

# MODULE 11

# FRAGMENT

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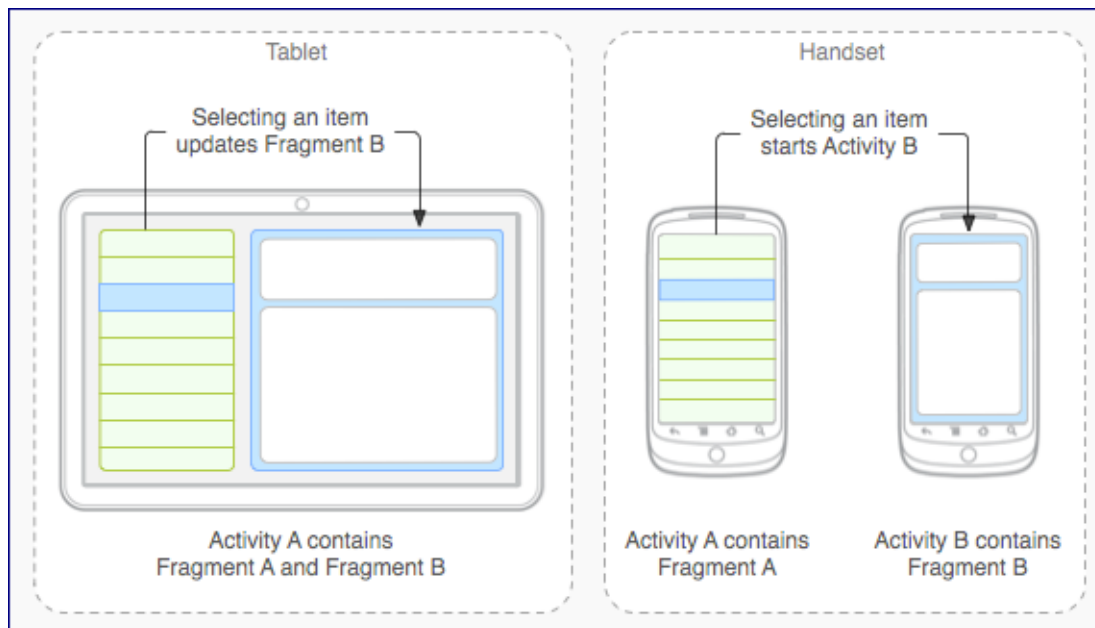
- What's a Fragment?
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# What's a Fragment?

- ▶ Represents a portion of user interface
  - Defines its own view layout
  - Has its own lifecycle
- ▶ Must be embedded in an activity
  - Can be added or removed while the activity is running
  - Insert a fragment into activity layout using <fragment> element
- ▶ Multiple fragments can be combined in a single activity
  - To build a multi-pane UI
  - To reuse a fragment in multiple activities

# What's a Fragment?

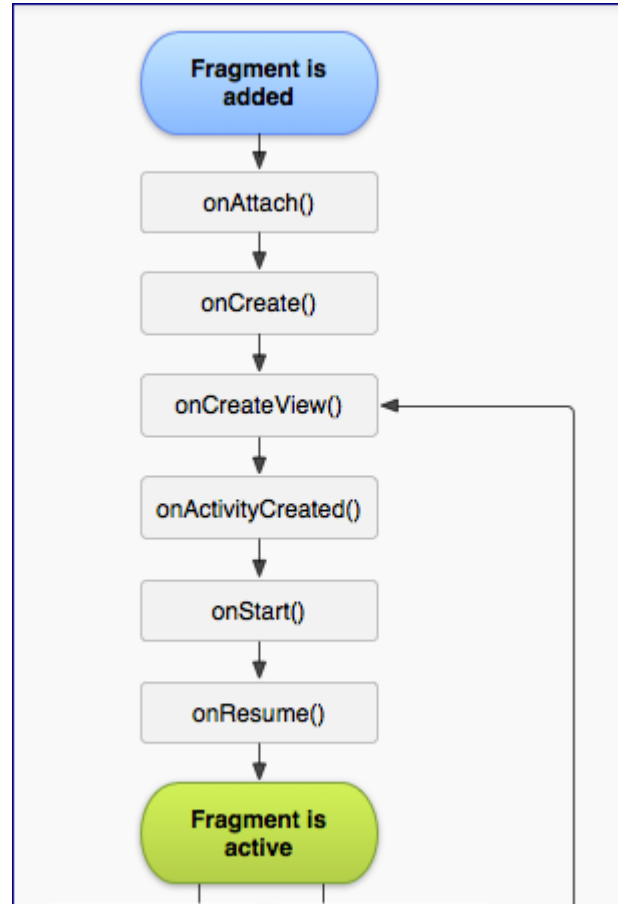
- ▶ Introduced in Android 3.0 (API level 11)
  - To support more dynamic and flexible UI designs on large screens
  - E.g, tablet's screen has more room to combine UI components



