Android XI

Fragments, ViewPager
Fragments: Intro

- A modular section of an activity
- Must always be hosted by an activity
- Can be reused in other activities
- The fragment's lifecycle is tied to its hosting activity's lifecycle
- When an activity is running, you can manipulate fragments hosted by it independently
  - Fragment transactions
● Fragments lives in a ViewGroup inside the activities view hierarchy
  ○ They can be declared in the activity's layout xml with the <fragment> tag
● Fragments defined their own view layout
Why Fragments?

- To support both phones and tablets
- When you have a part of the activity UI that you want to reuse in other activities
Fragment Lifecycle

- Callbacks similar to Activity's callbacks, except:
  - `onCreateView`: time to draw UI, load your xml here, use `view.findViewById()`
Setting up a UI in a Fragment

```java
public static class ExampleFragment extends Fragment {
    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.example_fragment, container, false);
    }
}
```
Adding to An Activity's Layout

A layout with two fragments

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/andr
    android:orientation="horizontal"
    android:layout_width="match_parent"
    android:layout_height="match_parent">
    <fragment android:name="com.example.news.ArticleListFragment"
        android:id="@+id/list"
        android:layout_weight="1"
        android:layout_width="0dp"
        android:layout_height="match_parent" />
    <fragment android:name="com.example.news.ArticleReaderFragment"
        android:id="@+id/viewer"
        android:layout_weight="2"
        android:layout_width="0dp"
        android:layout_height="match_parent" />
</LinearLayout>
```
Adding a Fragment At Runtime

In onCreate():

FragmentManager fragmentManager = getSupportFragmentManager();
FragmentTransaction fragmentTransaction = fragmentManager.beginTransaction();
ExampleFragment fragment = new ExampleFragment();
fragmentTransaction.add(R.id.fragment_container, fragment);
fragmentTransaction.commit();

- R.id.fragment_container can be any view you want to put the fragment in, a default: the root view referenced by android.R.id.content
Example: Fragments in a ViewPager

Main steps:

- Create the layouts for the fragments
- Create a class for the fragments
- Create a ViewPager
- Add ViewPager to main.xml
- Create a PagerAdapter
- Override getItem, return the fragment you want given the position of the view pager

See code demo