

### android 📥



# Android Intent 구현











### 학습 목표

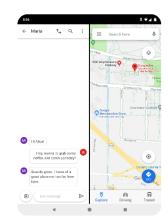
- ■교육 목표
  - Activity
  - ❖ Activity 구현
  - Intent
  - ❖ Activity 데이터 전송 구현











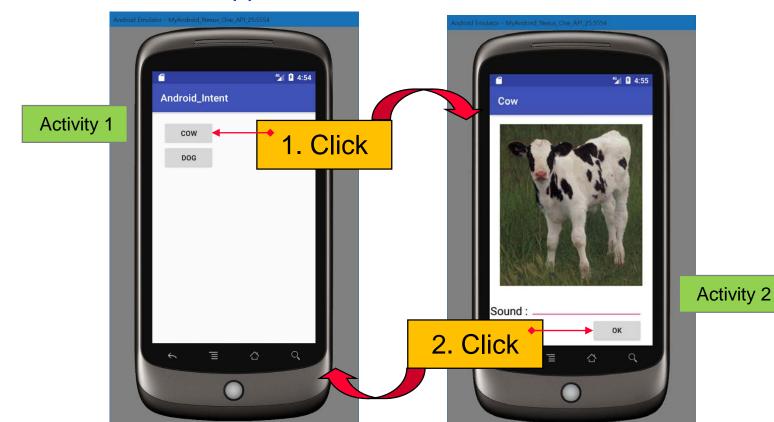






### **Activity**

- Activity 기능
  - ❖ Application의 프리젠테이션 계층
  - ❖ UI component를 화면에 표시
  - ❖ Windows application의 Form과 동일 기능





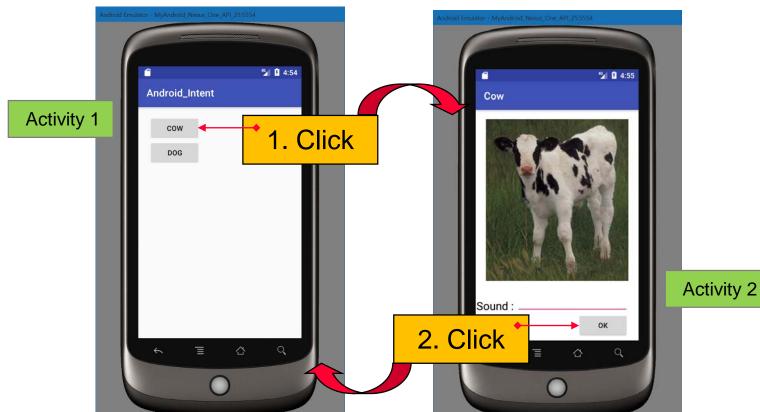






### 실습 1 : Activity 구현

- Android\_Intent 프로젝트 (실습 시간 : 60분)
  - ❖ MainActivity.java 파일을 프로그래밍하여 아래 그림과 같이 구현하시오.
    - ◆ 단계 1 : [Cow] 버튼을 Click하면 Cow Activity 호출