Source: <http://developer.android.com/guide/components/fragments.html>

# Fragment Lifecycle

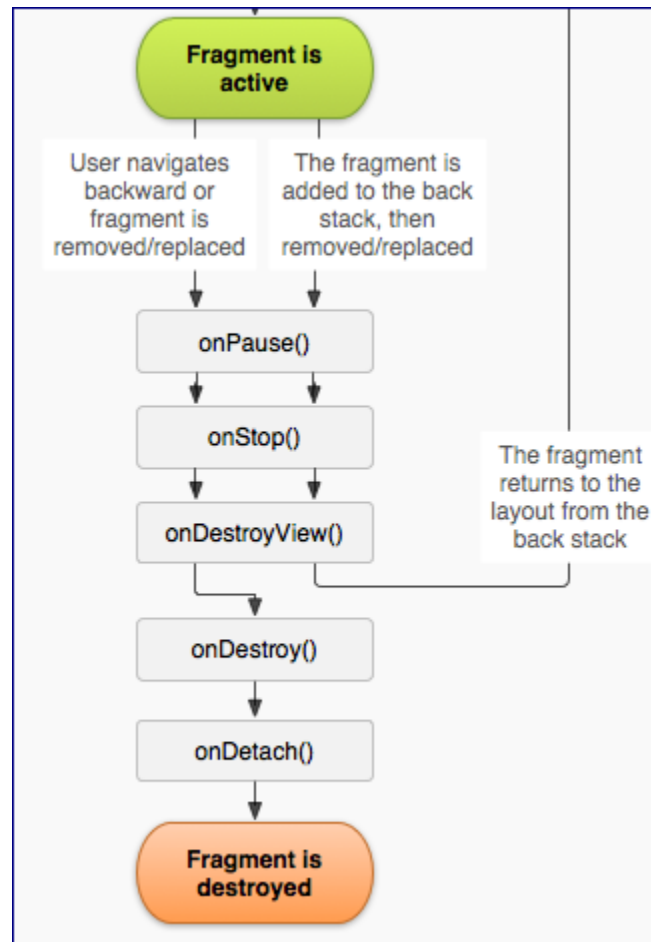
## ► First steps



Source: <http://developer.android.com/guide/components/fragments.html>

# Fragment Lifecycle

## ► Continue



Source: <http://developer.android.com/guide/components/fragments.html>

# Creating a Fragment

- ▶ Subclasses of Fragment class
- ▶ Existing Fragment Subclasses
  - DialogFragment
    - To create a dialog
  - ListFragment
    - To display a list of items managed by an adapter
    - Similar to ListActivity
  - PreferenceFragment
    - To display a hierarchy of Preference objects as a list
    - Similar to PreferenceActivity

# Creating a Fragment

- ▶ Create subclass of Fragment class
- ▶ Normally implement at least
  - **onCreate()**
    - Called when creating the fragment
    - To initialize components of the fragment to retain when it is paused/stopped then resumed
  - **onCreateView()**
    - Called to draw the layout of the fragment
    - Must return a View that is the root of the fragment's layout
  - **onPause()**
    - Called when the user is leaving the fragment
    - To commit any changes that should be persisted beyond the current user session
      - Because the user might not come back



