

WHAT KINDS OF FILES ANDROID APPLICATION

MANIFEST

WHAT IS MANIFEST

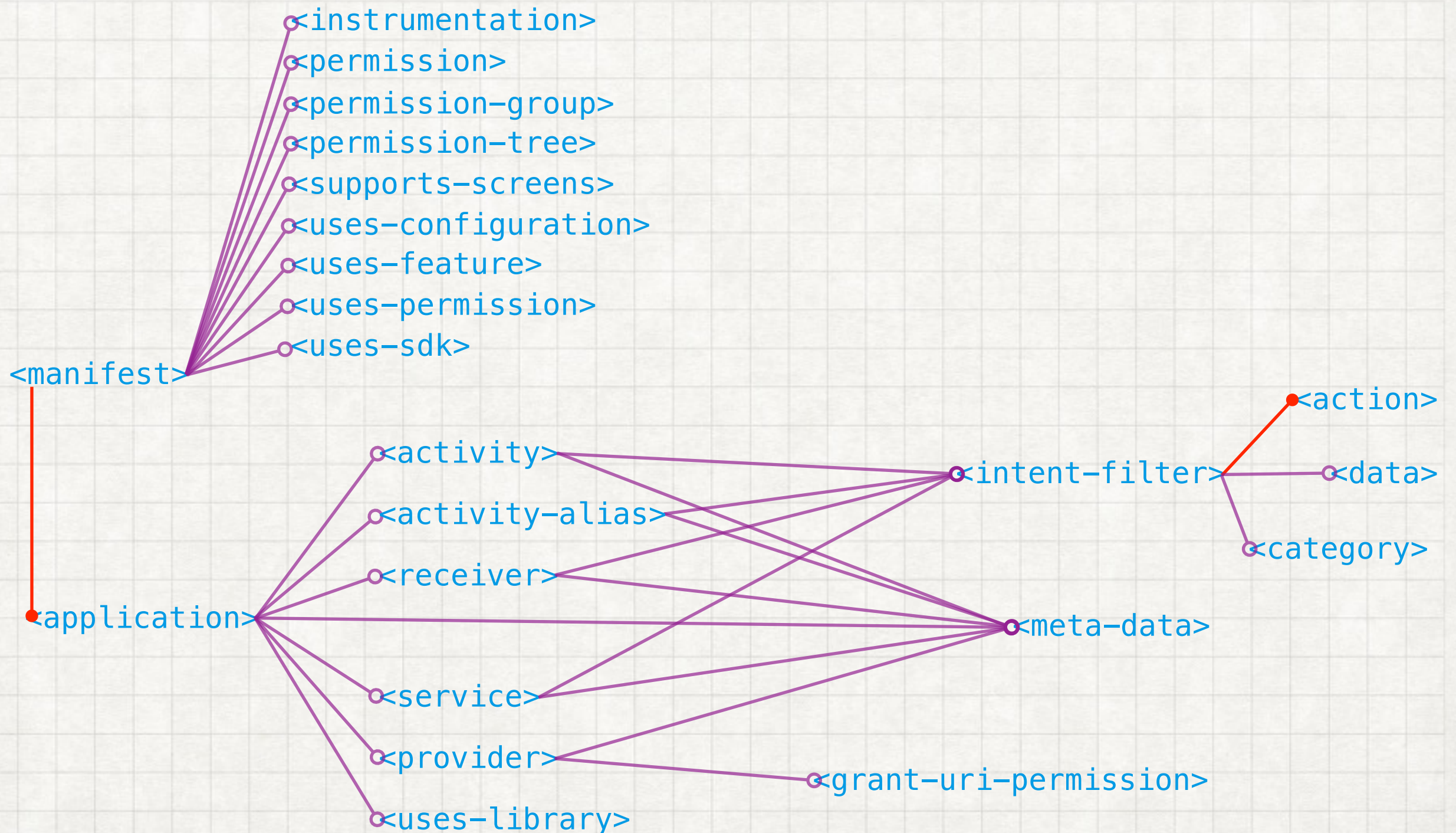
APPLICATION'S MUST HAVE

- 이름 : AndroidManifest.xml
- 위치 : 루트 라이브러리
- 역할 : 필수 정보 - Application 실행에 필요한 정보
 - JAVA 패키지 이름 - Application 고유 식별자
 - 어플리케이션 구성 요소 : Activity, Service, Broadcast Receiver, Content Provider
 - 어플리케이션 권한
 - 최소 Android API 레벨 및 라이브러리 목록