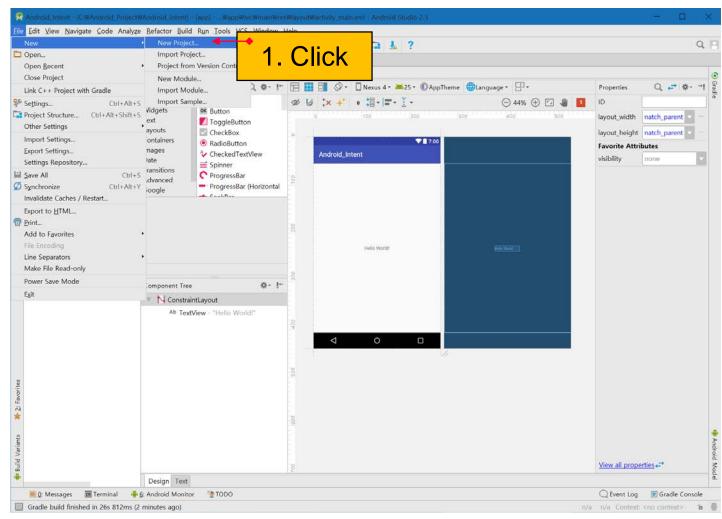




### Activity 구현 (1)

### Android 프로젝트 생성

❖ 프로젝트 명 : Android\_Intent



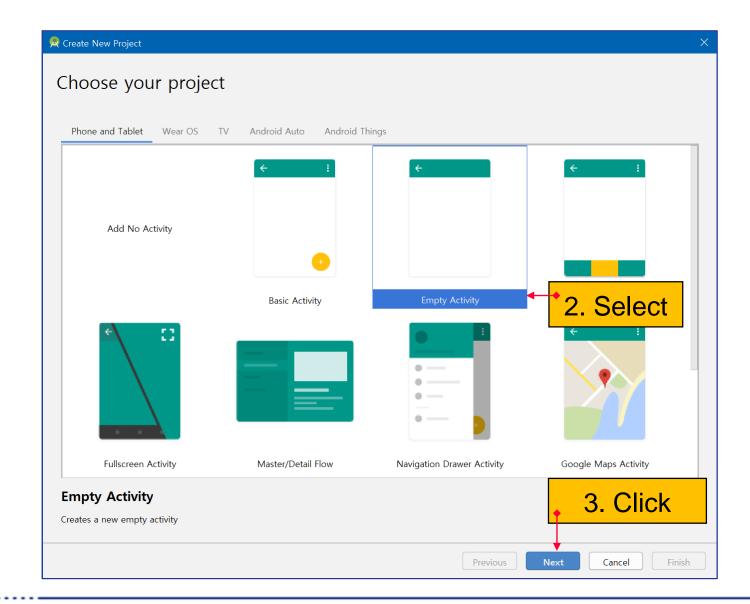








# Activity 구현 (2)



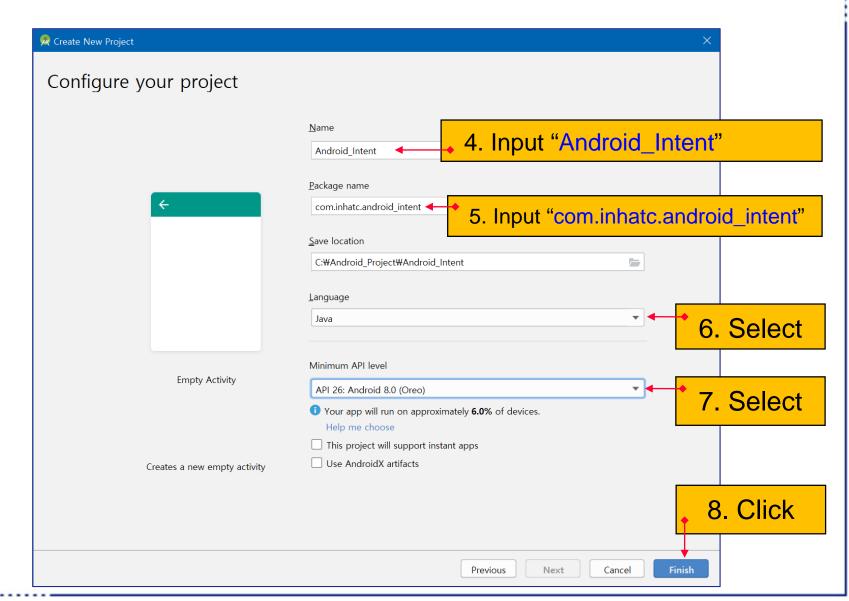








# Activity 구현 (3)





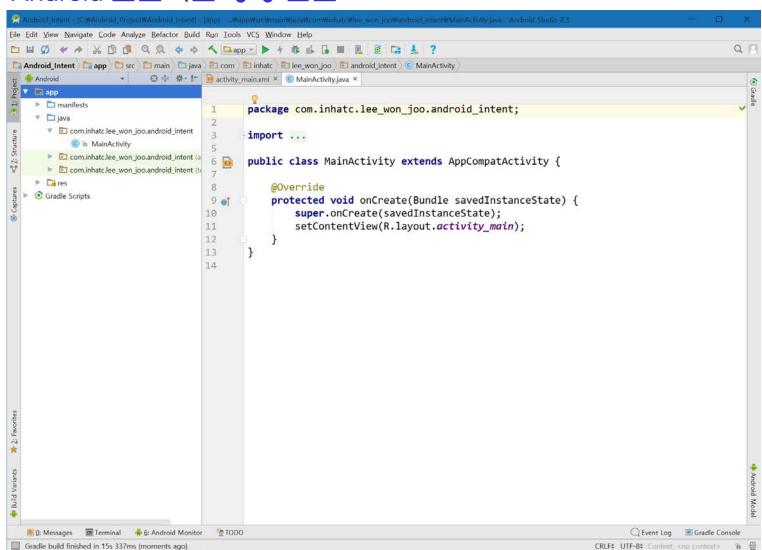






### Activity 구현 (4)

❖ Android 프로젝트 생성 완료







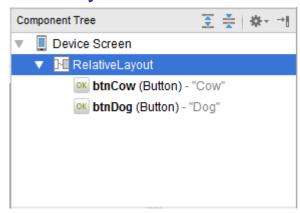




# Activity 구현 (5)

### ■UI 설계

### Activity 1







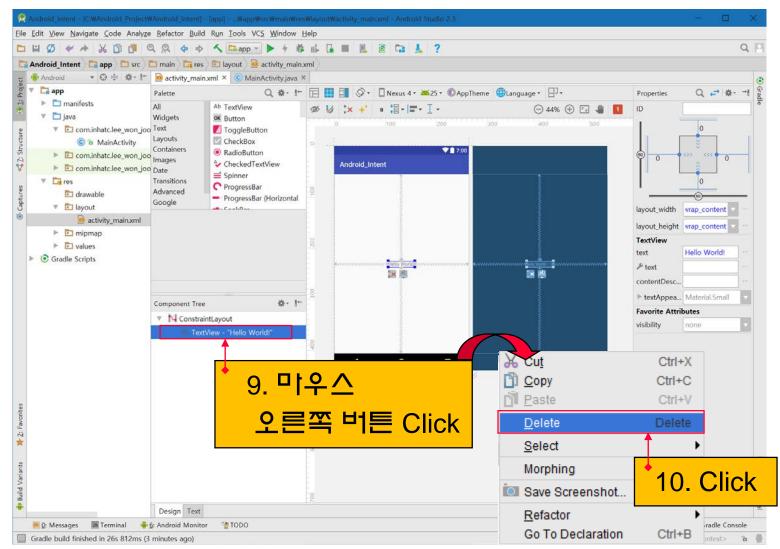






### Activity 구현 (6)

#### ❖ TextView 삭제





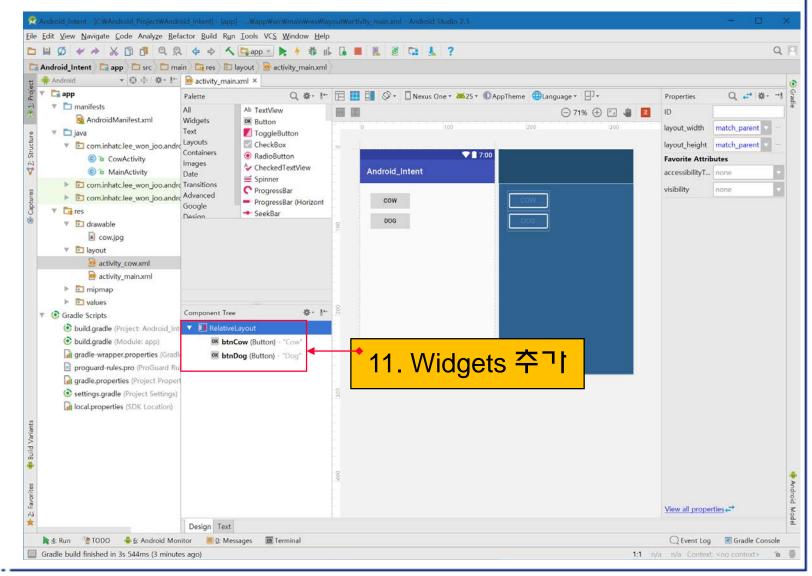






## Activity 구현 (7)

### ❖ Button1, 2 추가











# Activity 구현 (8)

❖ Button1, Button2 속성 지정

컨트롤	속성 지정
Button1	<ul> <li>android:id="@+id/btnCow"</li> <li>android:layout_width="wrap_content"</li> <li>android:layout_height="wrap_content"</li> <li>android:layout_alignParentStart="true"</li> <li>android:layout_alignParentTop="true"</li> <li>android:width="100dip"</li> <li>android:text="Cow"</li> </ul>
Button2	<ul> <li>android:id="@+id/btnDog"</li> <li>android:layout_width="wrap_content"</li> <li>android:layout_height="wrap_content"</li> <li>android:layout_alignParentStart="true"</li> <li>android:layout_alignParentTop="true"</li> <li>android:layout_marginTop="58dp"</li> <li>android:width="100dip"</li> <li>android:text="Dog"</li> </ul>