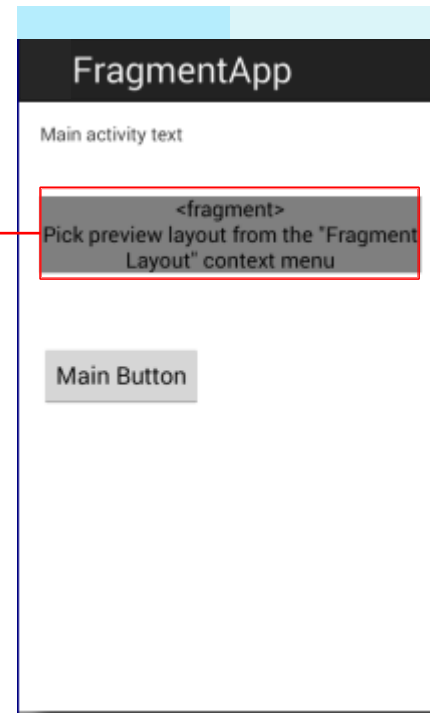
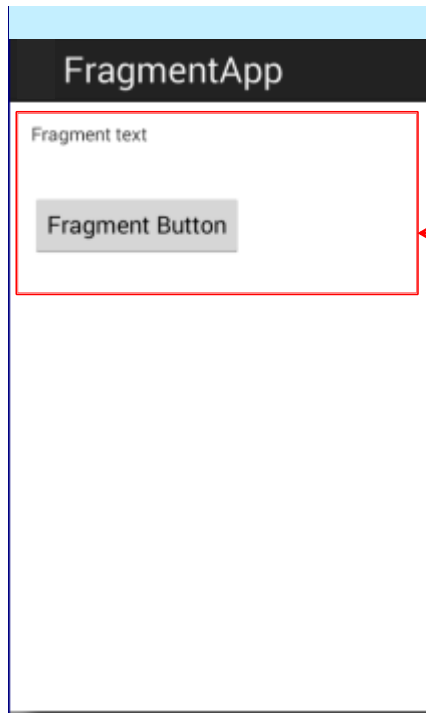
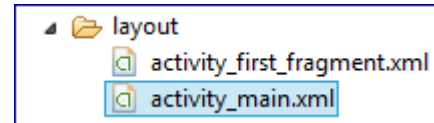
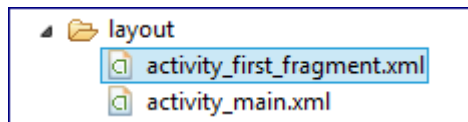
# Creating a Fragment

► E.g,

Parent container for the fragment

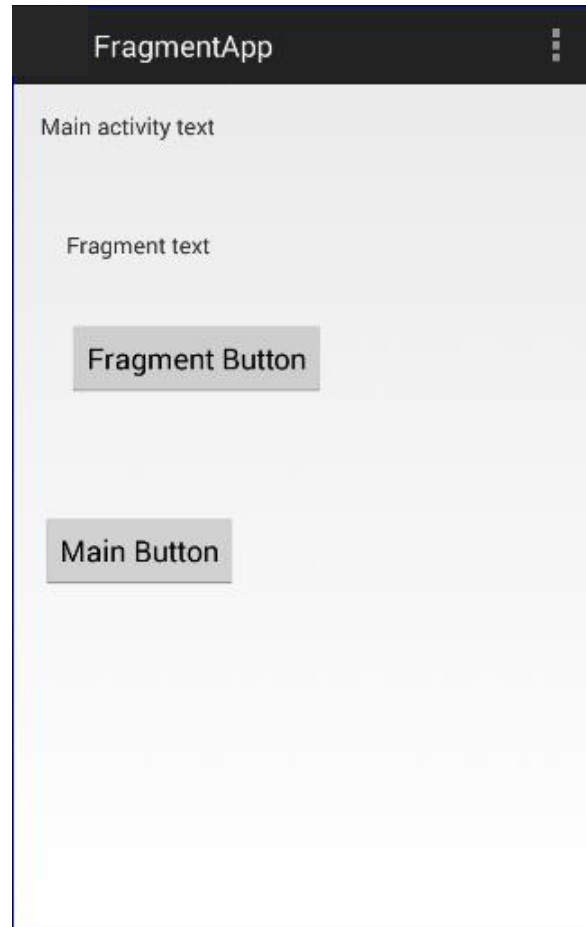
```
public class FirstFragment extends Fragment {  
  
    @Override  
    public View onCreateView(LayoutInflater inflater, ViewGroup container,  
        Bundle savedInstanceState) {  
        return inflater.inflate(R.layout.activity_first_fragment, container, false);  
    }  
}
```

