Permissions

Programming the Android Platform
Applications can protect resources & data with permissions

Applications statically declare permissions
- Required of components interacting with them
- Required by components they interact with

Android requires users for consent to specific permissions when application is installed
Applications can define permissions in an AndroidManifest.xml file

<permission android:name="android.permission.VIBRATE" />

<-- Allows access to the vibrator -->
Applications can require components interacting with them to have a specified permission by setting `android:permission` attribute in `AndroidManifest.xml`

By default, permissions apply to all components hosted by the application
AndroidManifest.xml

<manifest>
  ...
  android:permission="android.permission.VIBRATE" ...
  <application>
    ...
  </application>
</manifest>
Component Permissions

- Individual components can set their own permissions
  - These override application-level permissions
Activity Permissions

- Restricts which components can start the associated activity
- Checked within execution of
  - startActivity()
  - startActivityForResult()
- Throws SecurityException on permissions failure
Service Permissions

- Restricts which components can start or bind to the associated service
- Checked within execution of
  - Context.startService()
  - Context.stopService()
  - Context.bindService()
- Throws SecurityException on permissions failure
Restricts which components can send broadcasts to the BroadcastReceiver
Checked after Context.sendBroadcast() returns
Does **not** throw SecurityException on permissions failure
ContentProvider Permissions

- Restricts which components can read & write the data in a ContentProvider
- Will discuss in more detail later, when we cover ContentProviders
Applications specify permissions they use

<manifest ...
  ...
  <uses-permission
    android:name="android.permission.VIBRATE">
  </uses-permission>
  ...
</manifest>

User must accept permissions before the package can be installed
Can a calling process access a Service?
- Context.checkCallingPermission()

Does a given processes have specific permissions?
- Context.checkPermission(String, int, int)

Does a given application have specific permissions?
- PackageManager.checkPermission(String, String)

Others to be discussed in later lectures