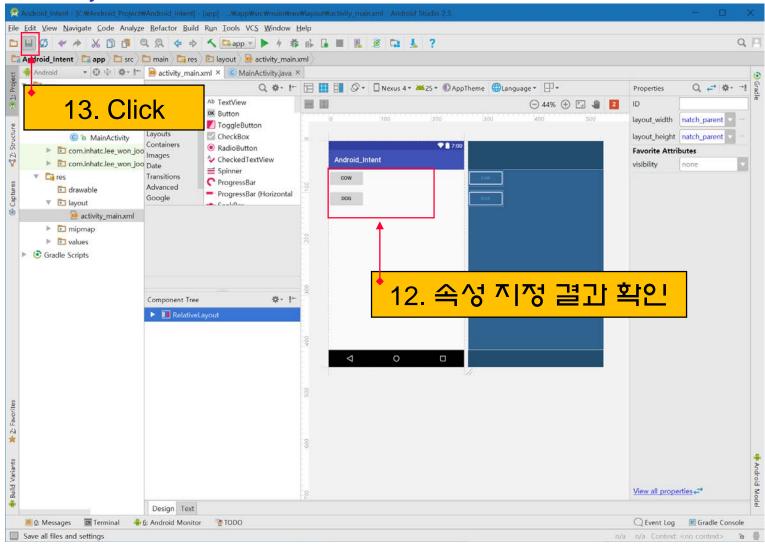






### Activity 구현 (9)

❖ activity\_main.xml べっぴ





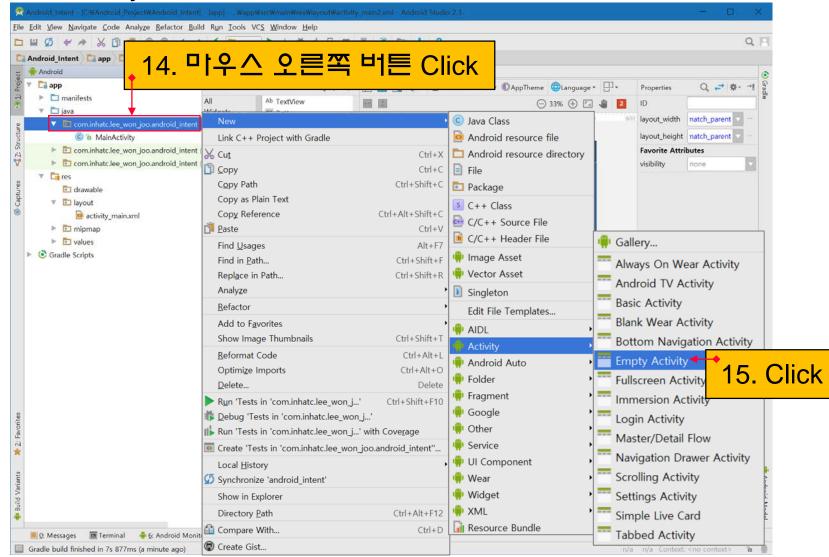






### Activity 구현 (10)

### ■ Activity 夲 ¹ i



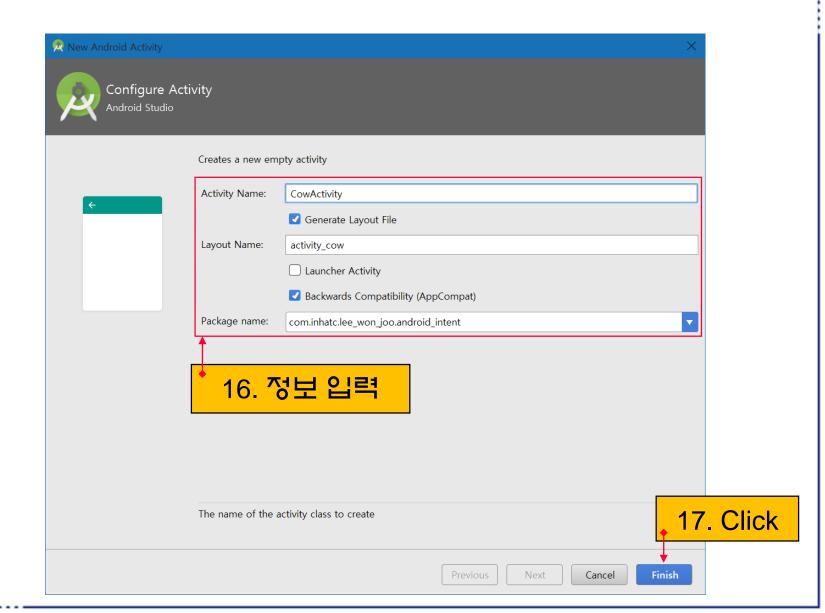








# Activity 구현 (11)









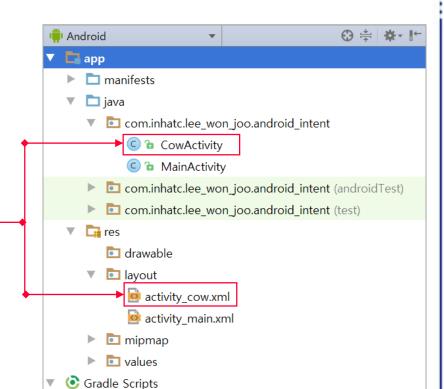


# Activity 구현 (12)

- ❖ CowActivity.java ৺ৢ
- activity\_cow.xml প্র'ঝ

18. 파일 생성

- CowActivity.java
- activity\_cow.xml



**build.gradle** (Project: Android Intent)

gradle.properties (Project Properties)
settings.gradle (Project Settings)
local.properties (SDK Location)

gradle-wrapper.properties (Gradle Version)
proguard-rules.pro (ProGuard Rules for app)

**build.gradle** (Module: app)

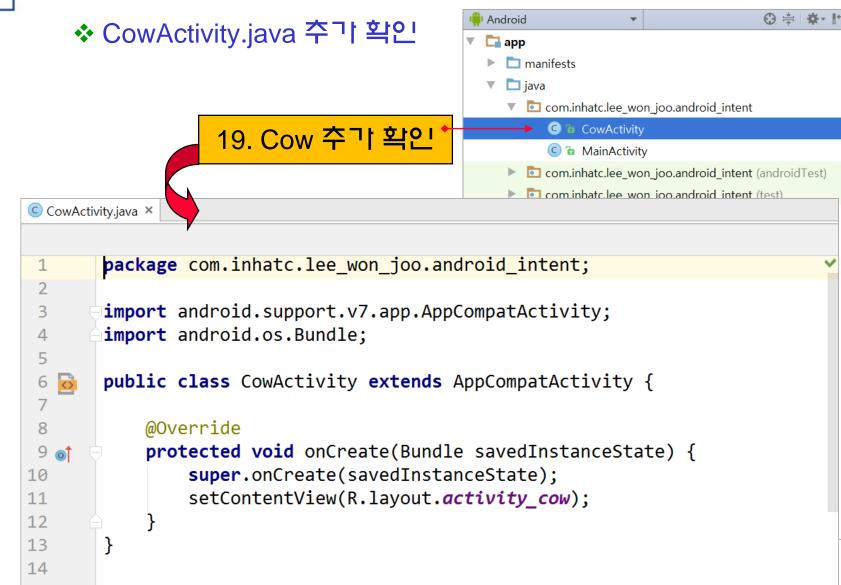








# Activity 구현 (13)





## Activity 구현 (14)

❖ AndroidManifest.xml 확인

```
AndroidManifest.xml ×
       <?xml version="1.0" encoding="utf-8"?>
       <manifest xmlns:android="http://schemas.android.com/apk/res/android"</pre>
           package="com.inhatc.lee won joo.android intent">
           <application</a>
               android:allowBackup="true"
7 🛎
               android:icon="@mipmap/ic launcher"
               android:label="Android Intent"
8
               android:roundIcon="@mipmap/ic launcher round"
9
               android:supportsRtl="true"
10
               android:theme="@style/AppTheme">
11
               <activity android:name=".MainActivity">
12
                   <intent-filter>
13
                        <action android:name="android.intent.action.MAIN" />
14
15
                        <category android:name="android.intent.category.LAUNCHER" />
16
                   </intent-filter>
17
               </activity>
18
               <activity android:name=".CowActivity"
19
                   android:label="@string/title activity cow">
20
               </activity>
21
           </application>
22
23
       </manifest>
24
                                      20. CowActivity 추가 확인
25
Text Merged Manifest
```



