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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

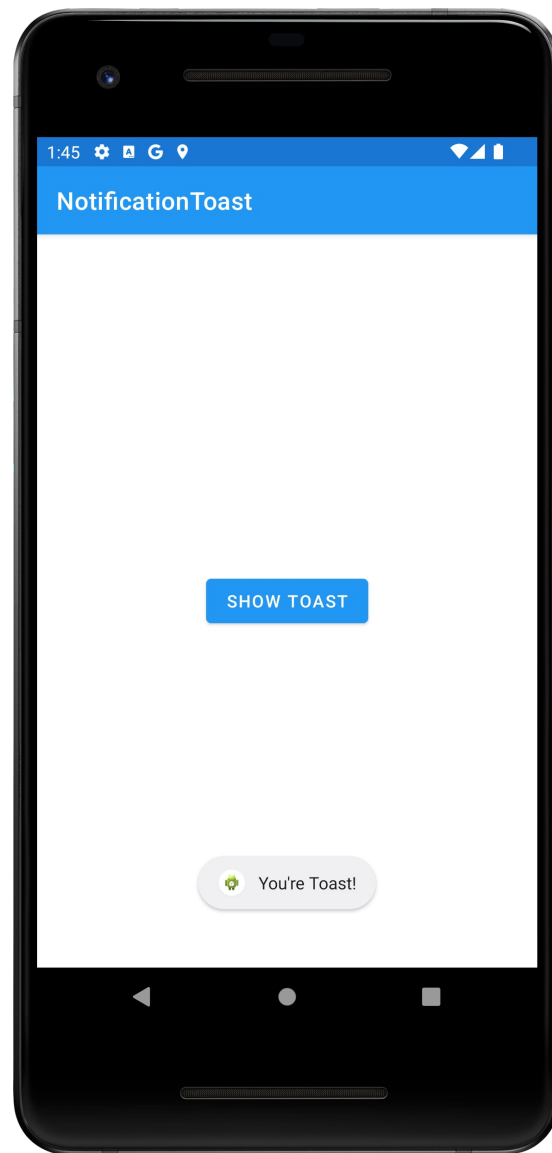
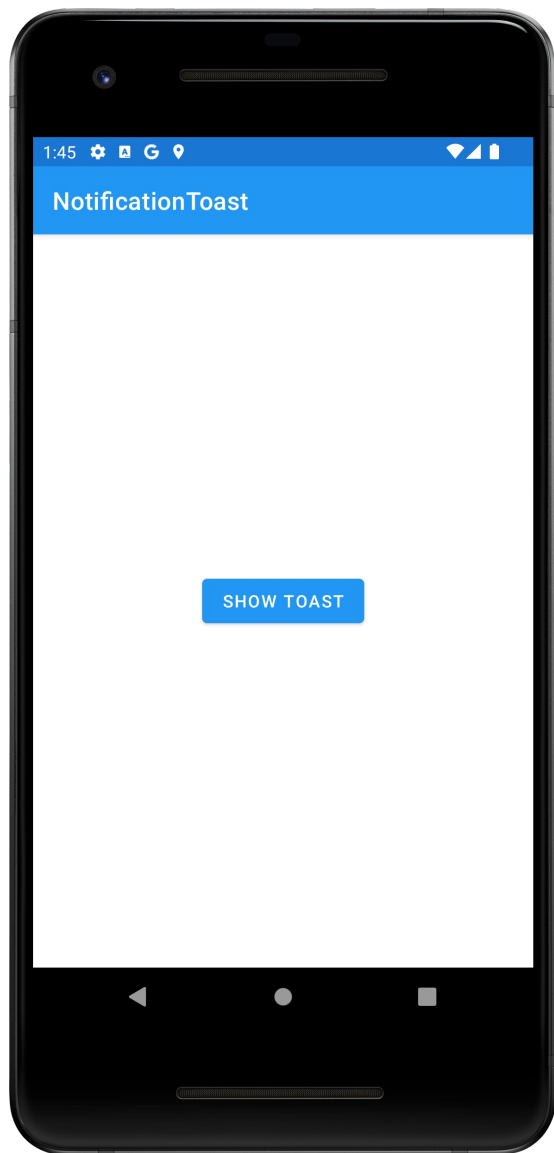
Create a Toast object by calling