# Adding a Fragment to an Activity



# Adding a Fragment to an Activity

## ► Final layout



# Fragment Transactions

- ▶ Ability to add, remove, replace fragments in response to user interaction
- ▶ Each set of changes that is committed is called a transaction
  - Objects from FragmentTransaction class
- ▶ Possible saving of transaction to a back stack managed by the activity
  - Allowing the user to navigate backward through the fragment changes
  - Similar to navigating backward through activities

# Fragment Transactions

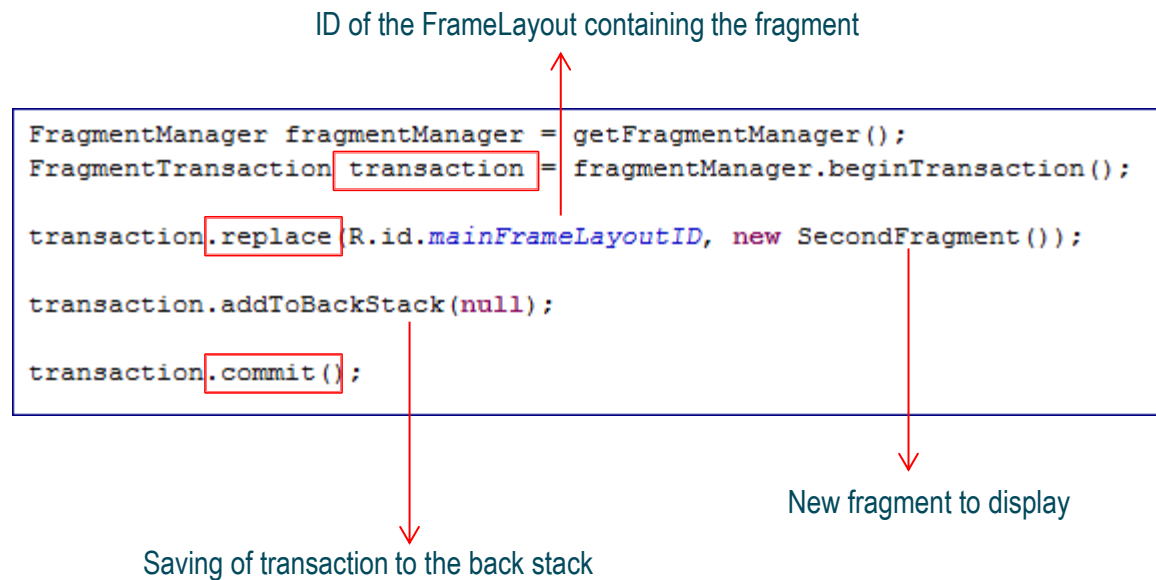
- ▶ E.g, in activity\_main.xml

Frame Layout containing the fragment

```
<RelativeLayout ... >
    <TextView ... />
    <FrameLayout
        android:id="@+id/mainFrameLayoutID"
        ... >
        <fragment
            android:id="@+id/fragment1"
            android:name="com.henallux.fragmentsproject.MainActivityFragment"
            ... />
    </FrameLayout>
    <Button ... />
</RelativeLayout>
```

# Fragment Transactions

- ▶ E.g, in MainActivity



# Webography

- ▶ <http://developer.android.com/guide/components/fragments.html>
- ▶ <http://developer.android.com/training/basics/fragments/index.html>