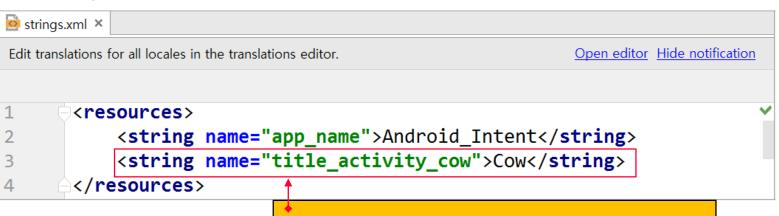






# Activity 구현 (15)

❖ String.xml 확인



21. Setting "title\_activity\_cow"









## Activity 구현 (16)

### Intent Filter

- Action
  - ◆ ACTION\_MAIN, ACTION\_VIEW, ACTION\_EDIT 정의
- ❖ Data
  - URI(Uniform Resource Identifier)
  - Database<sup>o</sup> I data
  - ◆ Type, Scheme, Authority, Path
- Category
  - ◆ 실행할 action에 대한 부가 정보 제공
- ❖ 예

```
<intent-filter>
   <action android:name="android.intent.action.VIEW" />
   <action android:name="android.intent.action.EDIT" />
   <action android:name="android.intent.action.PICK" />
    <category android:name="android.intent.category.DEFAULT" />
    <data mimeType:name="vnd.android.cursor.dir/vnd.google.note" />
</intent-filter>
```













extends Object implements Parcelable

iava.lang.Object

Landroid content IntentFilter





#### Action

#### **Standard Activity Actions**

These are the current standard actions that Intent defines for launching activities (usually through startActivity(Intent). The most important, and by far most frequently used, are ACTION MAIN and ACTION EDIT.

- · ACTION MAIN
- ACTION VIEW
- · ACTION ATTACH DATA
- ACTION EDIT
- ACTION PICK
- ACTION CHOOSER
- · ACTION GET CONTENT
- · ACTION DIAL
- ACTION CALL
- ACTION SEND
- ACTION SENDTO
- · ACTION ANSWER
- ACTION INSERT
- ACTION DELETE
- ACTION RUN
- ACTION SYNC
- · ACTION PICK ACTIVITY
- · ACTION SEARCH
- ACTION WEB SEARCH
- ACTION FACTORY TEST

#### public static final String ACTION\_MAIN

Activity Action: Start as a main entry point, does not expect to receive data.

Input: nothing

Output: nothing

Constant Value: "android.intent.action.MAIN"

#### public static final String ACTION EDIT

Activity Action: Provide explicit editable access to the given data.

Input: getData() is URI of data to be edited.

Output: nothing.

Constant Value: "android.intent.action.EDIT"









## Activity 구현 (18)

- Data
  - **◆** ACTION EDIT
    - 편집할 파일의 URI 지정
  - **◆** ACTION CALL
    - 전화할 전화번호 지정 : tel: 02-555-1234
  - ◆ ACTION\_VIEW
    - 다운로드, 표현할 data의 URI 지정
  - URI(Uniform Resource Identifier)
    - scheme://host:port/path

http://www.inhatc.ac.kr:8080/main.asp

◆ MIME type











# Activity 구현 (19)

- Category
  - **♦** Constant

Constant	Meaning
CATEGORY_BROWSABLE	The target activity can be safely invoked by the browser to display data referenced by a link — for example, an image or an e-mail message.
CATEGORY_GADGET	The activity can be embedded inside of another activity that hosts gadgets.
CATEGORY_HOME	The activity displays the home screen, the first screen the user sees when the device is turned on or when the HOME key is pressed.
CATEGORY_LAUNCHER	The activity can be the initial activity of a task and is listed in the top-level application launcher.
CATEGORY_PREFERENCE	The target activity is a preference panel.





- addCategory()
- removeCategory()
- getCategories()