ELEMENT IN MANIFEST FILE

<code><action></code>	Intent-filter의 Action 설정
<code><activity></code>	Activity 선언
<code><activity-alias></code>	특정 Activity를 다른 이름의 Activity로 등록.
<code><application></code>	Application 선언
<code><category></code>	Intent-filter의 Category 설정
<code><data></code>	Intent-filter의 Data 선언
<code><grant-uri-permission></code>	URI 단위로 Content Provider의 권한 설정
<code><instrumentation></code>	Instrumentation 선언
<code><intent-filter></code>	Activity, Service, Broadcast Receiver의 Intent를 선언
<code><manifest></code>	Manifest 파일의 Root
<code><meta-data></code>	name, value 쌍으로 구성된 아이템
<code><permission></code>	권한 선언
<code><permission-group></code>	권한 그룹 선언 - 여러 권한을 하나로 묶음
<code><permission-tree></code>	권한 이름 설정 - 권한 도메인 이름 선언
<code><provider></code>	Content Provider 선언
<code><receiver></code>	Broadcast Receiver 선언
<code><service></code>	Service 선언
<code><supports-screens></code>	지원 가능한 화면 크기 선언
<code><uses-configuration></code>	필요한 기능 타입 선언 - 필요한 네비게이션 타입, 필요한 키보드 타입, 필요한 터치 스크린 타입 선언
<code><uses-feature></code>	필요한 기능 선언 - 필요 기능을 직접 문자값으로 작성
<code><uses-library></code>	사용할 라이브러리 선언
<code><uses-permission></code>	사용해야 할 권한 선언
<code><uses-sdk></code>	필요한 API 레벨 선언

ELEMENT HIERARCHY



STRUCTURE OF THE MANIFEST FILE

WHOLE SALE

```
<?xml version="1.0" encoding="utf-8"?>
<manifest>

    <uses-permission />
    <permission />
    <permission-tree />
    <permission-group />
    <instrumentation />
    <uses-sdk />
    <uses-configuration />
    <uses-feature />
    <supports-screens />
    <compatible-screens />
    <supports-gl-texture />

    <application>
        <activity>
            <intent-filter>
                <action />
                <category />
                <data />
            </intent-filter>
            <meta-data />
        </activity>

        <activity-alias>
            <intent-filter> . . . </intent-filter>
            <meta-data />
        </activity-alias>

        <service>
            <intent-filter> . . . </intent-filter>
            <meta-data/>
        </service>

        <receiver>
            <intent-filter> . . . </intent-filter>
            <meta-data />
        </receiver>

        <provider>
            <grant-uri-permission />
            <meta-data />
            <path-permission />
        </provider>

        <uses-library />
    </application>
</manifest>
```

STRUCTURE OF THE MANIFEST FILE

FEATURES

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<manifest>
```

```
    <uses-permission />
```

```
    <permission />
```

```
    <permission-tree />
```

```
    <permission-group />
```

```
    <instrumentation />
```

```
    <uses-sdk />
```

```
    <uses-configuration />
```

```
    <uses-feature />
```

```
    <supports-screens />
```

```
    <compatible-screens />
```

```
    <supports-gl-texture />
```

```
<application>
```


STRUCTURE OF THE MANIFEST FILE

ACTIVITY AND ALIAS

```
<application>
```

```
    <activity>
```

```
        <intent-filter>
```

```
            <action />
```

```
            <category />
```

```
            <data />
```

```
        </intent-filter>
```

```
        <meta-data />
```

```
    </activity>
```

```
    <activity-alias>
```

```
        <intent-filter> . . . </intent-filter>
```

```
        <meta-data />
```

```
    </activity-alias>
```


STRUCTURE OF THE MANIFEST FILE

SERVICE AND RECEIVER

```
<service>  
    <intent-filter> . . . </intent-filter>  
    <meta-data/>  
</service>
```

```
<receiver>  
    <intent-filter> . . . </intent-filter>  
    <meta-data />  
</receiver>
```

```
<provider>  
    <grant-uri-permission />  
    <meta-data />  
    <path-permission />  
</provider>
```

