



어댑터 뷰

1. 리스트뷰와 그리드뷰 > 어댑터뷰



❖ 어댑터뷰 개요

- ✓ 뷰 컨테이너 중에서 AdapterView 하위에 **ListView, ExpandableListView, GridView, Spinner, Gallery** 등이 있는데, 이를 묶어서 어댑터뷰라고 부름
- ✓ 어댑터뷰를 실제로 사용할 때는 어댑터뷰의 모양을 설정하고 데이터를 채워주는 ArrayAdapter<T> 클래스를 함께 사용

java.lang.Object

어댑터뷰 계층도

```
    ↳ android.view.View  
        ↳ android.widget.ViewGroup  
            ↳ android.widget.AdapterView  
                ↳ android.widget.AbsListView  
                    ↳ android.widget.GridView  
                    ↳ android.widget.ListView  
                        ↳ android.widget.ExpandableListView  
                ↳ android.widget.AbsSpinner  
                    ↳ android.widget.Spinner  
                ↳ android.widget.Gallery
```

1. 리스트뷰와 그리드뷰 ▶ 리스트뷰



❖ 리스트뷰 개요

- ✓ 데이터를 리스트 모양으로 보여주며 리스트 중 하나를 선택하는 용도

❖ XML을 이용한 리스트뷰 만들기

- ✓ XML 파일의 <ListView></ListView> 태그 부분에 리스트뷰를 생성
- ✓ Java 코드에서 리스트뷰에 데이터를 채움
 - ① 리스트뷰에 나열할 내용을 미리 String 배열로 만들어 놓는다.
 - ② 리스트뷰 변수를 생성하고 XML의 <ListView>에 대응시킨다.
 - ③ ArrayAdapter<String>형의 변수를 선언하고, 리스트뷰의 모양과 내용을 ①번 배열로 채운다.
 - ④ ③번에서 생성한 어레이어댑터를 ②번의 리스트뷰 변수에 적용시킨다.
 - ⑤ 리스트뷰의 항목을 클릭했을 때 동작하는 리스너를 정의한다.





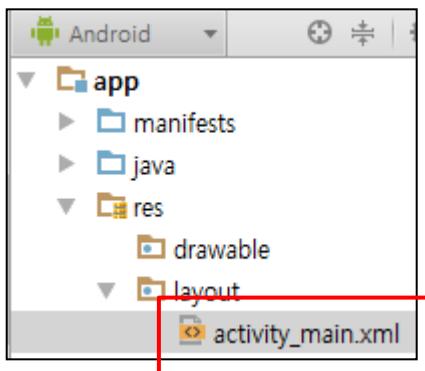
프로젝트 생성



프로젝트 정보

- ✓ Application Name: ListView01
 - ✓ Minimum SDK : API 16
 - ✓ Add an activity to Mobile: Blank Activity
 - ✓ Activity Name: MainActivity
 - ✓ Layout Name: activity_main
 - ✓ Title: MainActivity
 - ✓ Menu Resource Name: menu_main





코딩

The XML code defines a main layout as a 'LinearLayout' with 'match_parent' dimensions and 'MainActivity' context. It contains a 'ListView' with 'wrap_content' dimensions, an ID of '@+id/listView', and a weight of '1'. The entire layout is closed at the bottom.

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <ListView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/listView"
        android:layout_weight="1" />