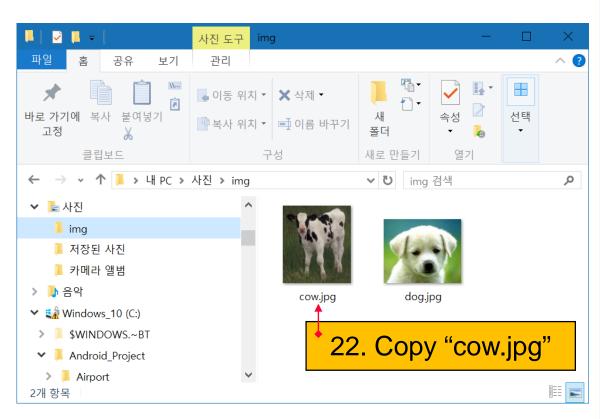




## Activity 구현 (20)

- ❖ Image 파일 선택
  - cow.jpg









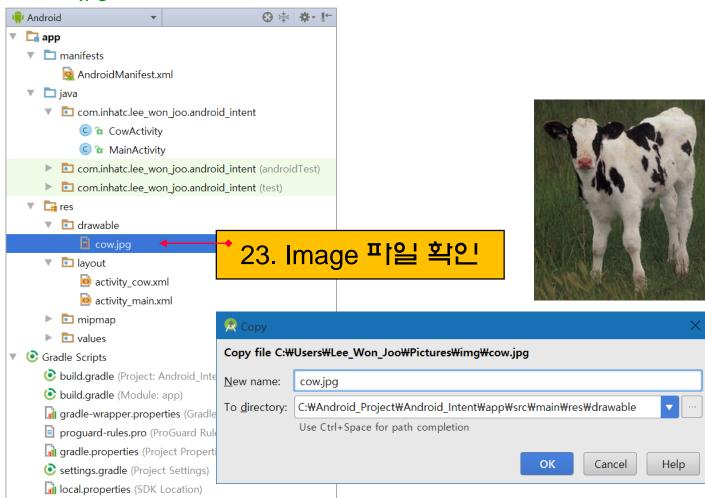




### Activity 구현 (21)

❖ Image 파일 import 확인

◆ cow.jpg





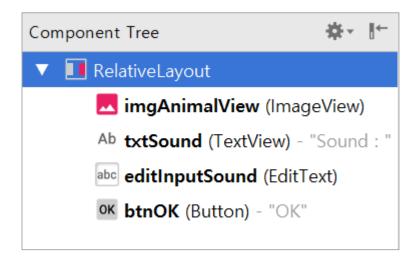


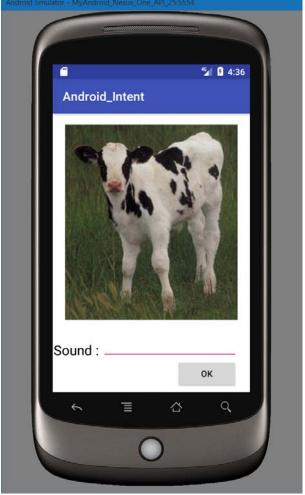




## Activity 구현 (22)

■ activity\_cow.xml 파일 UI 설계







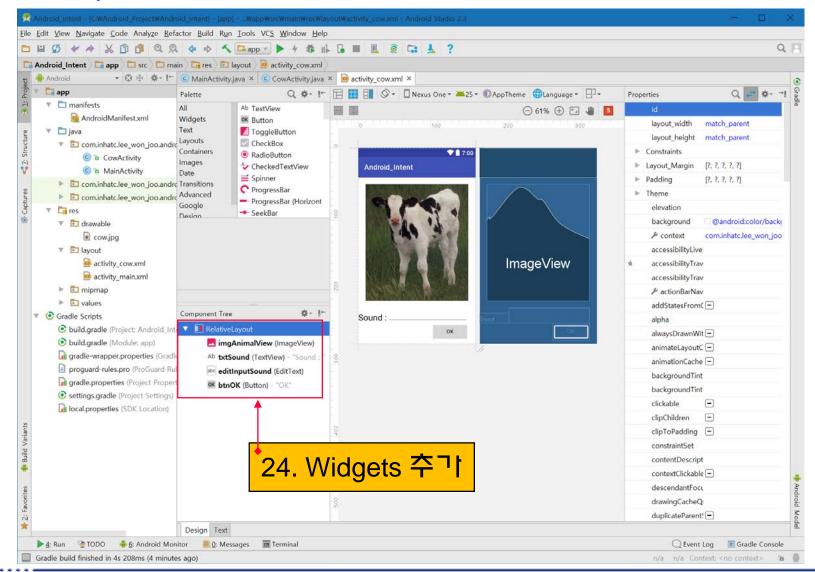






### Activity 구현 (23)

### ❖ activity\_cow.xml 추가 완료











# Activity 구현 (24)

❖ ImageView, TextView 속성 제정

컨트롤	속성 지정
ImageView	<ul> <li>android:id="@+id/imgAnimalView"</li> <li>android:layout_width="wrap_content"</li> <li>android:layout_height="wrap_content"</li> <li>android:src="@drawable/cow"</li> <li>android:layout_alignParentTop="true"</li> <li>android:layout_centerHorizontal="true"</li> <li>android:layout_marginTop="30dp"</li> </ul>
TextView	<ul> <li>android:id="@+id/txtSound"</li> <li>android:layout_width="wrap_content"</li> <li>android:layout_height="wrap_content"</li> <li>android:text="Sound:"</li> <li>android:textSize="10pt"</li> <li>android:layout_alignBottom="@+id/editInputSound"</li> <li>android:layout_alignParentStart="true"</li> </ul>



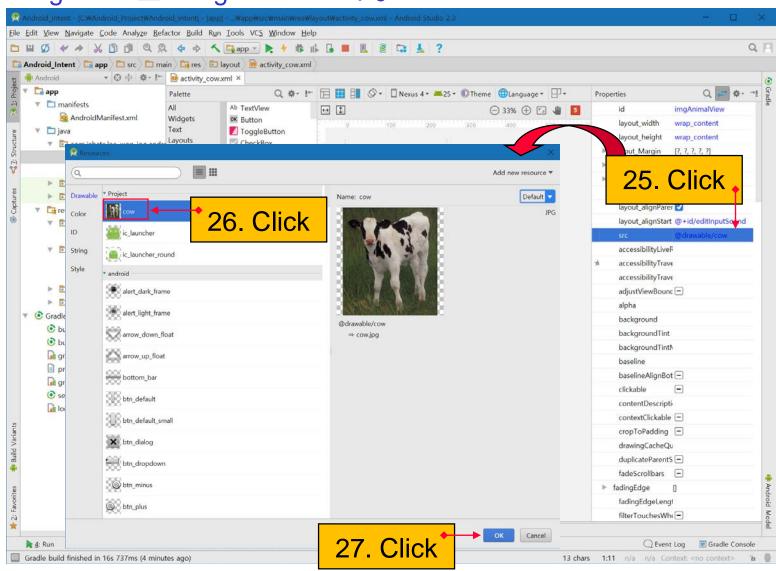






# Activity 구현 (25)

❖ ImageView의 image source শাস্ত





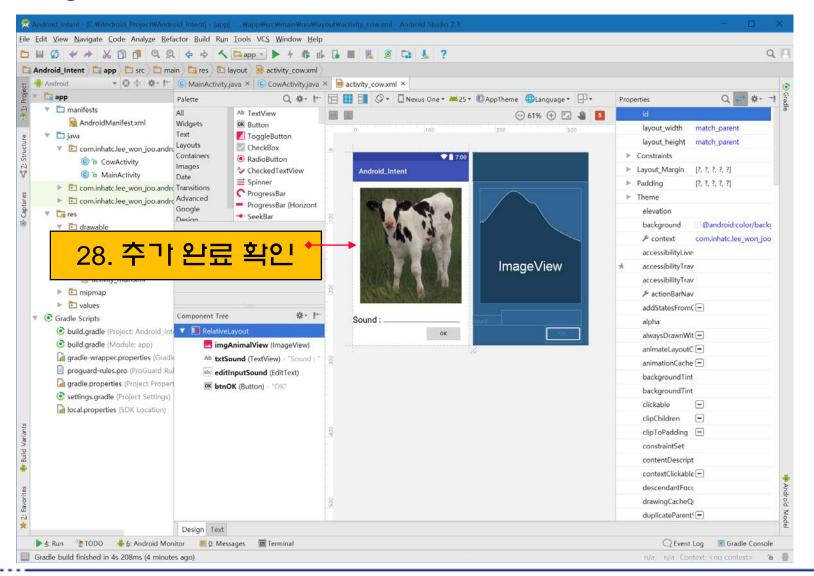






### Activity 구현 (26)

### ❖ ImageView 추가 완료











# Activity 구현 (27)

❖ EditText, Button 속성 지정

컨트롤	속성 지정
EditText	<ul> <li>android:id="@+id/editInputSound"</li> <li>android:layout_width="wrap_content"</li> <li>android:layout_height="wrap_content"</li> <li>android:width="220dp"</li> <li>android:layout_below="@+id/imgAnimalView"</li> <li>android:layout_toEndOf="@+id/txtSound"</li> <li>android:layout_marginTop="39dp"</li> </ul>
Button	<ul> <li>android:id="@+id/btnOK"</li> <li>android:layout_width="wrap_content"</li> <li>android:layout_height="wrap_content"</li> <li>android:text="OK"</li> <li>android:width="100dip"</li> <li>android:layout_marginTop="32dp"</li> <li>android:layout_below="@+id/editInputSound"</li> <li>android:layout_alignEnd="@+id/editInputSound"</li> </ul>









# Activity 구현 (28)

#### cow.xml

```
activity_cow.xml ×
xmlns:tools="http://schemas.android.com/tools"
         android:layout_width="match_parent"
         android:layout height="match parent"
         android:paddingLeft="@dimen/activity horizontal margin"
         android:paddingRight="@dimen/activity_horizontal_margin"
         android:paddingTop="@dimen/activity_vertical_margin"
         android:paddingBottom="@dimen/activity_vertical_margin"
         tools:context="com.inhatc.won_joo.android intent.Cow">
10
11
         <ImageView</pre>
12
             android:id="@+id/imgAnimalView"
13
             android:layout width="wrap content"
14
             android:layout height="wrap content"
15
             android:src="@drawable/cow"
16
             android:layout_alignParentTop="true"
17
             android:layout centerHorizontal="true"
             android:layout marginTop="30dp" />
18
19
20
         <TextView
             android:id="@+id/txtSound"
21
22
             android:layout width="wrap content"
23
             android:layout_height="wrap_content"
             android:text="Sound : "
24
25
             android:textSize="10pt"
26
             android:layout_alignBottom="@+id/editInputSound"
             android:layout alignParentStart="true" />
  Design
       Text
```