```
<uses-library />
```

STRUCTURE OF THE MANIFEST FILE

PROVIDER AND USER LIBRARY

```
<provider>  
    <grant-uri-permission />  
    <meta-data />  
    <path-permission />  
</provider>
```

```
<uses-library />
```

```
</application>
```

```
</manifest>
```


MANIFEST & PERMISSION

ALREADY DONE

When Saying Hello

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.bangchangbae.helloworld">

    <permission android:name="bangchangbae.permission.READ_DATABASE" android:protectionLevel="normal"/>

    <application ... >

</manifest>
```

When Using Provider

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.bangchangbae.mygreetinglist">

    <uses-permission android:name="bangchangbae.permission.READ_DATABASE" />

    <application ... >

</manifest>
```

APPLICATION

ALREADY DONE

When Saying Hello

```
<application
  android:allowBackup="true"
  android:icon="@mipmap/ic_launcher"
  android:label="@string/app_name"
  android:supportsRtl="true"
  android:theme="@style/AppTheme">
  <activity ... >

  <receiver ... >

  <service ... >

  <provider ... >
</application>
```


INTENT-FILTER

ALREADY DONE

In Main Activity

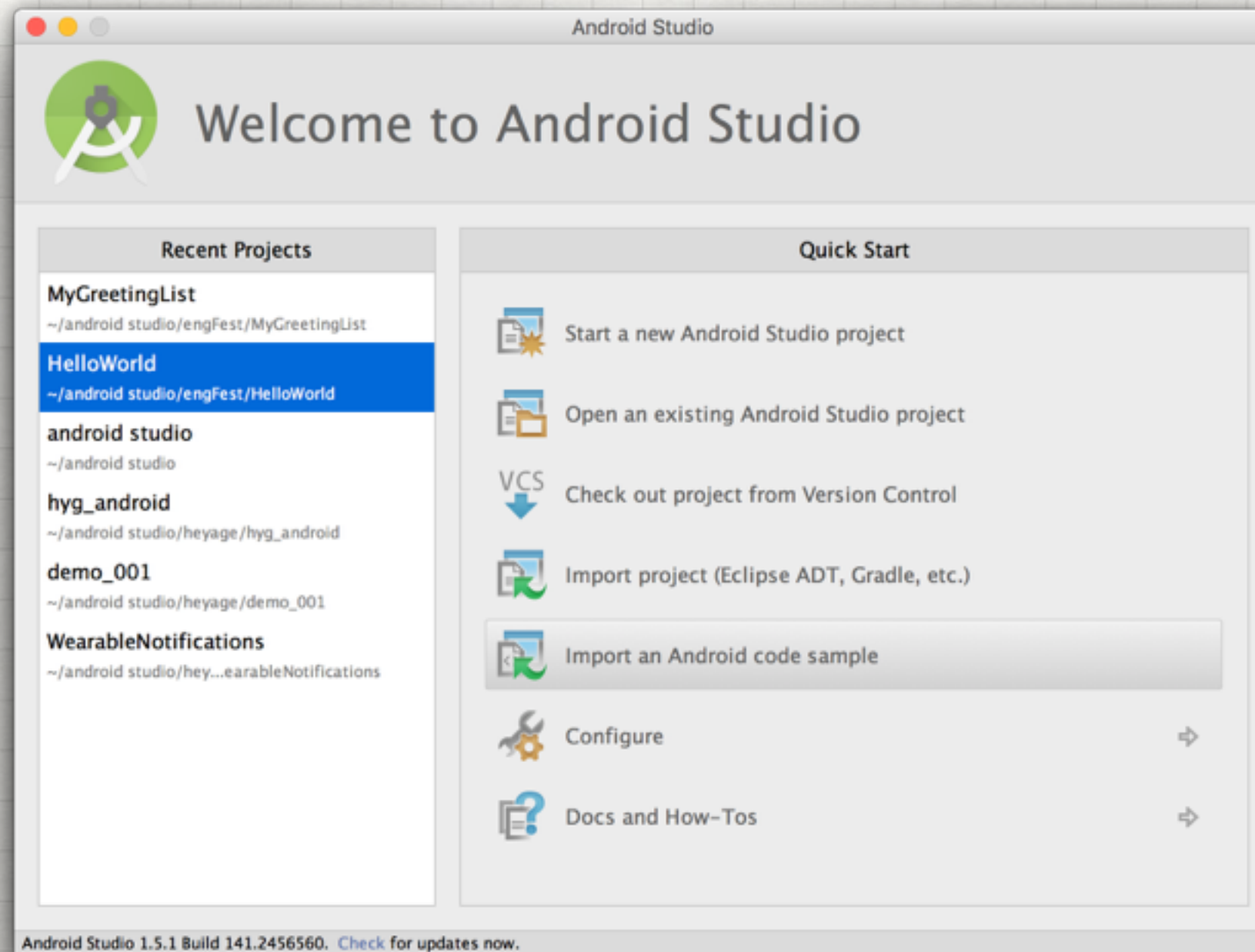
```
<activity
    android:name=".MainActivity"
    android:label="@string/app_name"
    android:theme="@style/AppTheme.NoActionBar">
    <intent-filter>
        <action android:name="android.intent.action.MAIN" />