```
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

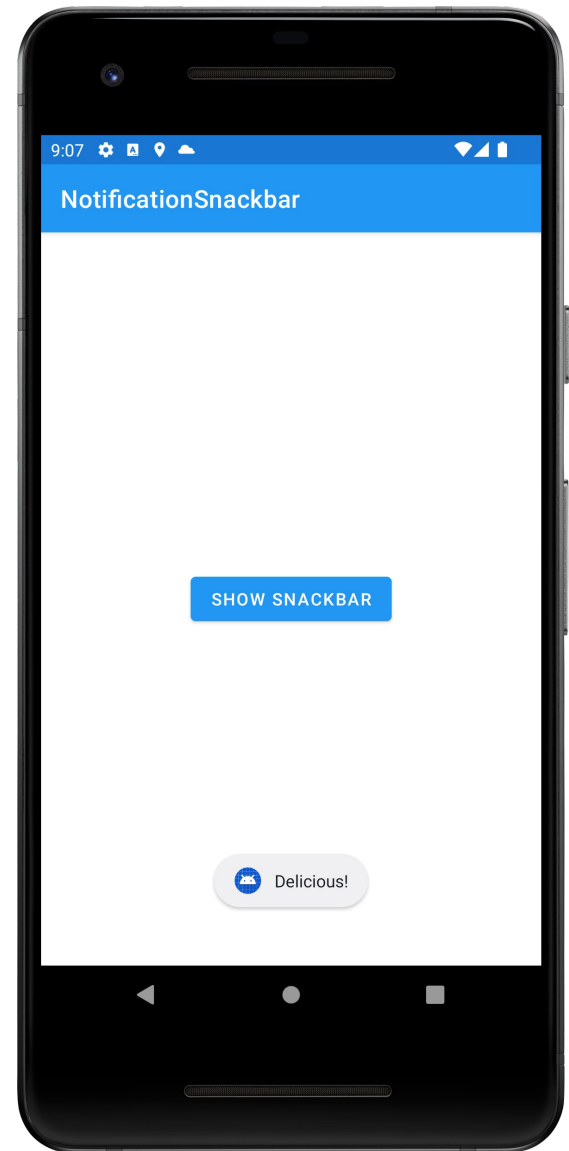
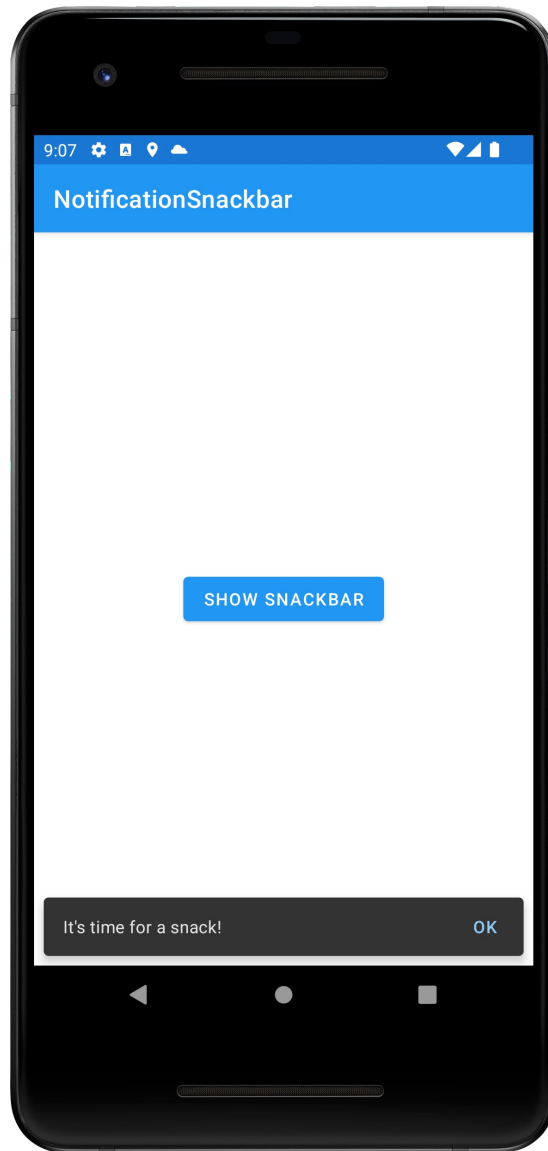
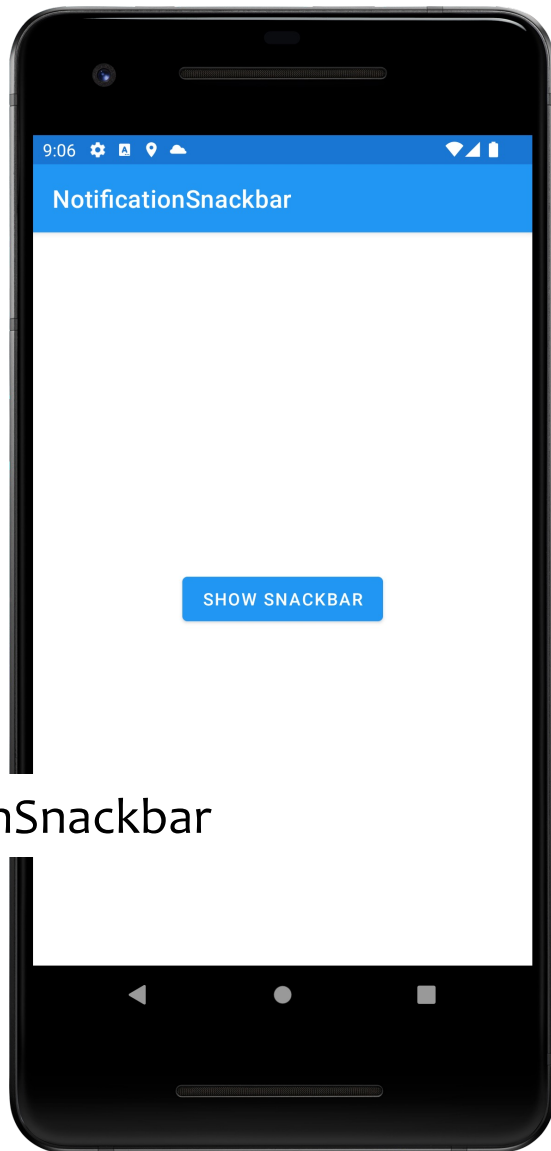
Creating Snackbar Notifications