### Activity 구현 (29)

cow.xml





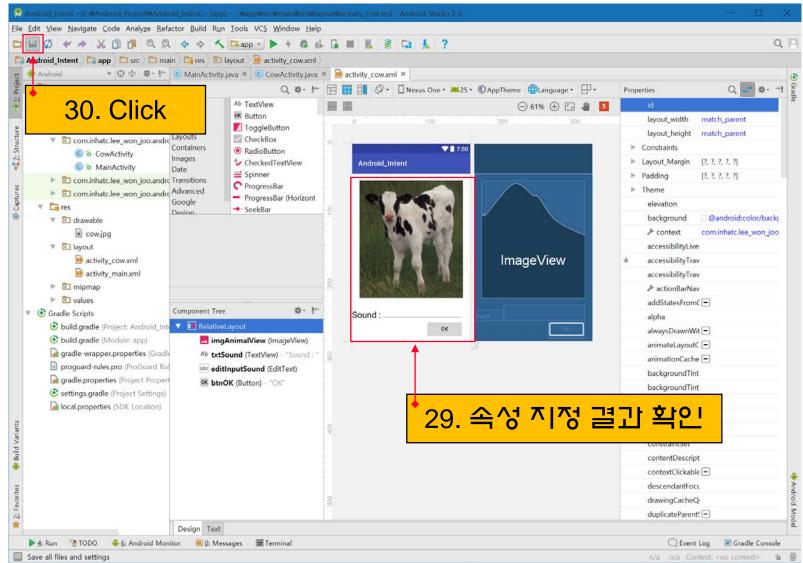






## Activity 구현 (30)

❖ TextView1, EditText1, Button1 추가 완료











## Activity 구현 (31)

### MainActivity.java

```
MainActivity.java ×
       package com.inhatc.lee won joo.android intent;
 3
       import android.content.Intent;
       import android.support.v7.app.AppCompatActivity;
 4
       import android.os.Bundle;
                                                                                31. Coding
       import android.view.View;
       import android.widget.Button;
 8
       public class MainActivity extends AppCompatActivity implements View.OnClickListener {
 9
10
           private Button btnAnimal;
                                                    //Button Object
11
12
13
           @Override
14 of
           protected void onCreate(Bundle savedInstanceState) {
               super.onCreate(savedInstanceState);
15
               setContentView(R.layout.activity main);
16
17
               btnAnimal = (Button)findViewById(R.id.btnCow);
18
               btnAnimal.setOnClickListener(this); //Cow Button Click Event Handler
19
20
21
           public void onClick(View v){
22
                                                    //Call Cow Activity in Cow.java
23
               if (v == btnAnimal){
                   Intent cowIntent = new Intent(MainActivity.this, CowActivity.class);
24
25
                   startActivity(cowIntent);
                                                   //Start Cow Activity
26
27
28
29
```









27

## Activity 구현 (32)

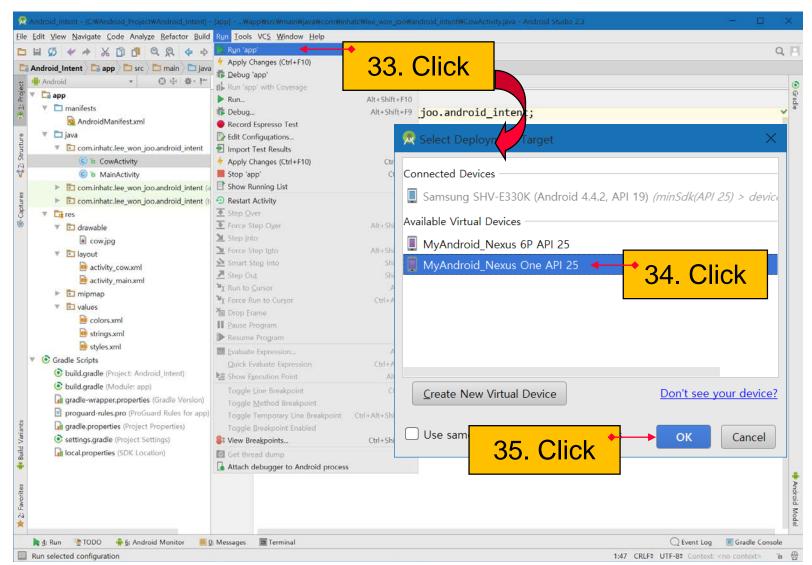
### CowActivity.java

```
CowActivity.java ×
       package com.inhatc.lee won joo.android intent;
       import android.support.v7.app.AppCompatActivity;
       import android.os.Bundle;
                                                                                32. Coding
       import android.view.View;
       import android.widget.Button;
       public class CowActivity extends AppCompatActivity implements View.OnClickListener {
8 💍
9
           private Button btnOK;
                                                //Button Object
10
11
12
           @Override
           protected void onCreate(Bundle savedInstanceState) {
13 of
               super.onCreate(savedInstanceState);
14
               setContentView(R.layout.activity cow);
15
16
               btnOK = (Button)findViewById(R.id.btnOK);
17
               btnOK.setOnClickListener(this); //[OK] Button Click Event Handler
18
19
20
           public void onClick(View v){
21 of
               if (v == btnOK){
22
                   finish();
                                                         //Exit Activity
23
24
25
26
```



# Activity 구현 (33)

#### ❖ Android 프로젝트 실행





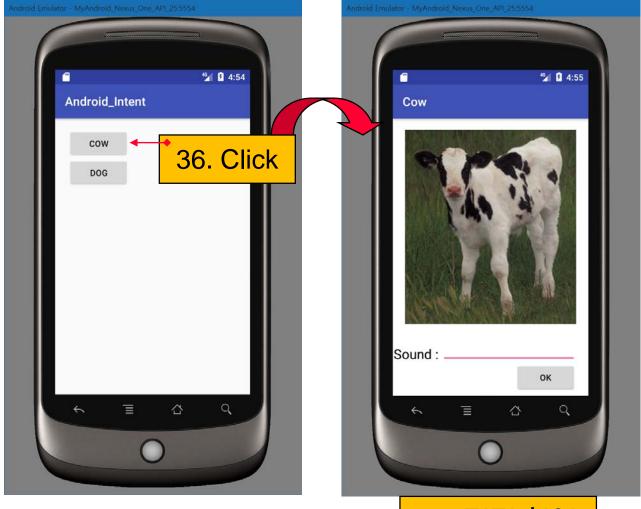






# Activity 구현 (34)

#### ❖ 실행 결과



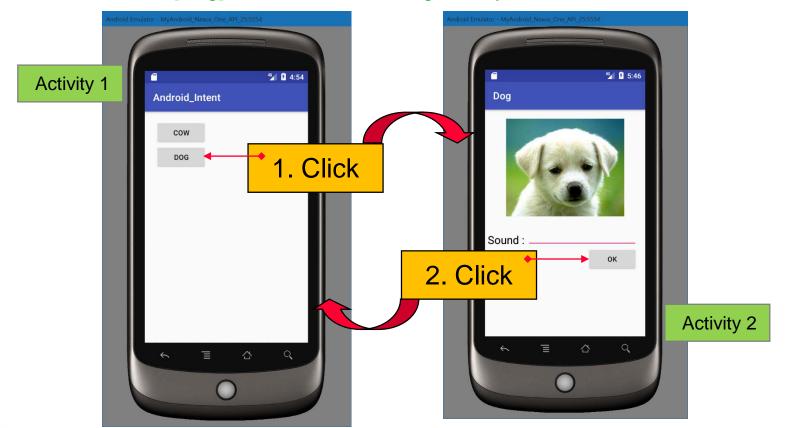


37. 결과 확인



## 실습 2 : Activity 구현

- Android\_Intent 프로젝트 (실습 시간 : 60분)
  - ❖ MainActivity.java 파일을 프로그래밍하여 이래 그림과 같이 구현하시오.
    - ◆단계 1 : [Dog] 버튼을 Click하면 Dog activity 호출