        <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
</activity>
```

In Broadcast Receiver

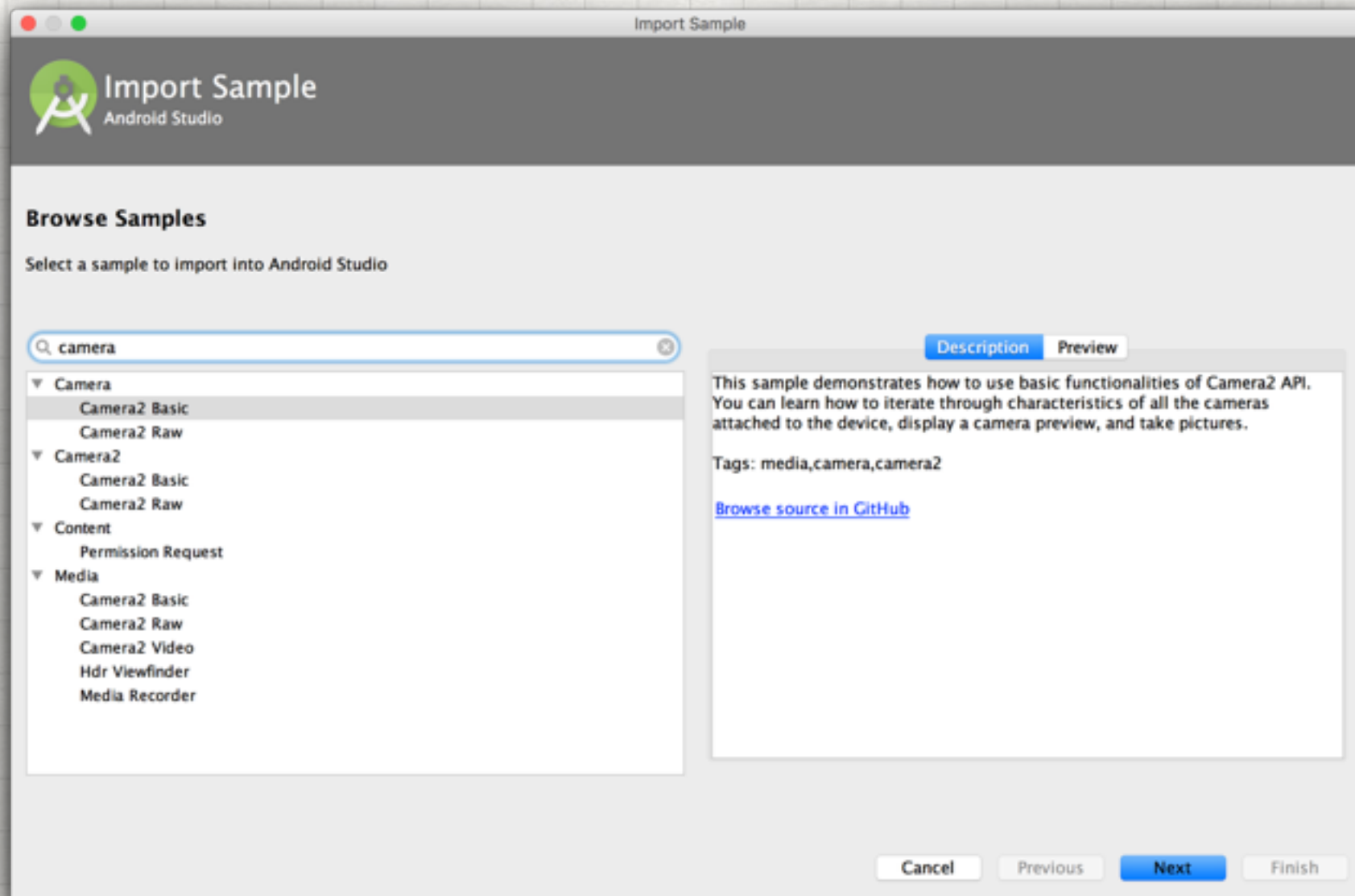
```
<receiver
    android:name=".MyReceiver"
    android:enabled="true"
    android:exported="true">
    <intent-filter>
        <action android:name="com.example.bangchangbae.changetext" />
    </intent-filter>
</receiver>
```

IMPORT A SAMPLE USING HARDWARE

