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CMSC436: Programming Handheld Systems

User Notification

Today’s Topics

Toast

Snackbar

Notification Area Notifications

User Notifications

Messages provided to the user outside of the normal UI

User Notifications

These include messages aimed at

User feedback

- Toast
- Snackbar
- Dialog

Event notification

- Notification Area notifications

Toast

- Transitory messages that pop up on the current window
  - e.g., to inform user that an operation has completed successfully
- Automatically fade into & out of view
- No user interaction or response

Creating Toast Notifications

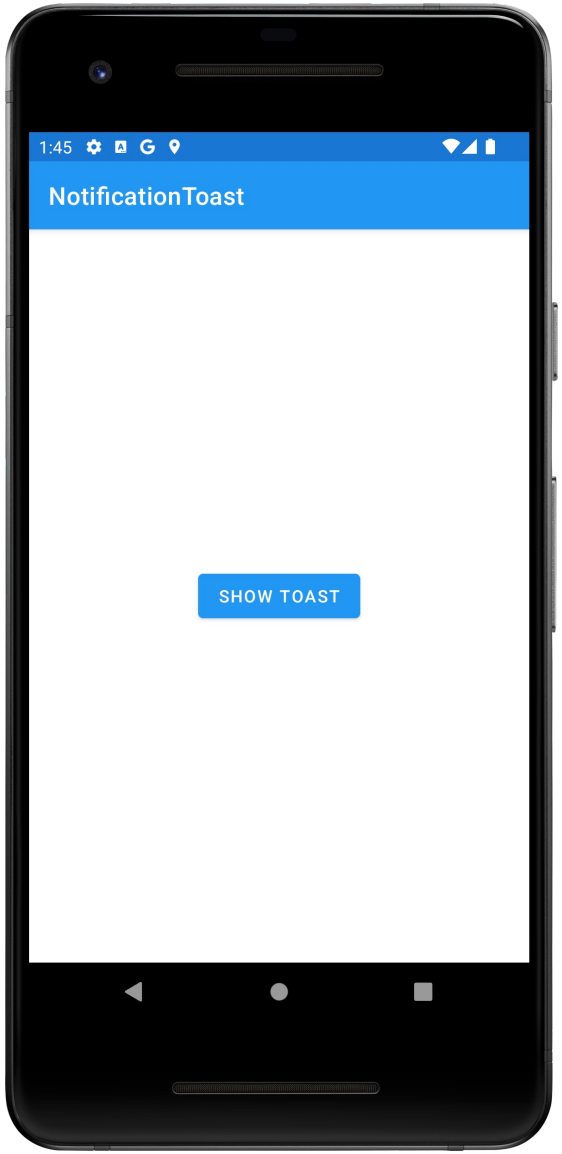
Create a Toast object by calling

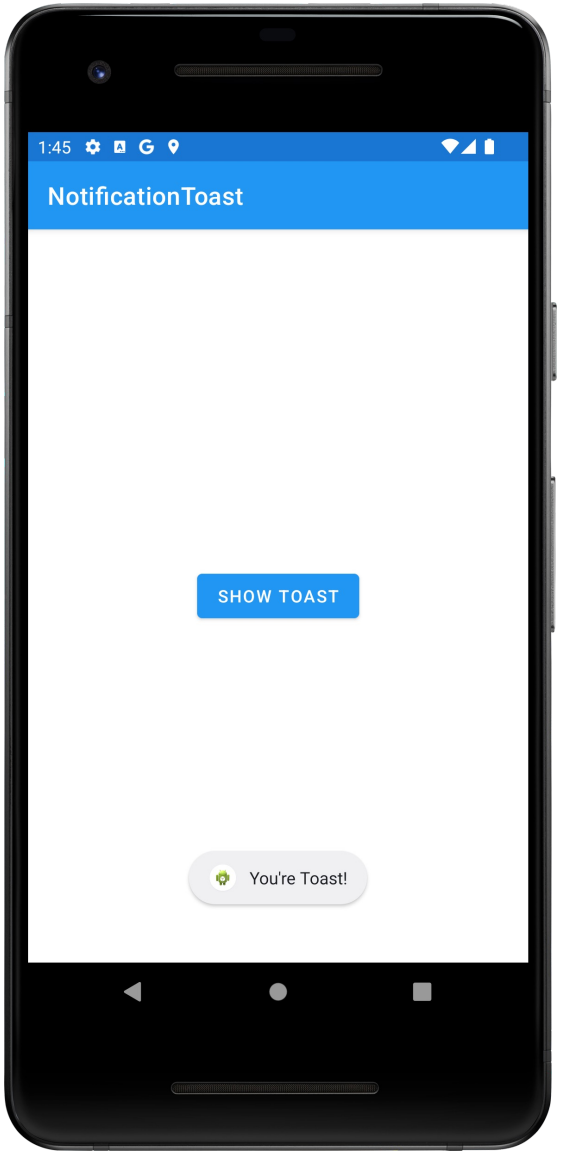
```
Toast.makeText(context, text, duration)
```