# 실습 2 : Activity 구현 (1)

#### MainActivity.java

```
package com.inhatc.lee won joo.android intent;
 3
       import android.content.Intent;
4
       import android.support.v7.app.AppCompatActivity;
       import android.os.Bundle;
       import android.view.View;
                                                                                            Coding
       import android.widget.Button;
8
       public class MainActivity extends AppCompatActivity implements View.OnClickListener {
9
10
           private Button btnCow, btnDog;
                                                   //Button Object
11
12
13
           @Override
           protected void onCreate(Bundle savedInstanceState) {
14 of
15
               super.onCreate(savedInstanceState);
               setContentView(R.layout.activity main);
16
17
               btnCow = (Button)findViewBvId(R.id.btnCow);
18
               btnDog = (Button)findViewById(R.id.btnDog);
19
               btnCow.setOnClickListener(this); //Cow Button Click Event Handler
20
21
22
23
           public void onClick(View v){
24 of
               if (v == btnCow){
                                                   //Call Cow Activity in CowActivity.java
                   Intent cowIntent = new Intent(MainActivity.this, CowActivity.class);
26
27
                   startActivity(cowIntent);
                                                   //Start Cow Activity
                                                   //Call Cow Activity in DogActivity.java
28
               } else if (v == btnDog){
29
                                                    2
30
31
32
33
```









# 실습 2: Activity 구현 (2)

### DogActivity.java

```
C DogActivity.java ×
       package com.inhatc.lee won joo.android intent;
       import ...
       public class DogActivity extends AppCompatActivity implements View.OnClickListener {
 8 💍
           private Button btnOK;
                                                 //Button Object
10
11
12
           @Override
                                                                                   Coding
           protected void onCreate(Bundle savedInstanceState) {
13 of
                super.onCreate(savedInstanceState);
14
                setContentView(R.layout.activity dog);
15
16
               btnOK = (Button)findViewById(R.id.btnOK);
17
               btnOK.setOnClickListener(this); //[OK] Button Click Event Handler
18
19
20
           public void onClick(View v){
21 of
               if (v == btnOK){
22
                    finish();
                                                         //Exit Activity
23
24
25
26
27
```





### Intent

#### public class Intent

extends Object implements Parcelable Cloneable

#### java.lang.Object

Landroid.content.Intent

►Known Direct Subclasses LabeledIntent

- An abstract description of an operation to be performed.
- ❖ 기능

❖ 정의

Intent

◆ Activity 간의 데이터 전송











### 실습 3: Activity 데이터 전송 구현 (1)

- 【Android\_Intent 프로젝트 (실습 시간 : 30분)
  - ❖ MainActivity.java 파일을 프로그래밍하여 아래 그림과 같이 구현하시오.
    - ◆단계 1 : [Cow] 버튼을 Click하면 cow activity 호출
    - ◆단계 2 : cow activity에서 Sound에 "Moo Moo" 입력 후 [확인(OK)] 버튼 Click
    - ◆단계 3 : toast() 를 이용하여 Main activity에 "Moo Moo" 출력



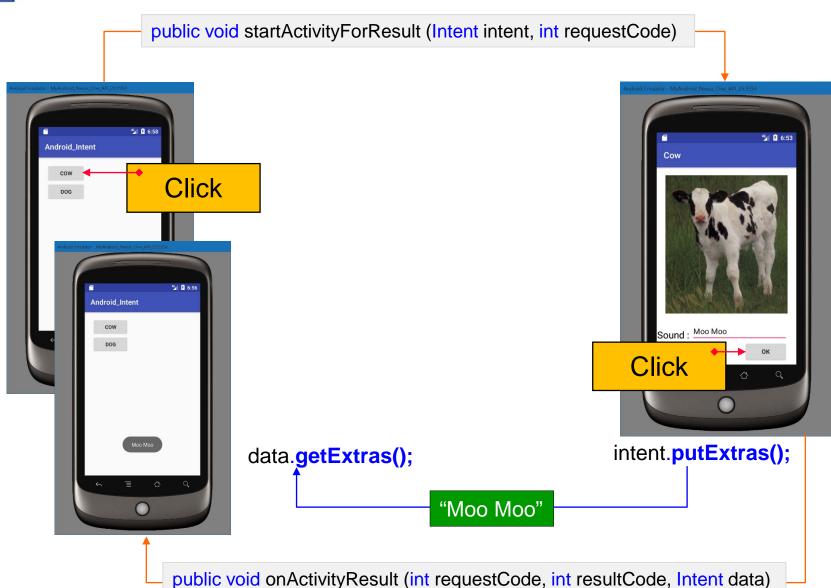








## 실습 3 : Activity 데이터 전송 구현 (2)





## 실습 3: Activity 데이터 전송 구현 (3)

#### public void startActivityForResult (Intent intent, int requestCode)

- **Parameters** 
  - intent The intent to start.
  - ◆ requestCode If >= 0, this code will be returned in onActivityResult() when the activity exits.
- Throws
  - android.content.ActivityNotFoundException



#### public void onActivityResult (int requestCode, int resultCode, Intent data)



- requestCode The integer request code originally supplied to startActivityForResult(), allowing you to identify who this result came from.
- resultCode The integer result code returned by the child activity through its setResult().
- data An Intent, which can return result data to the caller (various data can be attached to Intent "extras").









