

Android 101

Piya Lumyong



Topic

- **Setup Tools**
- **Hello Android**
- **File System Structure**
- **Activity & Fragments**
- **Intents**
- **Task & Back stack**
- **Views & Layouts**
- **Response to user-interaction**



Setup Tools



Setup Tools



Setup Tools

- **Android SDK**
- **Genymotion (ต้องการ VirtualBox)**



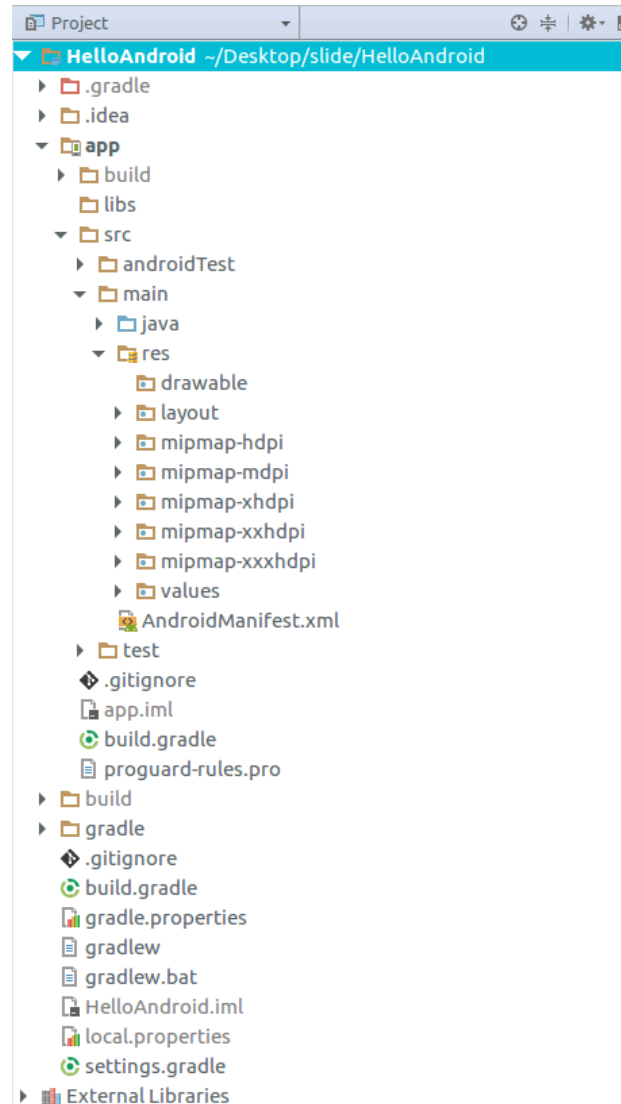
Hello Android



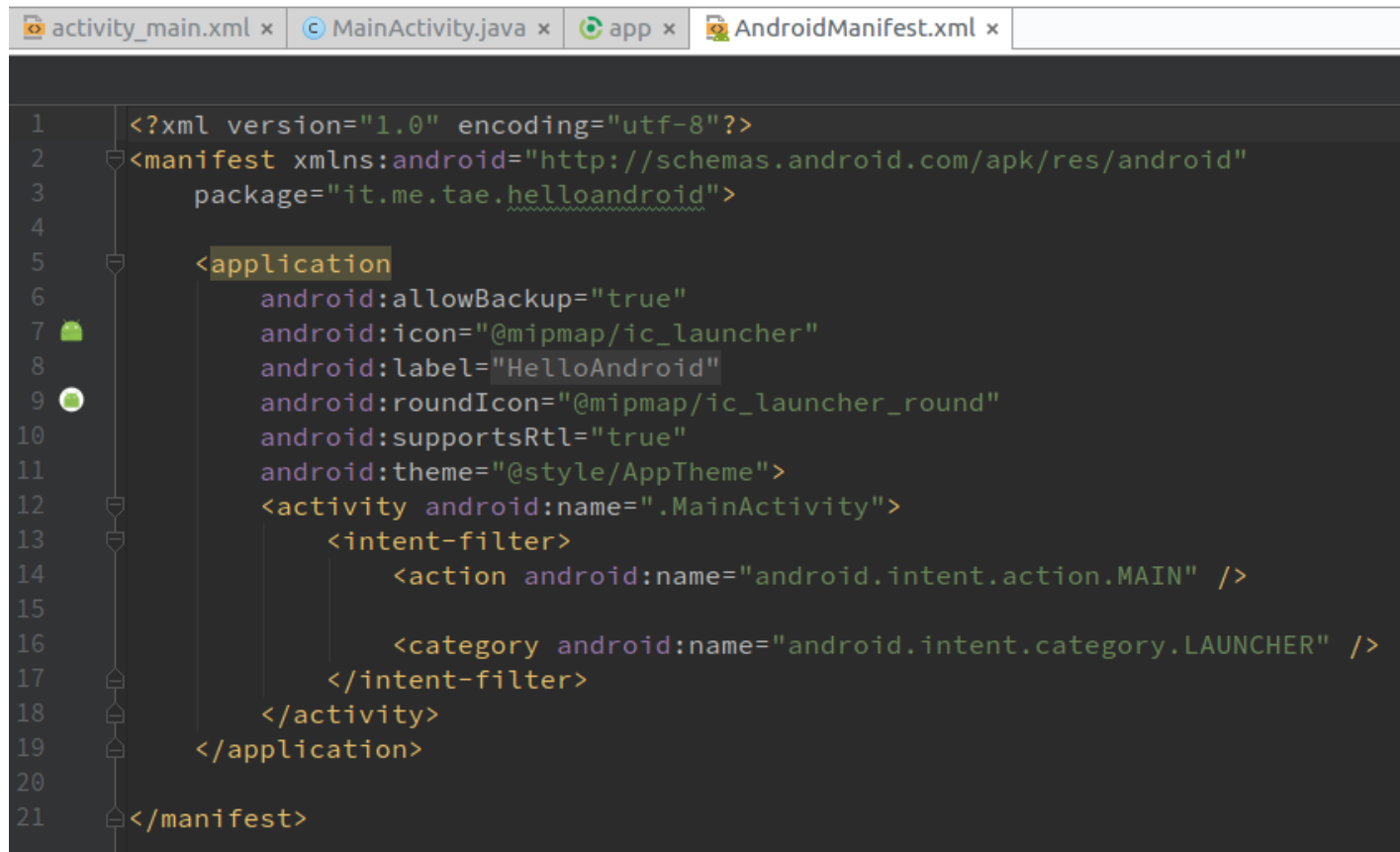
File System Structure



File System Structure



Android Manifest



```
1 <?xml version="1.0" encoding="utf-8"?>
2 <manifest xmlns:android="http://schemas.android.com/apk/res/android"
3     package="it.me.tae.helloandroid">
4
5     <application
6         android:allowBackup="true"
7         android:icon="@mipmap/ic_launcher"
8         android:label="HelloAndroid"
9         android:roundIcon="@mipmap/ic_launcher_round"
10        android:supportsRtl="true"
11        android:theme="@style/AppTheme">
12        <activity android:name=".MainActivity">
13            <intent-filter>
14                <action android:name="android.intent.action.MAIN" />
15
16                <category android:name="android.intent.category.LAUNCHER" />
17            </intent-filter>
18        </activity>
19    </application>
20
21 </manifest>
```

[See more: Manifest file structure](#)



Gradle Build File



```
apply plugin: 'com.android.application'

android {
    compileSdkVersion 25
    buildToolsVersion "25.0.2"
    defaultConfig {
        applicationId "it.me.tae.helloandroid"
        minSdkVersion 19
        targetSdkVersion 25
        versionCode 1
        versionName "1.0"
        testInstrumentationRunner "android.support.test.runner.AndroidJUnitRunner"
    }
    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android.txt'), 'proguard-rules.pro'
        }
    }
}

dependencies {
    compile fileTree(dir: 'libs', include: ['*.jar'])
    androidTestCompile('com.android.support.test.espresso:espresso-core:2.2.2', {
        exclude group: 'com.android.support', module: 'support-annotations'
    })
    compile 'com.android.support:appcompat-v7:25.1.0'
    testCompile 'junit:junit:4.12'
```

