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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()
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.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