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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
Toasts

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()
```
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

Snippet.make()

Set action if desired with setAction()

Display Snackbar by calling show() on Snackbar instance
NotificationSnackbar

SHOW SNACKBAR

It's time for a snack!

OK

Delicious!
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.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

NotificationStatusBar

NotificationStatusBar

You've been notified!

You clicked the 1st notification!
Next Time

BroadcastReceivers
Example Applications

NotificationToast
NotificationSnackBar
NotificationStatusBar