Resources

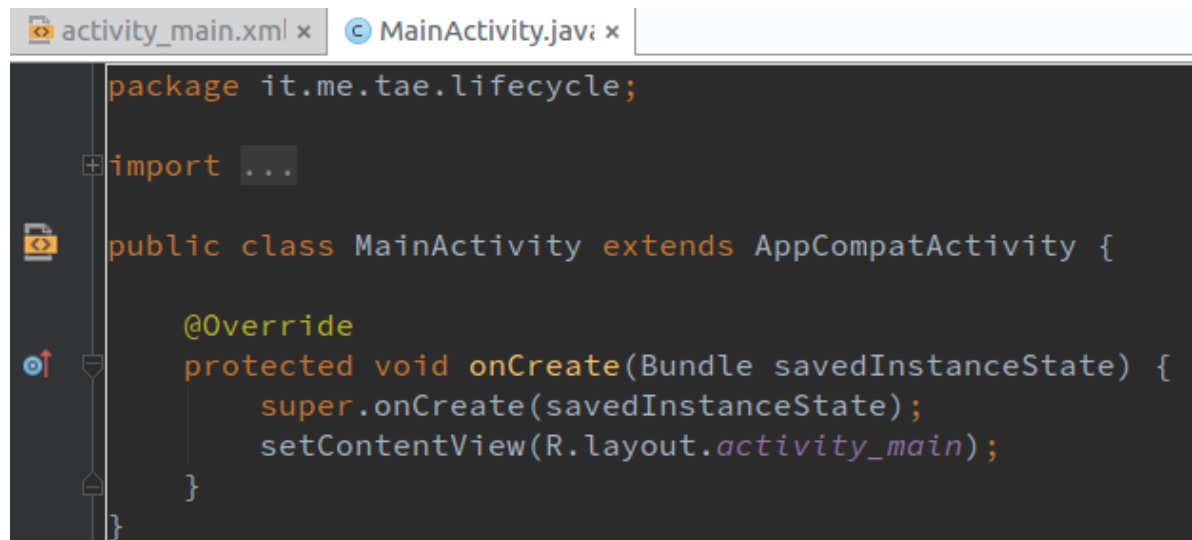
- **animator** - XML files that define **property animations**.
- **anim** - XML files that define **tween animations**.
- **color** - XML files that define a **state list of colors**.
- **drawable** - Bitmap files (.png, .9.png, .jpg, .gif) or XML files that define **drawable resource**.
- **mipmap** - Drawable files for different **launcher icon** densities.
- **layout** - XML files that define a user **interface layout**.
- **menu** - XML files that define application **menus**.
- **raw** - Arbitrary files to save in their **raw** form.
- **values** - XML files that contain simple values, **arrays**, **color**, **dimens**, **strings** and **style**.
- **xml** - Arbitrary XML files.