Show toast by calling

```
Toast.show()
```

Notification Toast





Snackbar

- Offer lightweight feedback about an operation
  - Replacement for Toast
- Show message at bottom of screen
- Disappear after timeout or user dismissal
- Supports onClickListener and callbacks on showing/dismissal

Creating Snackbar Notifications

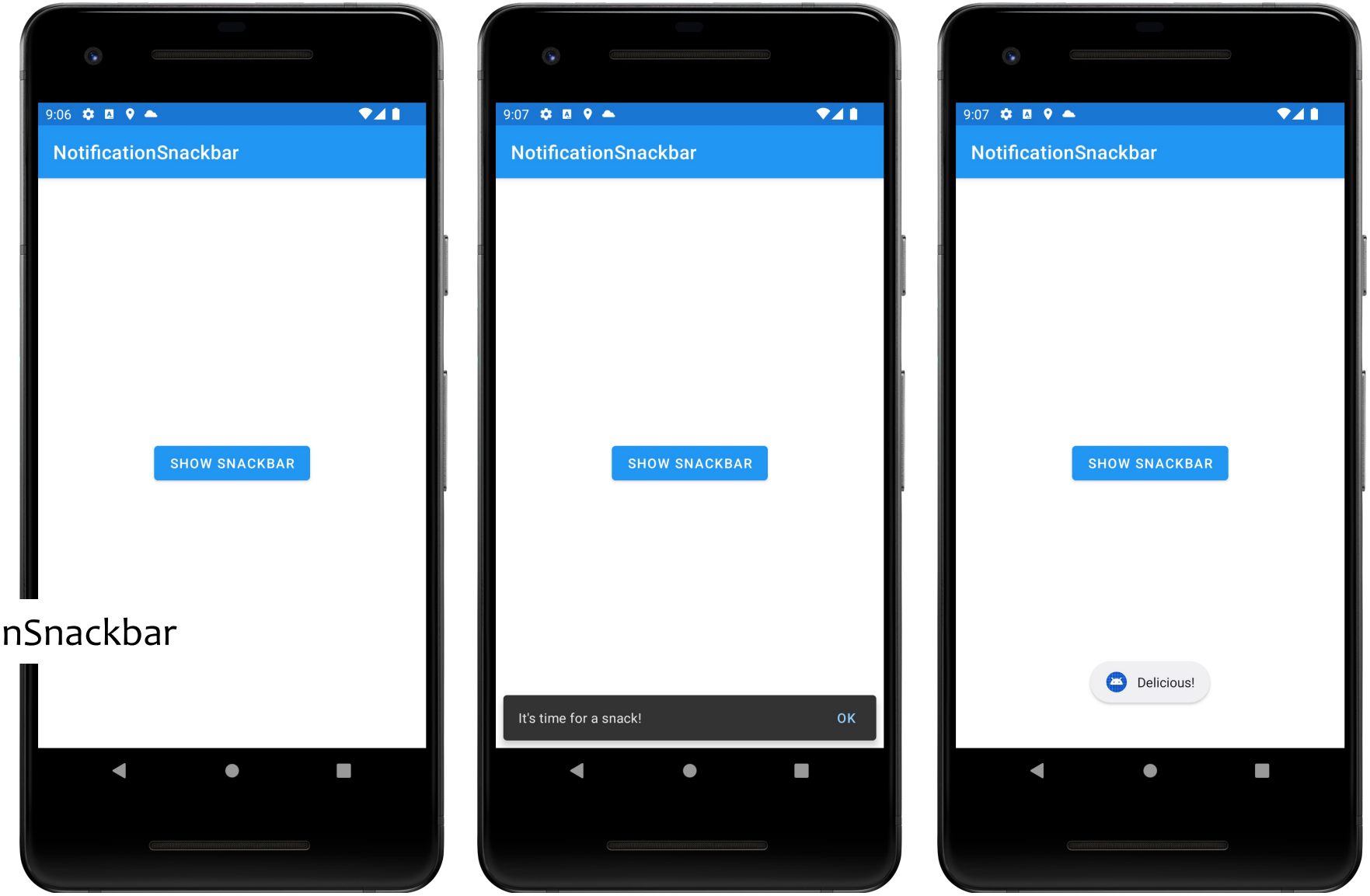
Create a Snackbar object by calling

```
Snackbar.make ()
```

