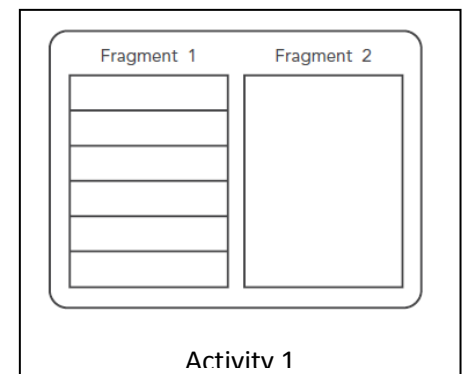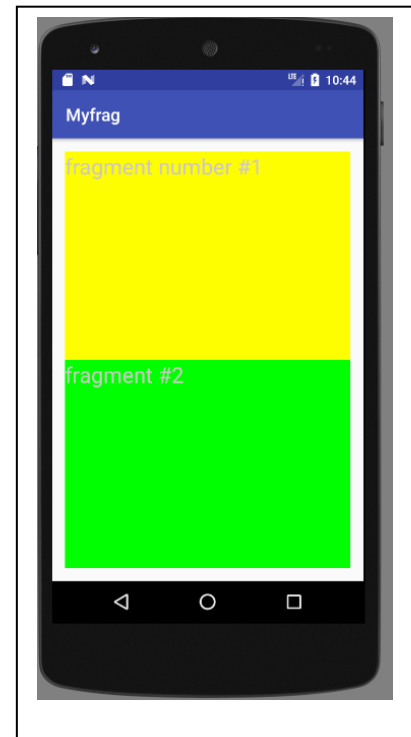# Fragment

- An activity typically fills the entire screen and it is essentially a container for views.
- When an activity is displayed in a large-screen device, such as on a tablet, it is somewhat out of place. Because the screen is much bigger, all the views in an activity must be arranged to make full use of the increased space, resulting in complex changes to the view hierarchy.
- A better approach is to have "mini-activities," each containing its own set of views. During runtime, an activity can contain one or more of these mini-activities
- In Android 3.0 and later, these mini-activities are known as fragments.

- Think of a fragment as another form of activity. You create fragments to contain views, just like activities.
- Fragments are always embedded in an activity.
- A fragment behaves very much like an activity: It has a Java class and it loads its UI from an XML file.
- The XML file contains all the usual UI elements that you expect from an activity: `TextView`, `EditText`, `Button`, and so on.
- To add a fragment to an activity, you use the `<fragment>` element.

Using Fragments:

a. add fragments to an activity by modifying the XML file during design time:

1. Using Android Studio, create a new Android project and name it Fragments
2. In the `res/layout` folder, add a new two layout resource files and name them `fragment1 and fragment2.` by using: right click layputfolder->new-> fragment->fragment(blank)-> add fragment name -> remove all checkbox -> finish.

Fragment1: XML

```xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="vertical"
    android:background="#fffe00"
    tools:context="com.example.itech_mgr.myfrag.BlankFragment">
    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="fragment number #1"
        android:textSize="25sp"
        android:textColor="#ccc6c6"/>

</LinearLayout>
```

Fragment1: Java

```java
package com.example.itech_mgr.myfrag;

import android.os.Bundle;
import android.support.v4.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
/**
 * A simple {@link Fragment} subclass.
 */
public class BlankFragment extends Fragment {

    public BlankFragment() {
        // Required empty public constructor
    }

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_blank, container, false);
    }

}
```

Fragment2: XML

```xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:background="#00ff00"
    android:orientation="vertical"
    tools:context="com.example.itech_mgr.myfrag.BlankFragment2">
    <!-- TODO: Update blank fragment layout -->
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="fragment #2"
        android:textSize="25sp"
        android:textColor="#ccc6c6"/>

</LinearLayout>
```

Fragment2: Java

```java
package com.example.itech_mgr.myfrag;


import android.os.Bundle;
import android.support.v4.app.Fragment;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;


/**
 * A simple {@link Fragment} subclass.
 */
public class BlankFragment2 extends Fragment {


    public BlankFragment2() {
        // Required empty public constructor
    }


    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_blank_fragment2, container,
false);
    }
}
```

MainActivity: XML

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="10dp"
    android:layout_margin="5dp"
    android:orientation="vertical"
    tools:context="com.example.itech_mgr.myfrag.MainActivity">

 <fragment
        android:name="com.example.itech_mgr.myfrag.BlankFragment"
        android:id="@+id/f1"
        android:layout_weight="1"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>

  <fragment
        android:name="com.example.itech_mgr.myfrag.BlankFragment2"
        android:id="@+id/f2"
        android:layout_weight="1"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>


</LinearLayout>
```

MainActivity: Java

```java
package com.example.itech_mgr.myfrag;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```