Activity & Fragments



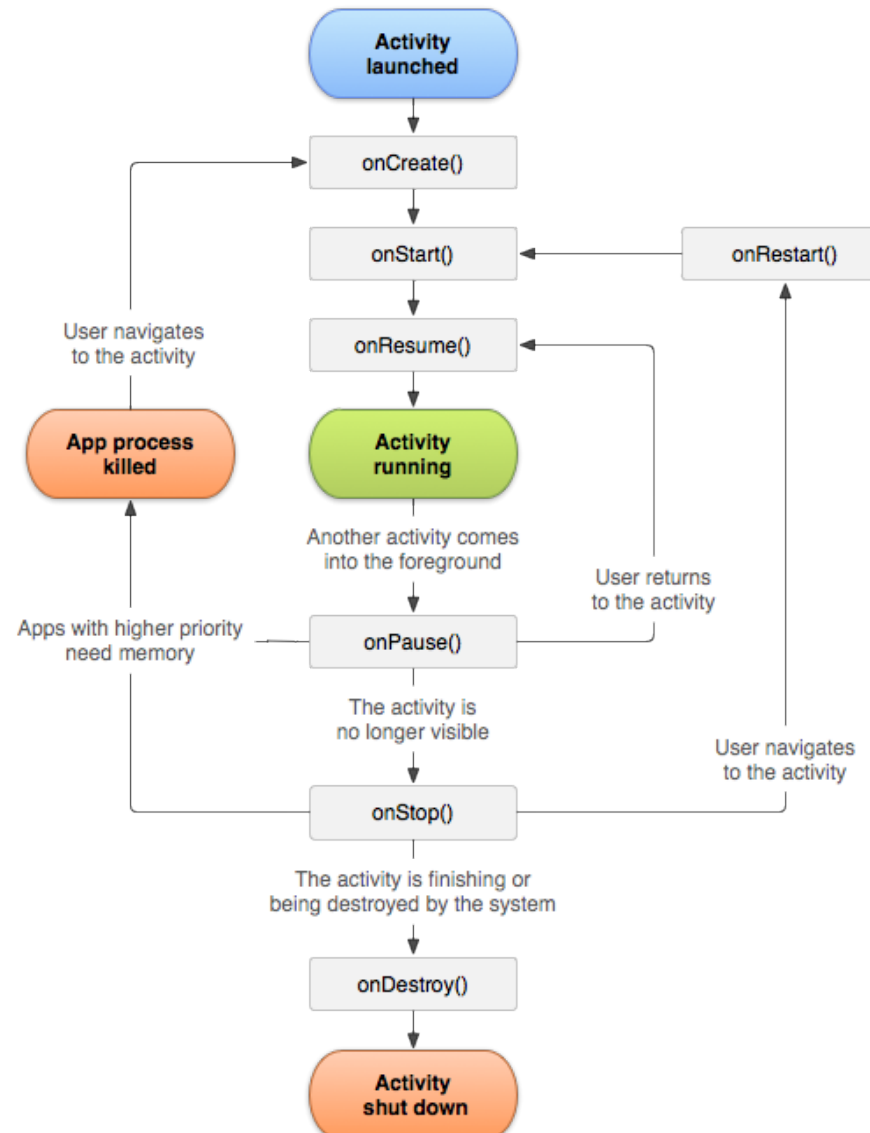
Activity



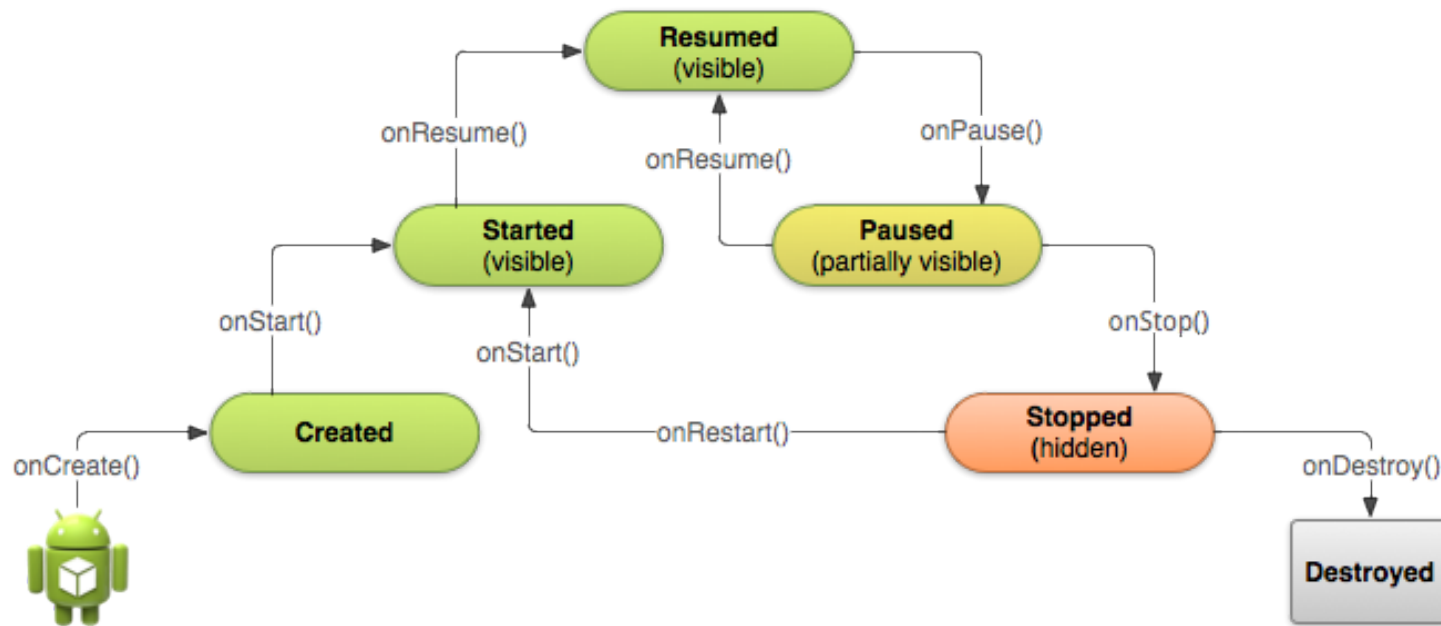
```
activity_main.xml x MainActivity.java x  
package it.me.tae.lifecycle;  
  
import ...  
  
public class MainActivity extends AppCompatActivity {  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
    }  
}
```