</LinearLayout>
```

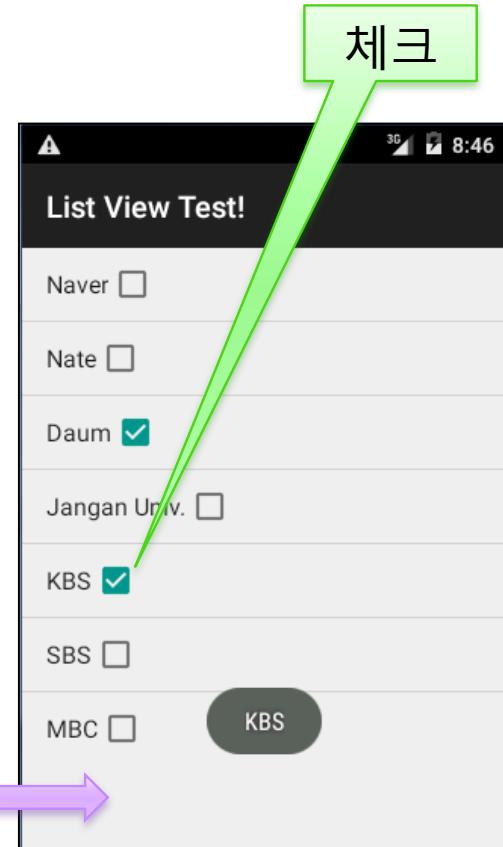
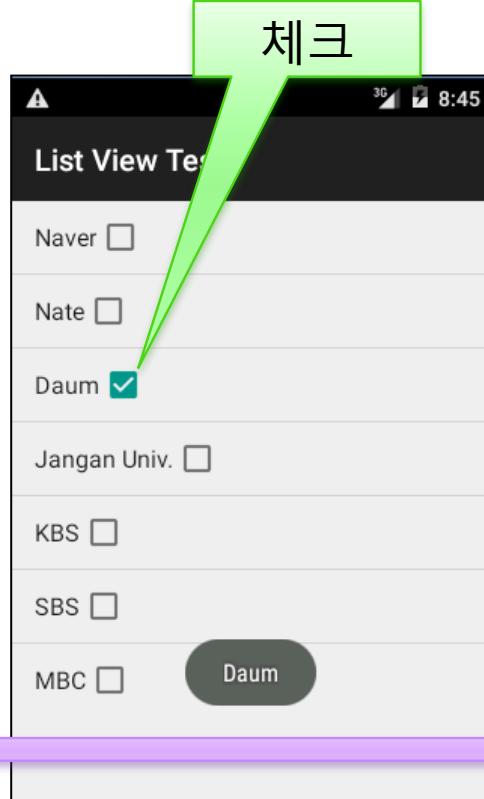
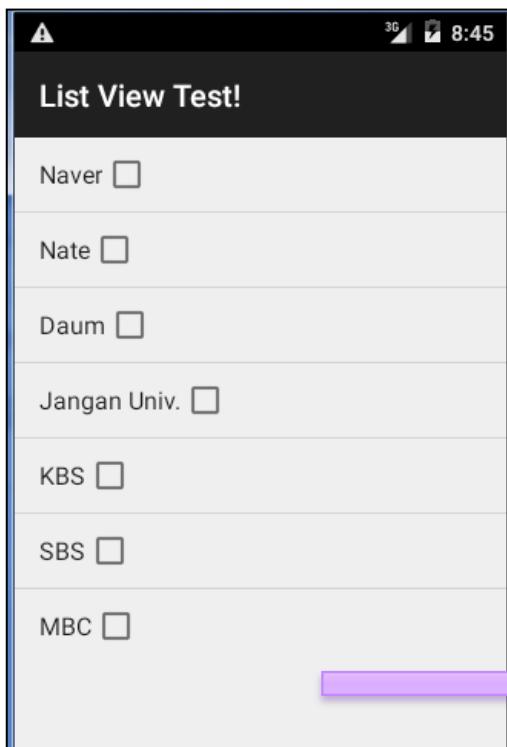
c MainActivity.java x

```
1 package com.example.admin.listview01;  
2  
3 import android.os.Bundle;  
4 import android.support.v7.app.AppCompatActivity;  
5 import android.view.View;  
6 import android.widget.AdapterView;  
7 import android.widget.ArrayAdapter;  
8 import android.widget.ListView;  
9 import android.widget.Toast;  
10  
11 public class MainActivity extends AppCompatActivity {  
12  
13     @Override  
14     protected void onCreate(Bundle savedInstanceState) {  
15         super.onCreate(savedInstanceState);  
16         setContentView(R.layout.activity_main);
```

확인

MainActivity.java

```
16     setContentView(R.layout.activity_main);
17     setTitle("List View Test!");
18
19     final String[] mid = {"Naver", "Nate", "Daum", "Jangan Univ.",
20                           "KBS", "SBS", "MBC"};
21     ListView list = (ListView) findViewById(R.id.listView);
22
23     ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
24                           android.R.layout.simple_list_item_multiple_choice, mid);
25     list.setChoiceMode(ListView.CHOICE_MODE_MULTIPLE);
26     list.setAdapter(adapter);
27
28     list.setOnItemClickListener(new AdapterView.OnItemClickListener() {
29         @Override
30         public void onItemClick(AdapterView<?> parent, View view,
31                               int position, long id) {
32             Toast.makeText(getApplicationContext(), mid[position],
33                           Toast.LENGTH_SHORT).show();
34         }
35     });
36 }
37 }
38 }
```

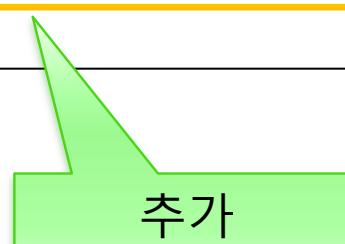


