Android Fragments

Android Chapters 7 & 10

Why fragments?

> UI flexibility (re-compose UI depending on screen size), Reusability (reuse chunks of UI in multiple places in one application, or across applications). EXAMPLE: Google/Amazon map fragment

Fragment Demo (review source code)

1. MainActivity
   a. Regular activity (inherits from Activity)
   b. Starts "for result" OrderInfoActivity
   c. Result of OrderInfoActivity contains Order object containing address info
2. OrderInfoActivity
   a. This is a "fragment activity" (it contains fragments, inherits from FragmentActivity)
      i. FragmentActivity is from the Support Library
      ii. Show dependencies in build.gradle
   b. Layout contains two FrameLayouts that are placeholders for AddressFragments (also contains a CheckBox and a Button)
   c. Adds "shipping address" fragment in onCreate()
   d. Adds/Removes "billing address" fragment when check box state changes
   e. When user clicks OK button, returns result to MainActivity
   f. Order and Address classes are Serializable so their instances can be passed through Intents
3. AddressFragment
   a. Inherits from Fragment class in Support Library
   b. Just like activities, fragments have layout XML files, and contain the event handling logic for their widgets
   c. Fragment argument used to pass in the fragment's title ("SHIPPING ADDRESS", etc.)
      i. Show how fragment arguments are passed in and retrieved
   d. Fragment lifecycle
      i. Fragments have a similar lifecycle to activities, with a method for each change in a fragment's state
      ii. onCreate(…) method is where you retrieve fragment arguments, as well as any other initialization
      iii. onCreateView(…) is where a fragment inflates its view, initializes widgets, adds event handlers, etc.
      iv. Other lifecycle methods (Figure 7.12)

GeoQuiz

Demo Ch. 10 GeoQuiz

Focus on CrimeActivity and CrimeFragment

Passing fragment arguments: Ch. 10 CrimeFragment.newInstance()

Receiving fragment arguments: Ch. 10 CrimeFragment.onCreate()

Family Map Application

MainActivity.onCreate()

If (user is logged in)

Add LoginFragment

Else

Add MapFragment (no arguments)

MainActivity.onLogin()

Remove login fragment

Add map fragment

LoginFragment

Listener interface (onLogin method)

onAttach(Activity activity) method

listener = (Listener)activity;

MapActivity.onCreate()

Activity receives EventID as intent extra

Create map fragment with arguments containing EventID

Add map fragment