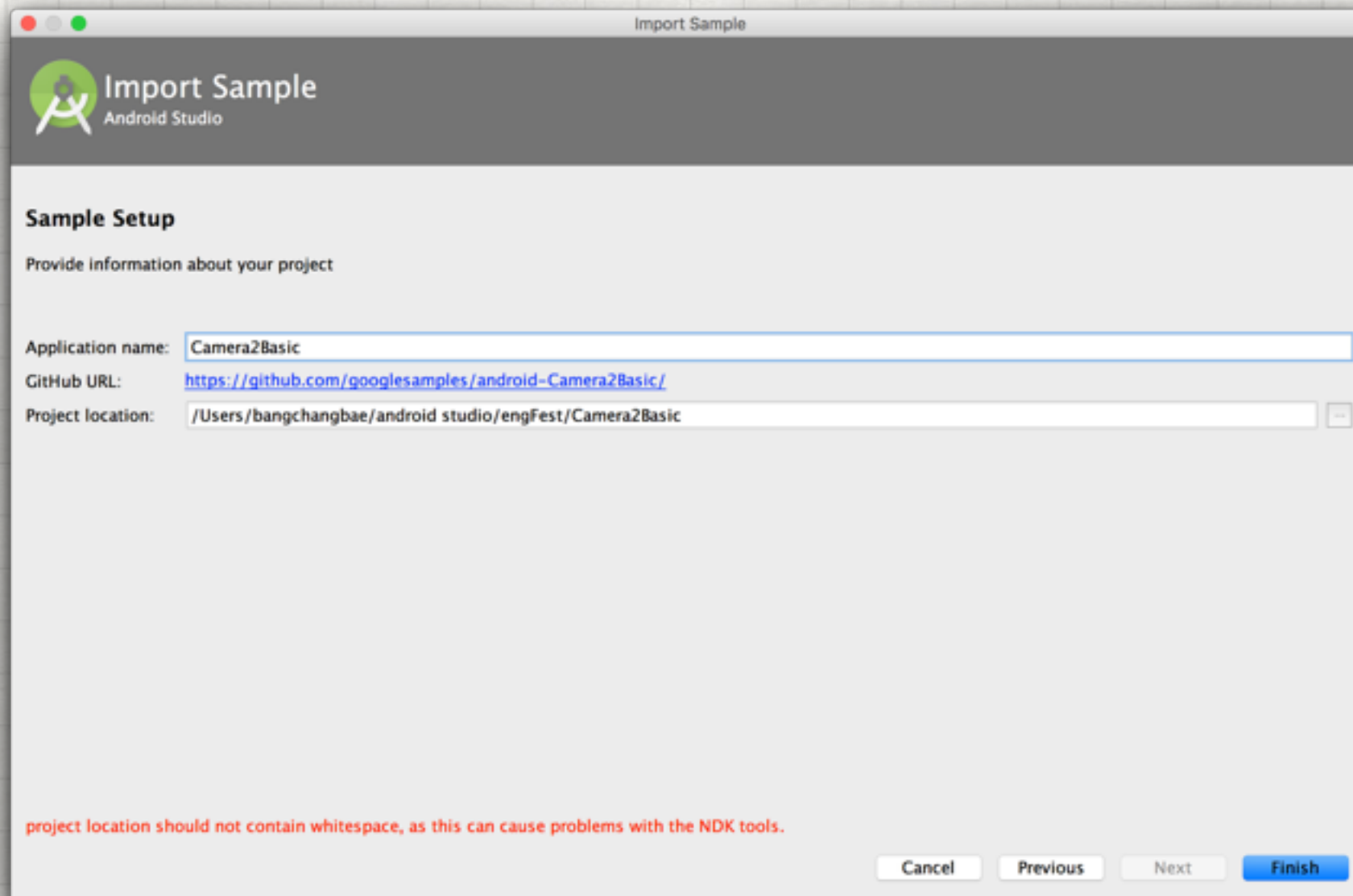


IMPORT CAMERA SAMPLE

USING CAMERA



NAMING YOUR SAMPLE APP



Import Sample

Android Studio

Sample Setup

Provide information about your project

Application name:

GitHub URL:

Project location:

project location should not contain whitespace, as this can cause problems with the NDK tools.

Cancel Previous Next Finish

SAMPLE'S MANIFEST

CAMERA PERMISSION

