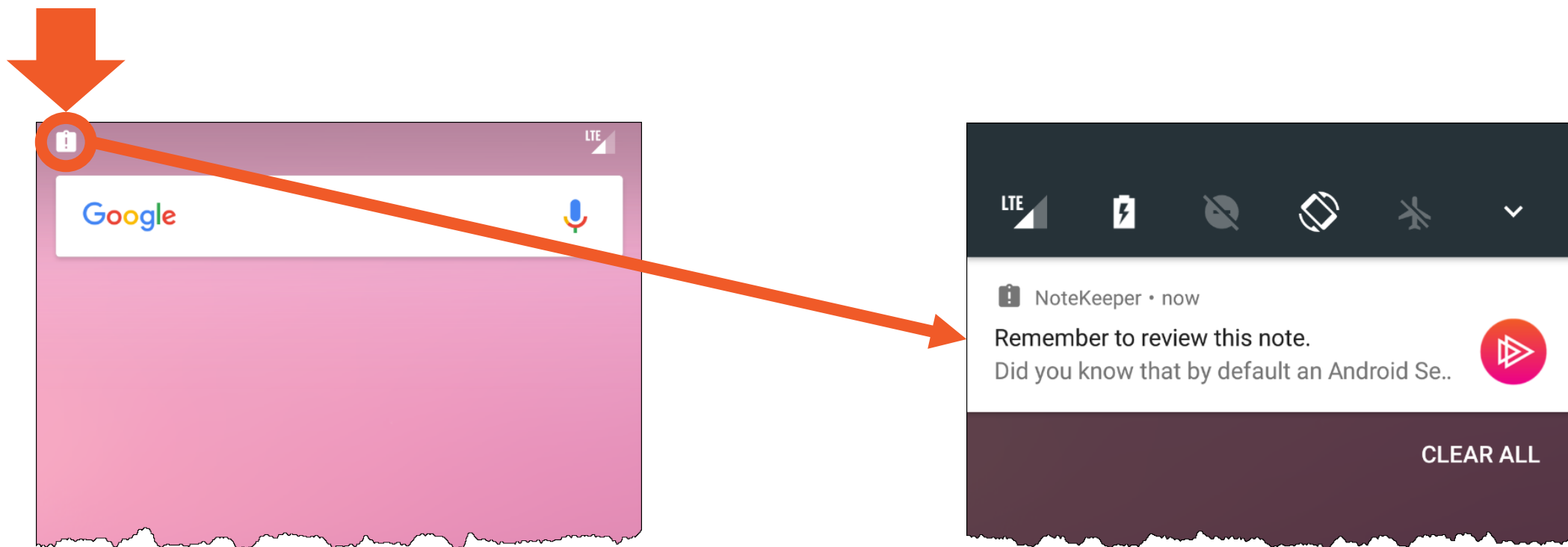
# Notifications

## UI experience displayed outside your app

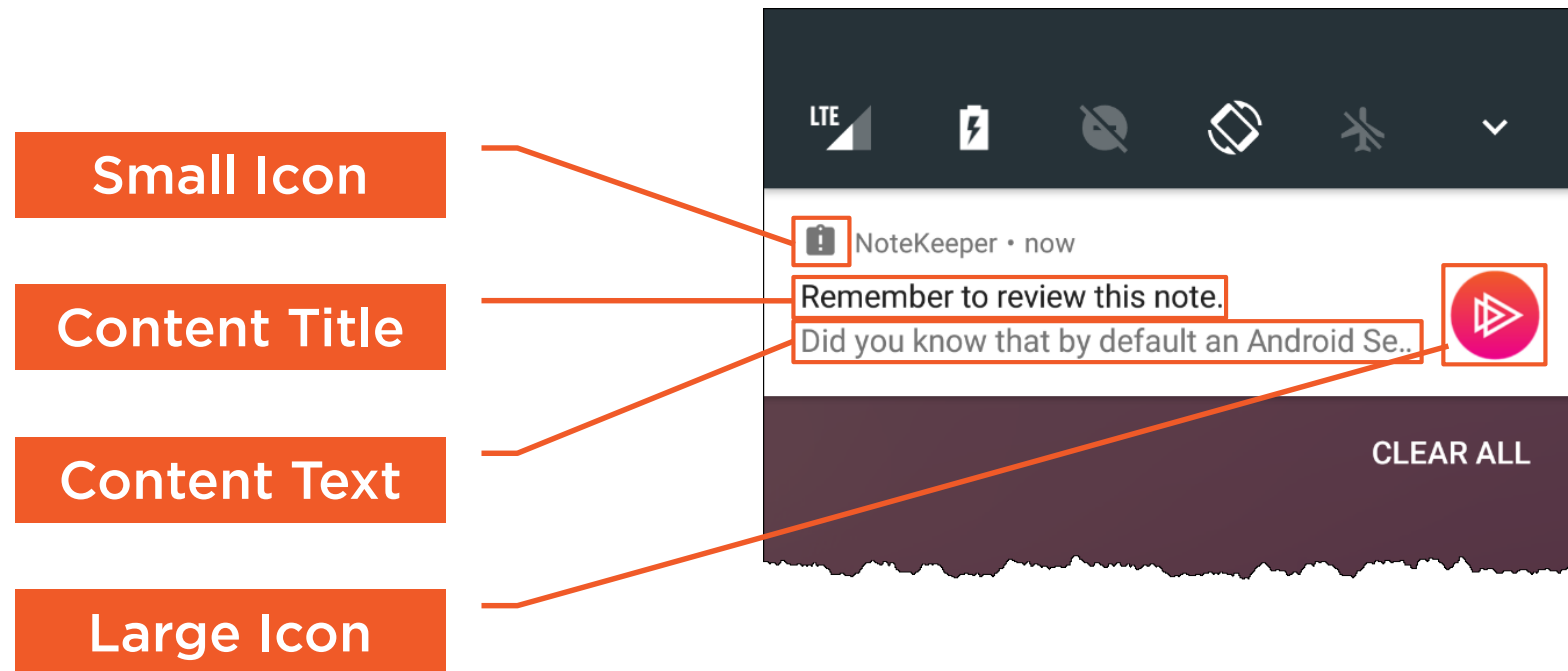
- Notification displayed by the system
- Initially shows as icon in notification area
- User opens notification drawer to view full notification