Activity Lifecycle



Activity Lifecycle



Fragment

```
public class MyFragment extends Fragment {
    private static final String ARG_PARAM1 = "param1";
    private static final String ARG_PARAM2 = "param2";

    private String mParam1;
    private String mParam2;

    public static MyFragment newInstance(String param1, String param2) {
        MyFragment fragment = new MyFragment();
        Bundle args = new Bundle();
        args.putString(ARG_PARAM1, param1);
        args.putString(ARG_PARAM2, param2);
        fragment.setArguments(args);
        return fragment;
    }

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        if (getArguments() != null) {
            mParam1 = getArguments().getString(ARG_PARAM1);
            mParam2 = getArguments().getString(ARG_PARAM2);
        }
    }

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



Fragment

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/activity_main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context="it.me.tae.lifecycle.MainActivity">

    <FrameLayout
        android:id="@+id/container"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>
</RelativeLayout>
```

```
import ...

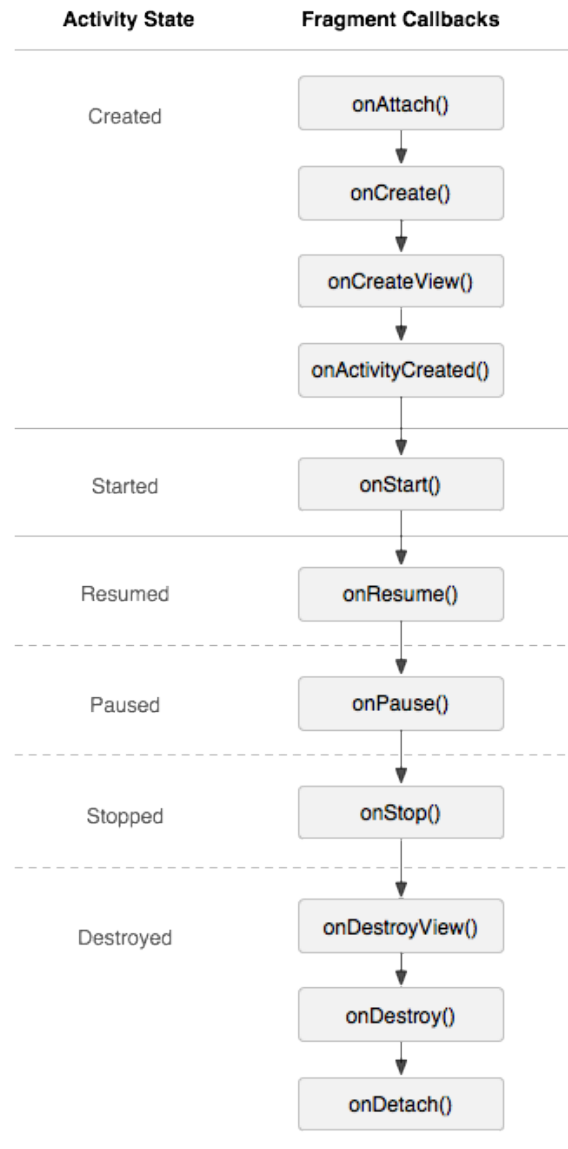
public class MainActivity extends AppCompatActivity {

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

        getSupportFragmentManager().beginTransaction()
            .replace(R.id.container, MyFragment.newInstance("param1", "param2"))
            .commit();
    }
}
```