```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.android.camera2basic">

    <uses-permission android:name="android.permission.CAMERA" />

    <uses-feature android:name="android.hardware.camera" />
    <uses-feature android:name="android.hardware.camera.autofocus" />

    <application android:allowBackup="true"
        android:label="@string/app_name"
        android:icon="@drawable/ic_launcher"
        android:theme="@style/MaterialTheme">

        <activity android:name=".CameraActivity"
            android:label="@string/app_name">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>

</manifest>
```

FEATURE AND PERMISSION

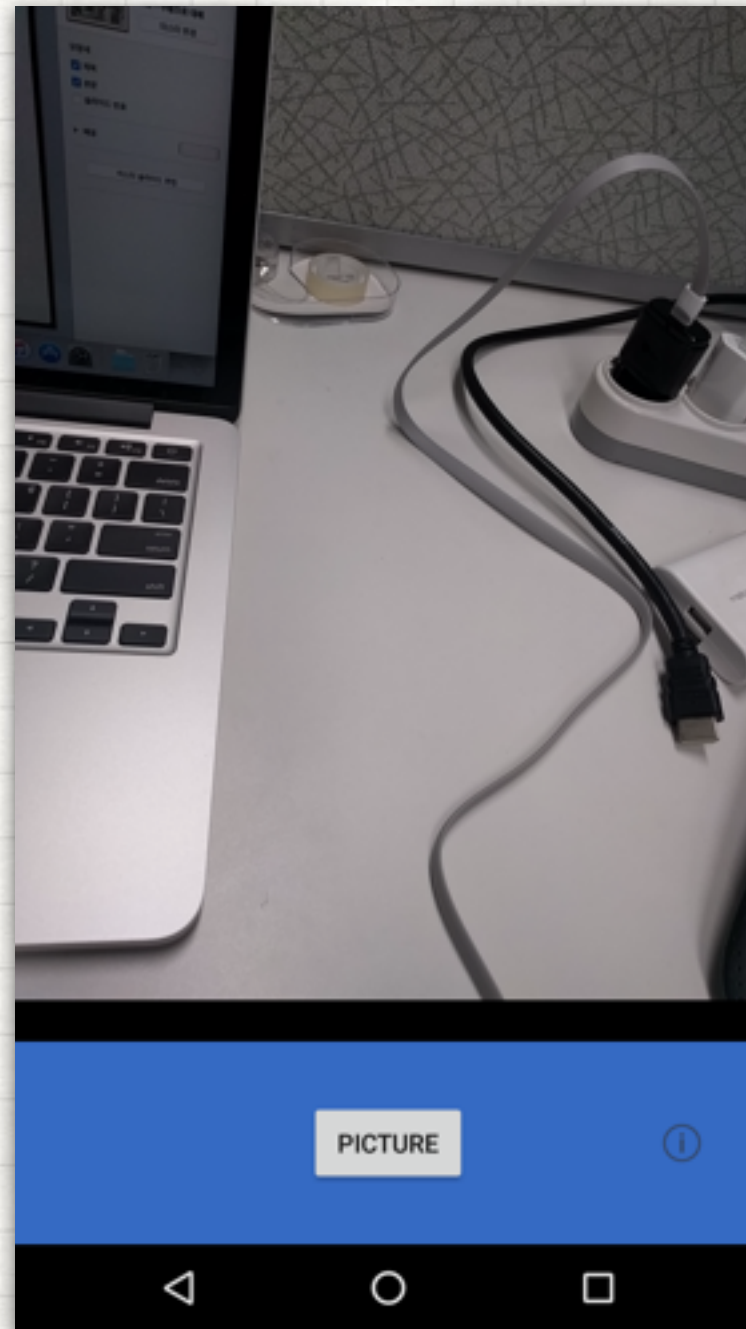
CAMERA

Feature Type	Feature Descriptor
Camera	<code>android.hardware.camera</code>
	<code>android.hardware.camera.autofocus</code>
	<code>android.hardware.camera.flash</code>
	<code>android.hardware.camera.front</code>
	<code>android.hardware.camera.any</code>
	<code>android.hardware.camera.external</code>

<http://developer.android.com/intl/ko/guide/topics/manifest/uses-feature-element.html#features-reference>

LAUNCH CAMERA SAMPLE APPLICATION

CAMERA SAMPLE IS ABLE TO USE CAMERA