```
>MainActivity.java x
1 package com.example.admin.listview01;
2
3 import android.os.Bundle;
4 import android.support.v7.app.AppCompatActivity;
5 import android.view.View;
6 import android.widget.AdapterView;
7 import android.widget.ArrayAdapter;
8 import android.widget.ListView;
9 import android.widget.Toast;
10
11 public class MainActivity extends AppCompatActivity {
12
13     String Choice_Data= "";
14
15     protected void onCreate(Bundle savedInstanceState) {
16         super.onCreate(savedInstanceState);
17         setContentView(R.layout.activity_main);
18         setTitle("List View Test!");
}

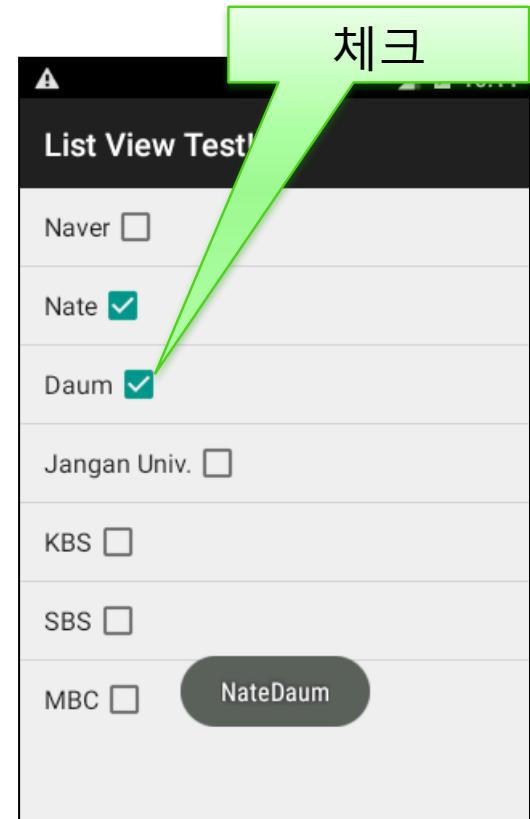
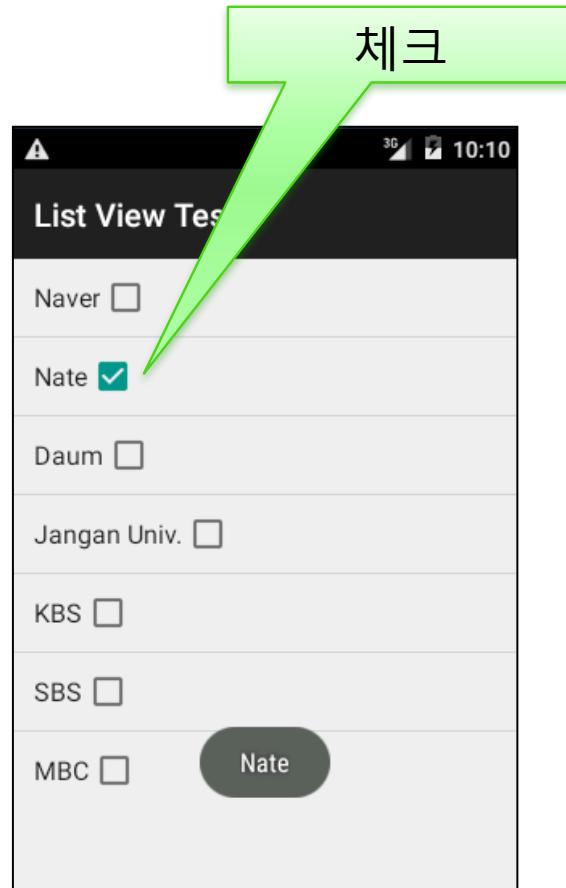
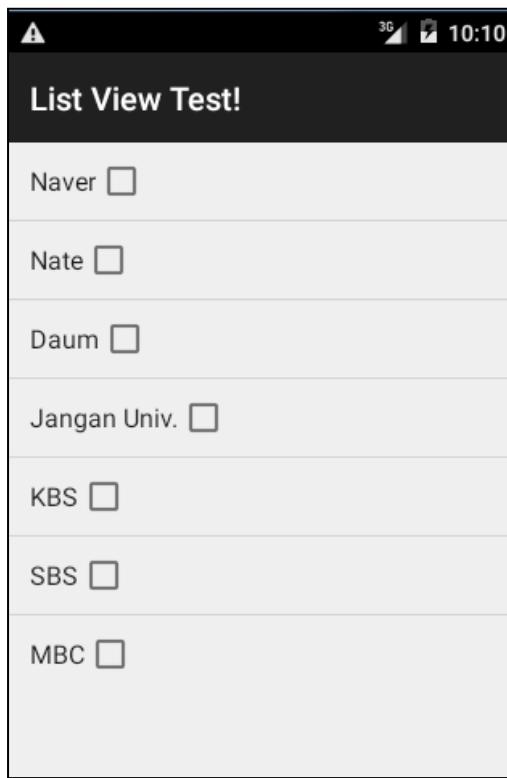
```

추가