# Notifications



# Notifications



# Notifications

## **Specific features vary by Android version**

- Capabilities have evolved over time
- Manually managing version differences would be cumbersome

## **We almost always use compatibility class**

- NotificationCompat
- Methods available for all features
- Adjusts actual behavior to the Android version that the app is running on



# Creating and Displaying Notifications

## Notifications use builder pattern

- NotificationCompat.Builder
- Exposes “set” methods for each feature
- Once features set, call build method to create NotificationCompat instance



# Creating and Displaying Notifications

## NotificationManager

- Handles display management
- Access with `Context.getSystemService`

## Android Studio generated helper class

- Centralizes notification creation code
- Handles NotificationManager interaction
- Exposes static notify & cancel methods





# Creating and Displaying Notifications

## Displaying a notification

- Use notify method
- Modify to customize notification
- Subsequent notify calls replace existing notifications displayed by same class

## Removing a notification

- Explicitly remove with cancel method
- Normally set to automatically be removed when tapped



# Notification Styles

## Allows specialization of notification

- Creates an expandable notification
- Each style has a different expanded appearance

## Applying a style

- Create instance of style type
- Set style features
- Pass instance to builder setStyle method



# Notification Styles

New Android Component

Configure Component  
Android Studio

Creates a new helper class that can show or cancel a status bar notification.

Class Name:

Style when Expanded:

- More text
- None
- More text
- Picture
- List

Previous Next Cancel Finish

BigTextStyle

BigPictureStyle

InboxStyle



# Notification Styles

## Some expanded content same

- Can add text to summary line
- Can provide different title from regular content title