LAUNCH CAMERA SAMPLE APPLICATION

CAMERA SAMPLE IS ABLE TO USE CAMERA



RESOURCE

WHAT IS RESOURCE

BEYOND CODES

- 코드가 아닌 이미지 혹은 문자열과 같은 정보를 따로 관리
- res 폴더 안에 위치
 - drawable : 이미지 파일
 - layout : UI 구성 xml 파일(layout 구성)
 - menu : 옵션 메뉴, 컨텍스트 메뉴 등
 - values : 문자열, 색상, 스타일, 면적, 배열 등 텍스트
- 대체 리소스 구성을 위해서 따로 디렉토리 구분
 - 화면 픽셀 밀도(dpi) : ldpi, mdpi, hdpi, xdpi, xxdpi, xxxdpi 등
 - 화면 방향 : port(세로), land(가로)
 - Smallest Width : sw<N>dp (예 : sw600dp)
 - 플랫폼 버전 : v3, v4, v7 등(API Level, Android 6.0: 23, Android 5.1: 22 등)
- <http://developer.android.com/intl/ko/guide/topics/resources/providing-resources.html>

DRAWABLE

ALL THAT IMAGES

- 일반적으로 PNG
- DPI에 맞추어 리소스 : `res/drawable-hdpi/`
- 나인 패치 : 크기 조절 가능 이미지





DPI

PX? DPI? DIP?

- PX : 스크린의 실제 픽셀
- DPI : 1인치당 픽셀 수
 - mdpi: 160dpi, hdpi: 240dpi, xhdpi: 320dpi
- DP(DIP) : Device Independent Pixels, 어떤 해상도에서도 같은 크기 유지
 - $px = dp * (dpi/160)$ - mdip 기준
 - 32dp : mdpi: 32px, hdpi: 48px, xhdpi: 64px, xxhdpi: 96px

COMPARISON

IC_ACTION_INFO.PNG

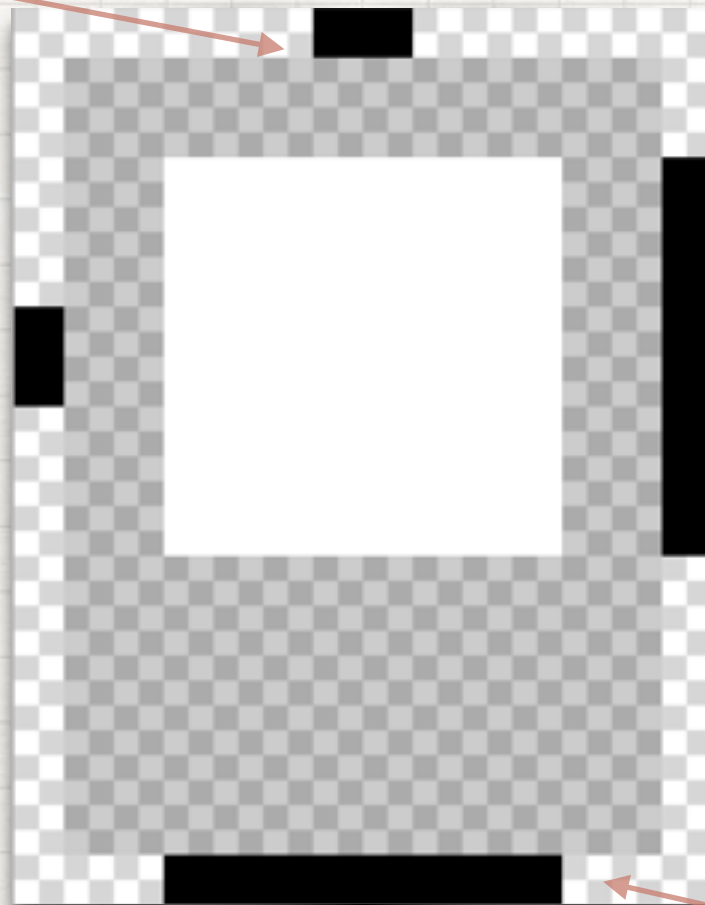
mdpi	hdpi	xhdpi	xxhdpi
			
32px	48px	64px	96px

NINE PATCH

TILE.9.PNG

Scalable Area

Fill Area



USAGE

DRAWABLE AND DP

- layout/fragment_camera2_basic.xml