### 실습 3: Activity 데이터 전송 구현 (4)

#### MainActivity.java

```
MainActivity.java ×
       package com.inhatc.lee won joo.android intent;
       import android.content.Intent;
 3
       import android.support.v7.app.AppCompatActivity;
4
       import android.os.Bundle;
       import android.view.View;
       import android.widget.Button;
7
 8
       import android.widget.Toast;
9
       public class MainActivity extends AppCompatActivity implements View.OnClickListener {
10 💍
11
12
           private Button btnCow, btnDog;
                                                    //Button Object
                                                                               1. Coding
                                                     //Toast Obiect
           private Toast objToast;
13
14
15
           @Override
           protected void onCreate(Bundle savedInstanceState) {
16 of
               super.onCreate(savedInstanceState);
17
               setContentView(R.layout.activity main);
18
19
               btnCow = (Button)findViewById(R.id.btnCow);
20
               btnDog = (Button)findViewById(R.id.btnDog);
21
22
               btnCow.setOnClickListener(this); //Cow Button Click Event Handler
23
               btnDog.setOnClickListener(this); //Dog Button Click Event Handler
24
25
```









## 실습 3: Activity 데이터 전송 구현 (5)

❖ MainActivity.java의 onActivityResult() method

```
25
          public void onClick(View v){
26 a
             if (v == btnCow){
                                              //Call Cow Activity in CowActivity.java
27
                 Intent cowIntent = new Intent(MainActivity.this, CowActivity.class);
28
                //startActivity(cowIntent);
29
                                                         //Start Cow Activity
                startActivityForResult(cowIntent, 1);  //Start Cow Activity
30
              31
                 Intent dogIntent = new Intent(MainActivity.this, DogActivity.class);
32
                 //startActivity(dogIntent);
                                                      //Start Dog Activity
33
                 startActivityForResult(dogIntent, 1);  //Start Dog Activity
34
35
36
37
          @Override
38
          protected void onActivityResult(int requestCode, int resultCode, Intent data) {
39 of
             super.onActivityResult(requestCode, resultCode, data);
40
             if(requestCode == 1){
41
                 String strData = data.getStringExtra("Animal Sound");
42
                 objToast = Toast.makeText(this, strData, Toast.LENGTH LONG);
43
                 objToast.show();
44
45
46
                                                                    2. Coding
47
```



### 실습 3: Activity 데이터 전송 구현 (6)

#### CowActivity.java

```
CowActivity.java ×
       package com.inhatc.lee won joo.android intent;
       import ...
 9
       public class CowActivity extends AppCompatActivity implements View.OnClickListener {
10 🕝
11
12
           private Button btnOK;
                                                //Button Object
           private EditText edtSound;
                                                //EditText Object
13
14
15
           @Override
           protected void onCreate(Bundle savedInstanceState) {
16 of
               super.onCreate(savedInstanceState);
17
               setContentView(R.layout.activity cow);
18
19
               btnOK = (Button)findViewById(R.id.btnOK);
20
               btnOK.setOnClickListener(this); //[OK] Button Click Event Handler
21
22
                                                                                   3. Coding
23
           public void onClick(View v){
24 of
               if (v == btnOK){
25
                   Intent CallIntent = getIntent();
                                                        //Return Intent to Start Cow Activity
26
                   edtSound = (EditText)findViewById(R.id.editInputSound);
27
                   CallIntent.putExtra("Animal Sound", edtSound.getText().toString());
28
                   setResult(RESULT_OK, CallIntent);
                                                        //Return Intent
29
                   finish();
                                                        //Exit Activity
30
31
32
33
```





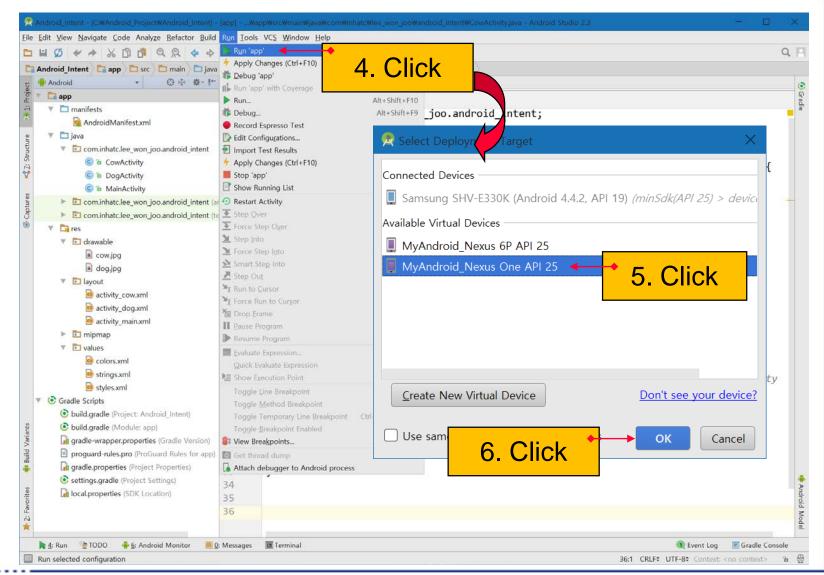


34



## 실습 3: Activity 데이터 전송 구현 (7)

#### ❖ Android 프로젝트 실행





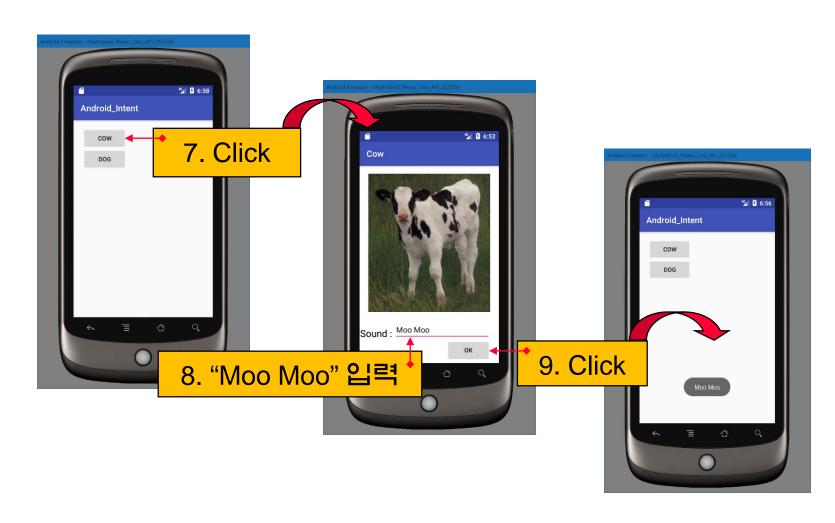






### 실습 3: Activity 데이터 전송 구현 (8)

❖ 실행 결과



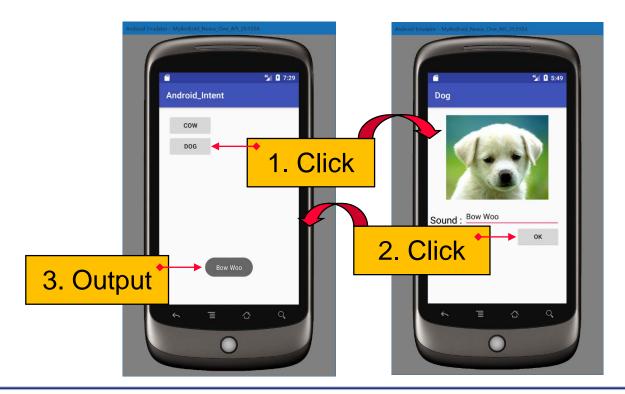






### 실습 4: Activity 데이터 전송 구현

- ■Android\_Intent 프로젝트 (실습 시간 : 30분)
  - ❖ MainActivity.java 파일을 프로그래밍하여 아래 그림과 같이 구현하시오.
    - ◆ 단계 1 : [Dog] 버튼을 Click하면 Dog Activity 호출
    - ◆ 단계 2 : Dog Activity에서 Sound에 "Bow Woo" 입력 후 [확인(OK)] 버튼 Click
    - ◆ 단계 3 : toast() 를 이용하여 Main activity에 "Bow Woo" 출력











# 학습 요약

- Activity
- Activity 구현
- Intent
- Activity 데이터 전송 구현