Create a Snackbar object by calling

```
Snackbar.make ()
```

Set action if desired with `setAction()`

Display Snackbar by calling `show()` on Snackbar instance

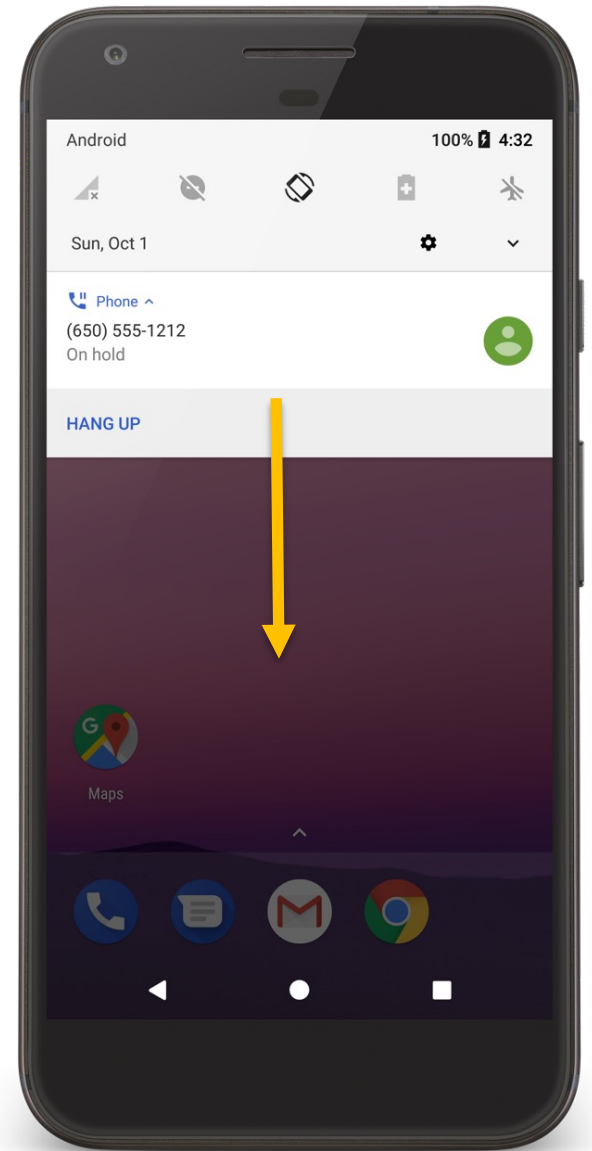
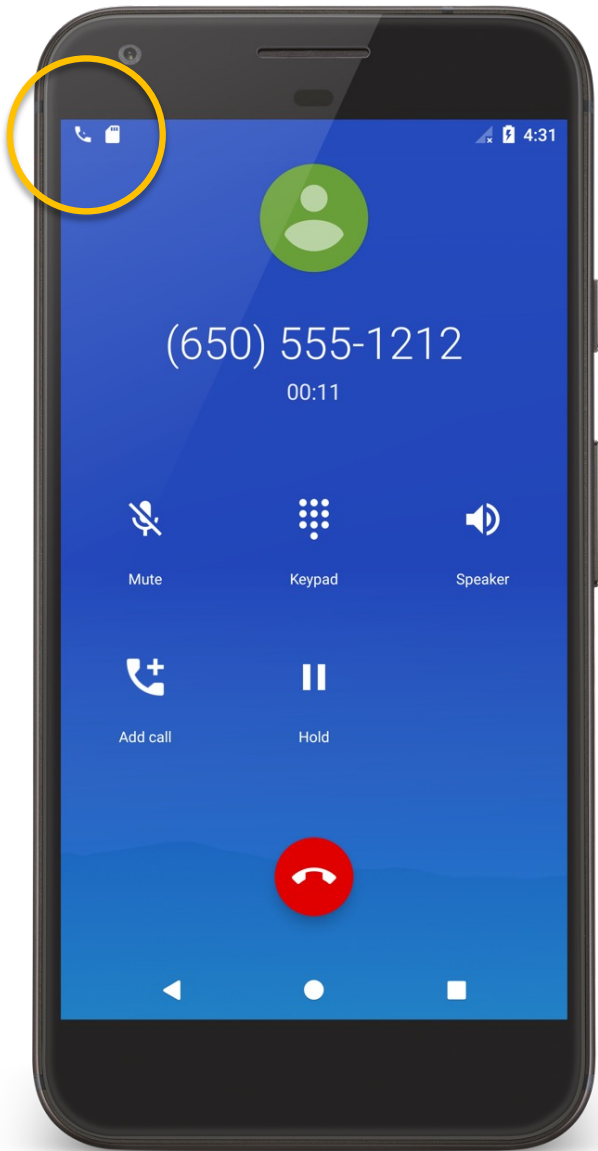