```
23
24     ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
25             android.R.layout.simple_list_item_multiple_choice, mid);
26     list.setChoiceMode(ListView.CHOICE_MODE_MULTIPLE);
27     list.setAdapter(adapter);
28
29     list.setOnItemClickListener(new AdapterView.OnItemClickListener() {
30         @Override
31         public void onItemClick(AdapterView<?> parent, View view,
32                             int position, long id) {
33
34             Choice_Data = Choice_Data + mid[position];
35
36             Toast.makeText(getApplicationContext(), Choice_Data,
37                         Toast.LENGTH_SHORT).show();
38
39     });
}
```



추가



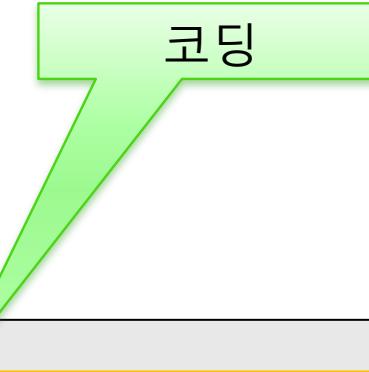
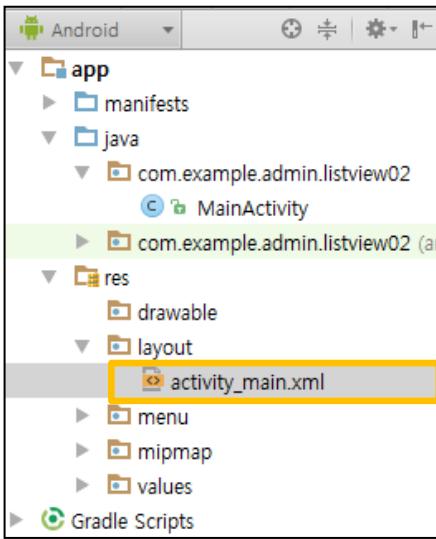
프로젝트 생성



프로젝트 정보

- ✓ Application Name: ListView02
- ✓ Minimum SDK : API 16
- ✓ Add an activity to Mobile: Blank Activity
- ✓ Activity Name: MainActivity
- ✓ Layout Name: activity_main
- ✓ Title: MainActivity
- ✓ Menu Resource Name: menu_main





The code editor displays the XML configuration for the main activity's layout. It features a root `<LinearLayout>` and a child `<ListView>`. The `<LinearLayout>` has attributes for width and height set to "match_parent". The `<ListView>` has attributes for width and height set to "wrap_content", an ID of "@+id/listView", and a weight of "1".

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <ListView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/listView"
        android:layout_weight="1" />

</LinearLayout>
```

확인

>MainActivity.java

```
1 package com.example.admin.listview02;  
2  
3 import android.os.Bundle;  
4 import android.support.v7.app.AppCompatActivity;  
5 import android.view.View;  
6 import android.widget.AdapterView;  
7 import android.widget.ArrayAdapter;  
8 import android.widget.ListView;  
9 import android.widget.Toast;  
10
```