```
<ImageButton  
    android:id="@+id/info"  
    android:contentDescription="@string/description_info"  
    style="@android:style/Widget.Material.Light.Button.Borderless"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_gravity="center_vertical|right"  
    android:padding="20dp"  
    android:src="@drawable/ic_action_info" />
```

LAYOUT

ALL THAT ARRANGEMENT

- UI 구성
- linear Layout, Relative Layout 등으로 구성
- 내부 Layout에 View가 구성

USAGE

BIND ACTIVITY AND LAYOUT

- CameraActivity.java

```
public class CameraActivity extends Activity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_camera);
        if (null == savedInstanceState) {
            getFragmentManager().beginTransaction()
                .replace(R.id.container, Camera2BasicFragment.newInstance())
                .commit();
        }
    }
}
```

```
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:id="@+id/container"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#000"
    tools:context="com.example.android.camera2basic.CameraActivity" />
```

USAGE

BIND FRAGMENT AND LAYOUT

- CameraActivity.java

```
public class Camera2BasicFragment extends Fragment {  
    @Override  
    public View onCreateView(LayoutInflater inflater, ViewGroup container,  
                             Bundle savedInstanceState) {  
        return inflater.inflate(R.layout.fragment_camera2_basic, container, false);  
    }  
}
```

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent">  
  
    <com.example.android.camera2basic.AutoFitTextureView  
        android:id="@+id/texture"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_alignParentStart="true"  
        android:layout_alignParentTop="true" />  
</RelativeLayout>
```


VALUES

TYPE, ID AND VALUE

- Application 에 사용 되는 값
- String, Color 등을 구성

USAGE

SET BACKGROUND COLOR

```
<FrameLayout
    android:id="@+id/control"
    android:layout_width="match_parent"
    android:layout_height="112dp"
    android:layout_alignParentBottom="true"
    android:layout_alignParentStart="true"
    android:background="@color/control_background">
```

```
<resources>
    <color name="control_background">#cc4285f4</color>
</resources>
```


USAGE

SET BACKGROUND COLOR

```
@Override
public void onClick(View view) {
    switch (view.getId()) {
        case R.id.picture: {
            takePicture();
            break;
        }
        case R.id.info: {
            Activity activity = getActivity();
            if (null != activity) {
                new AlertDialog.Builder(activity)
                    .setMessage(R.string.intro_message)
                    .setPositiveButton(android.R.string.ok, null)
                    .show();
            }
            break;
        }
    }
}
```

```
<resources>
    <string name="picture">Picture</string>
    <string name="description_info">Info</string>
    <string name="request_permission">This sample needs camera permission.</string>
    <string name="camera_error">This device doesn't support Camera2 API.</string>
</resources>
```


USAGE

SET BACKGROUND COLOR

<Button

```
    android:id="@+id/picture"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_gravity="center"  
    android:text="@string/picture" />
```

<ImageButton

```
    android:id="@+id/info"  
    style="@android:style/Widget.Material.Light.Button.Borderless"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:layout_gravity="center_horizontal|bottom"  
    android:contentDescription="@string/description_info"  
    android:padding="20dp"  
    android:src="@drawable/ic_action_info" />
```

<resources>

```
    <string name="picture">Picture</string>  
    <string name="description_info">Info</string>  
    <string name="request_permission">This sample needs camera permission.</string>  
    <string name="camera_error">This device doesn't support Camera2 API.</string>
```

</resources>