Set action if desired with setAction()

Display Snackbar by calling show() on Snackbar instance

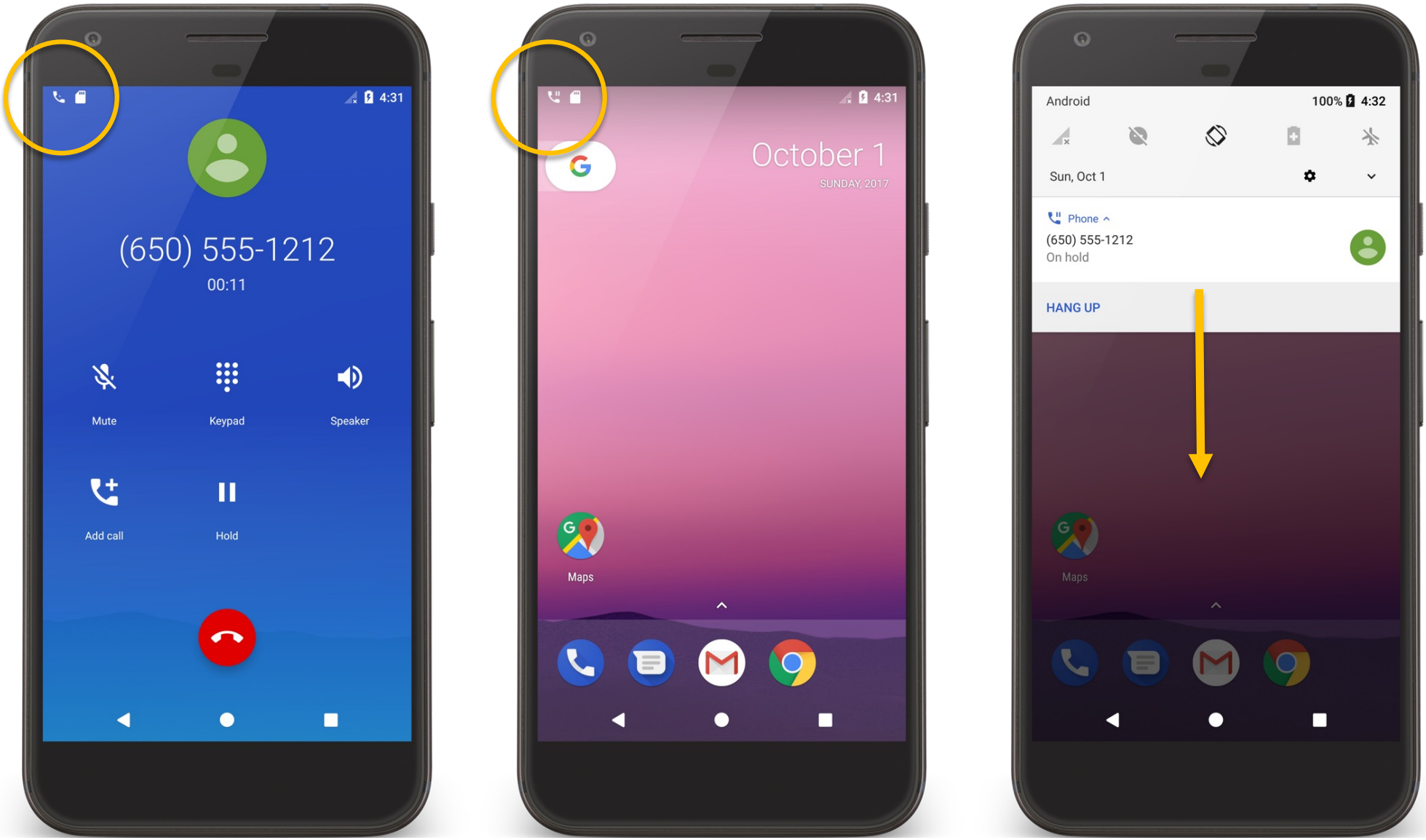
NotificationSnackbar



Notification Area Notifications

Android uses the notification area to alert users of important events

Also provides a notification drawer that users can pull down to see more detailed information about notifications


4:31
(650) 555-1212
00:11
Mute
Keypad
Speaker
Add call
Hold
4:31
October 1
SUNDAY, 2017
Maps
Android
100% 4:32
Sun, Oct 1
Phone
(650) 555-1212
On hold
HANG UP
Maps

Notification Architecture

NotificationManager

NotificationChannel

- Settings that apply to related notifications

Notifications

- Specific notifications to be sent to users

Notification Manager

System Service that manages Notifications

- getSystemService(Context.NotificationManager)
- Can send & cancel notifications

Notification Channels

Settings associated with each notification channel

Channel characteristics include:

- Importance
- Sound
- Lights
- Vibration
- Show on lockscreen
- Override do not disturb

Creating a Notification Channel

Construct a notification channel object with a package-unique ID

Configure the notification channel object

Submit the notification channel object to the notification manager

Notification Structure

- Notification
  - Title, detail, small icon
- Notification Area
  - Ticker text, small icon
- Notification Drawer
  - View
  - Action
- Set by Notification.Builder()

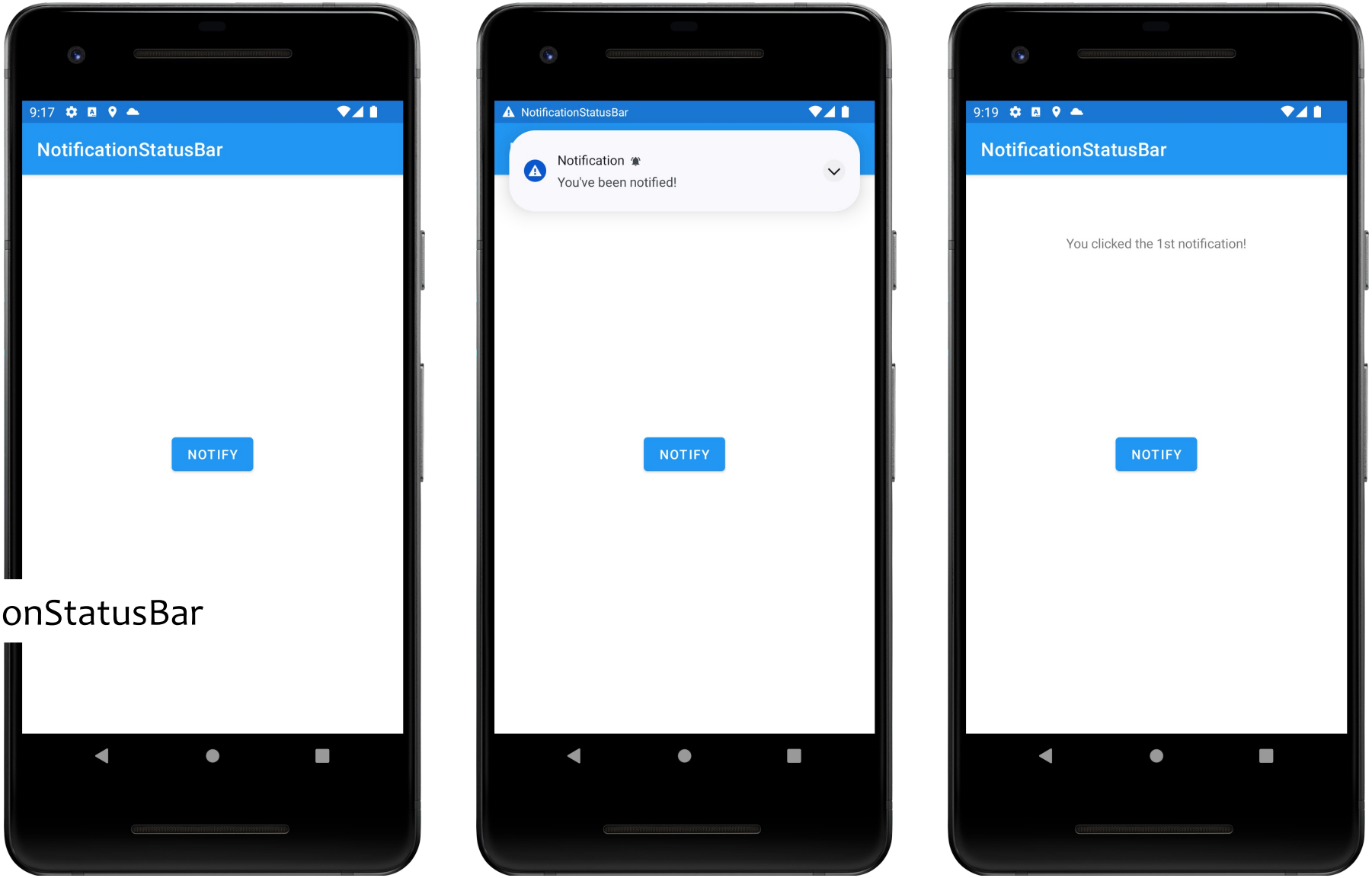
Required Notification Contents

A small icon, set by setSmallIcon()

A title, set by setContentTitle()

Detail text, set by setContentText()

A notification channel ID (On API level 26+)



NotificationStatusBar

Next Time

BroadcastReceivers

Example Applications

NotificationToast

NotificationSnackBar

NotificationStatusBar