# Notification Styles

## **BigTextStyle**

- Provides ability to display a relatively large amount of text

## **BigPictureStyle**

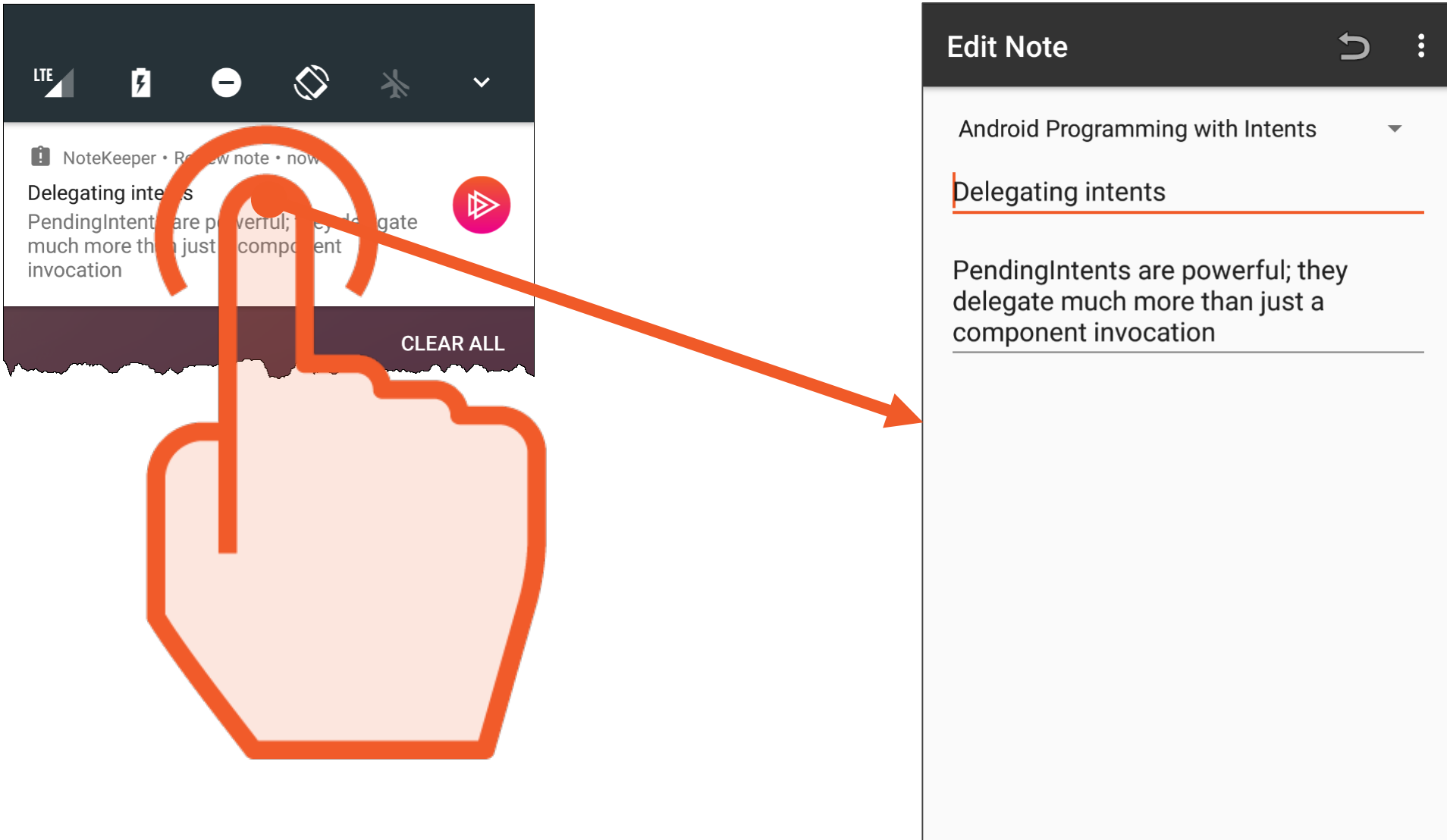
- Provides ability to display a relatively large bitmap

## **InboxStyle**

- Provides ability to display a list of up to five items



# Launching an Activity from a Notification



# Launching an Activity from Within Our App

## Steps to launch activity from within app

- Create an intent
- Associate extras with the intent
- Call startActivity with intent



# Launching an Activity from a Notification

## **Notifications are displayed by the system**

- Notification exists outside of our app

## **App must delegate launch instructions**

- Create an intent
- Associate extras with intent
- Wrap up the act of launching an activity with the intent





# Launching an Activity from a Notification

## PendingIntent

- Wraps an intent
- Wraps the action to perform with intent
- Can be passed outside the app

## Creating PendingIntent

- Create intent w/ extras as normal
- Call PendingIntent.getActivity method
- Returns PendingIntent instance that wraps intent and startActivity action




# Launching an Activity from a Notification

## **Associate PendingIntent with notification**


- Use builder setContentIntent method
- Notification will perform PendingIntent action when tapped




# Additional Actions

 Configure Component  
Android Studio

Creates a new helper class that can show or cancel a status bar notification.



Class Name:

Style when Expanded: More text 

☒ Show Additional Actions

Previous Next Cancel Finish

NoteKeeper • Dummy summary text • now ^

New message: example message

You said example message and lorem ipsum dolor sit amet, consectetur adipiscing elit. Etiam non enim magna. Morbi dictum, velit vel semper venenatis, magna odio volutpat velit, at ullamcorper nulla lacus sed turpis. Pellentesque vitae metus elit, nec tincidunt tellus. Integer sed nisl sem, ullamcorper ornare lacus. Duis ac mauris sed massa congue volutpat. Donec sed erat sit amet turpis viverra rhoncus sit amet