NotificationSnackbar

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



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.NOTIFICATION_SERVICE)`

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()`

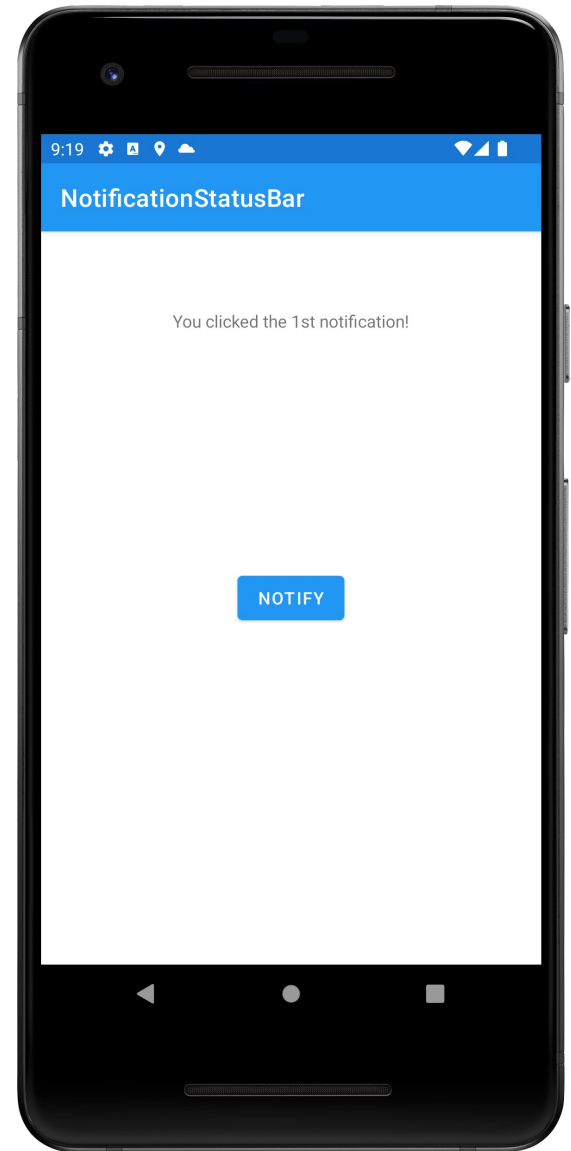
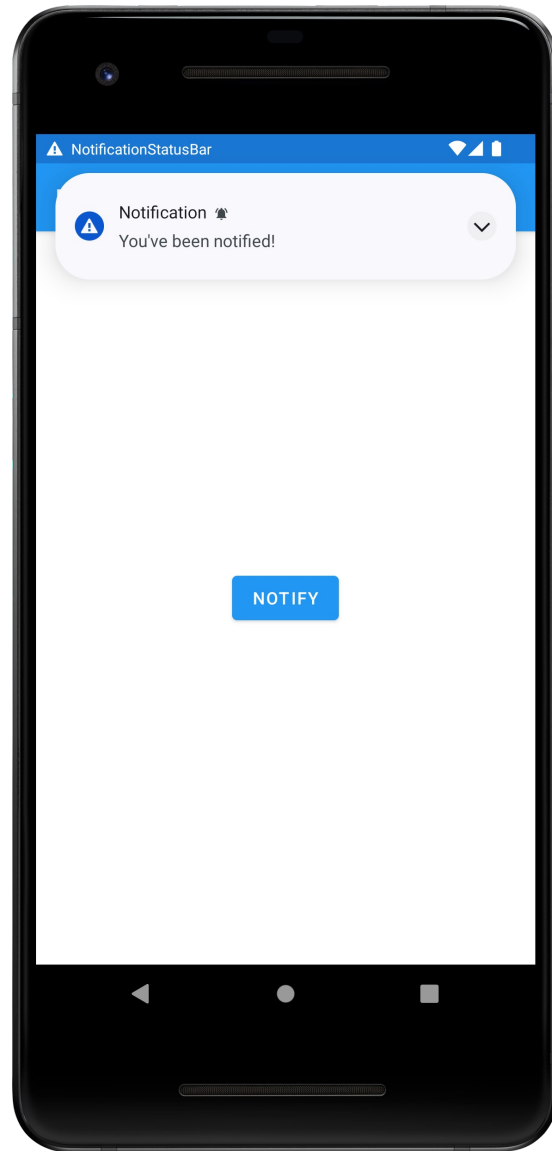
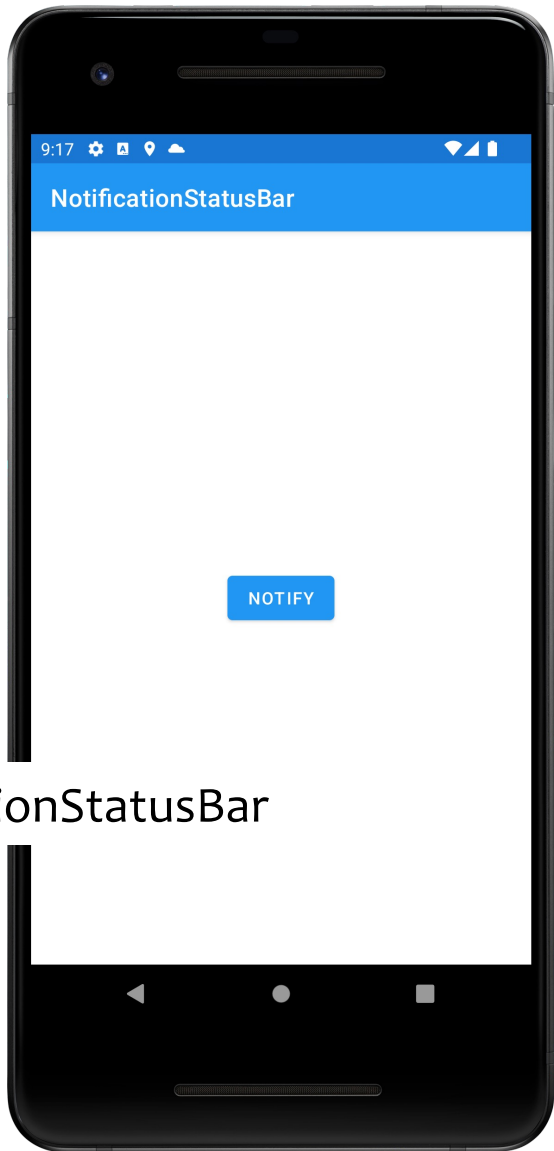
Required Notification Contents

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