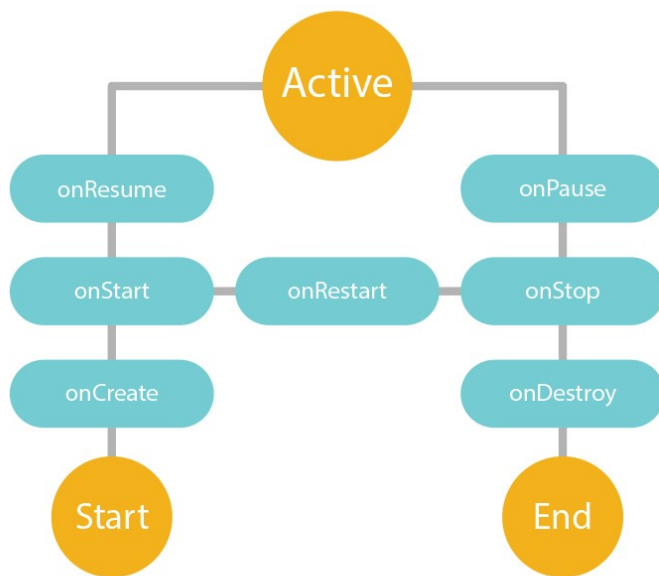


Fragment Lifecycle

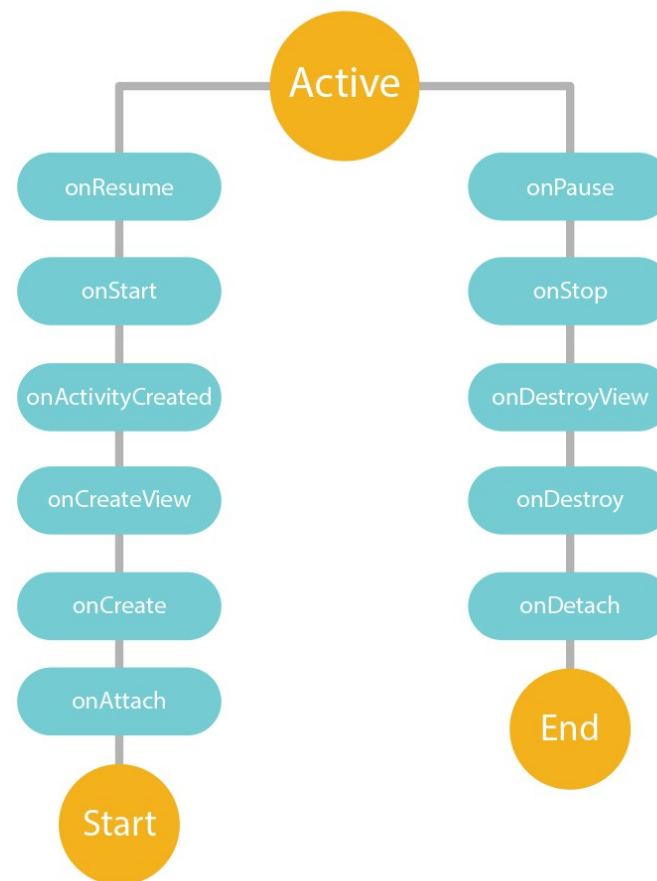


Activity vs Fragment Lifecycle

Activity



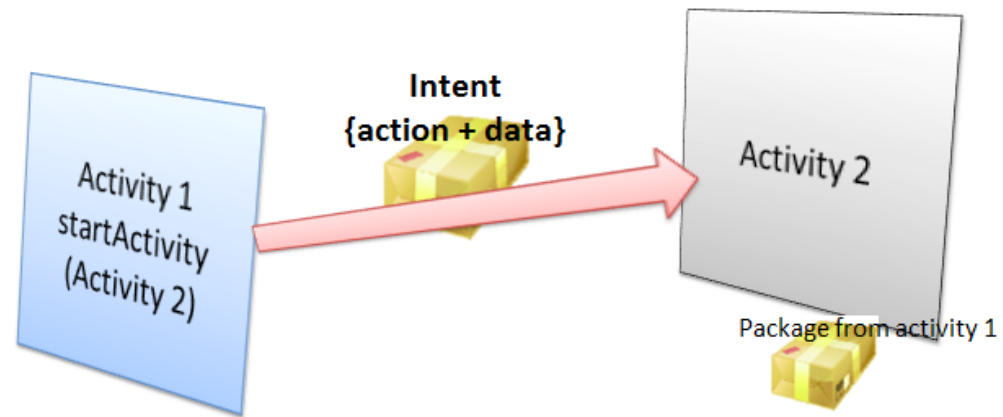
Fragment



Intents



Intent



Intent

- **The primary information contained in an Intent**
 - Component name
 - Action
 - Data
 - Category
 - Extras
 - Flags



Task & Back Stack



Task & Back Stack

- **Launch mode**

- standard
- singleTop
- singleTask
- singleInstance



Views & Layouts



Response to user-interaction