EXAMPLE

SHARE REPLY



# Additional Actions

## Actions added w/ builder addAction method

- Icon
- Display text
- PendingIntent



## Additional Actions

### **Added actions not always visible**

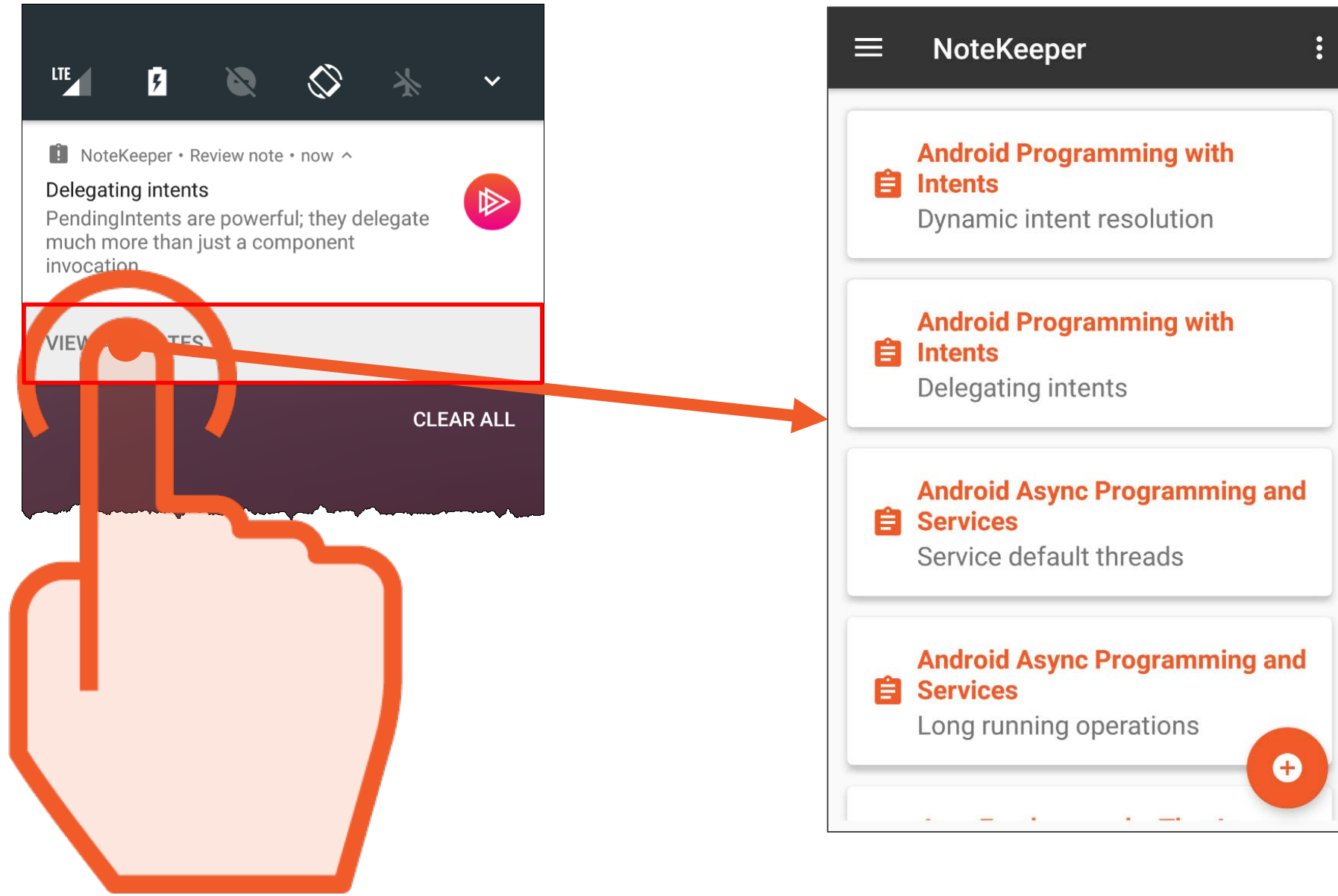
- Visible only when notification expanded

### **Autocancel doesn't apply to added actions**

- App must explicitly call cancel to remove notification



# Additional Actions



# Summary



## Notifications displayed by the system

- Provide UI experience outside your app
- Initially show as icon in notification area

## Notification drawer displays full notification

- Small icon
- Content title
- Content text
- Large icon



# Summary



## Android Studio generated helper class

- Centralizes notification creation code
- Handles display/remove details

## Notification creation

- Use `NotificationCompat.Builder`
- Set desired features
- Adjusts actual behavior to the Android version that app is running on





# Summary



## Notification styles allow specialization

- Create an expandable notification
- Provide alternate title, text, & summary

## Common notification styles

- BigTextStyle includes a large text area
- BigPictureStyle includes a large image
- InboxStyle includes a list

## Style content only visible when expanded

- Still often displayed in standard view



## Summary



### PendingIntent

- Wraps an action to perform w/ intent
- Can be passed outside of app

### Providing notification default action

- Use builder setContentIntent method
- Performed when notification tapped
- Set auto cancel to dismiss notification

### Providing additional actions

- Use builder addAction method
- Do not dismiss notification