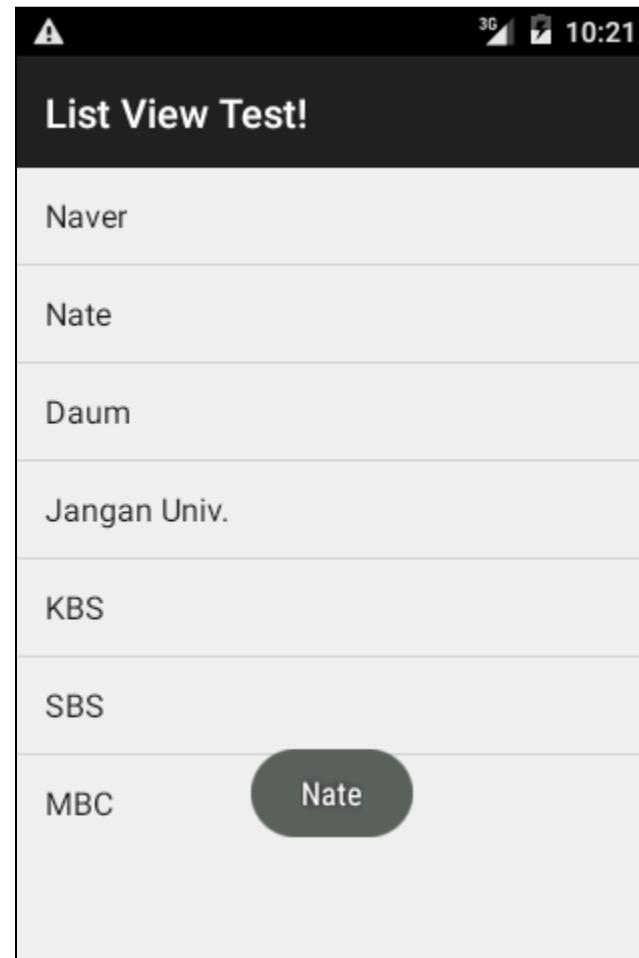
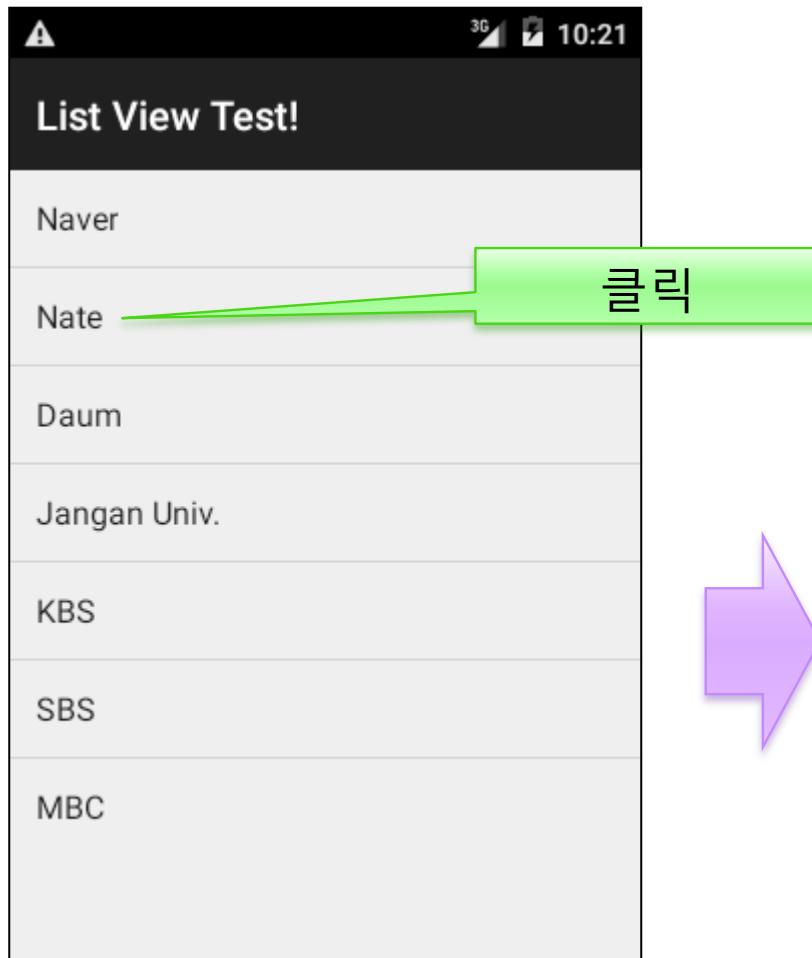
```

10
11  public class MainActivity extends AppCompatActivity {
12
13      @Override
14      protected void onCreate(Bundle savedInstanceState) {
15          super.onCreate(savedInstanceState);
16          setContentView(R.layout.activity_main);
17          setTitle("List View Test!");
18
19      final String[] mid = {"Naver", "Nate", "Daum", "Jangan Univ.",
20                      "KBS", "SBS", "MBC"};
21      ListView list = (ListView) findViewById(R.id.listView);
22
23      ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
24                      android.R.layout.simple_list_item_1, mid);
25      list.setAdapter(adapter); 생성한 어댑터를 list에 적용 Simple_list_item_1: 리스트뷰 형식
26
27      list.setOnItemClickListener(new AdapterView.OnItemClickListener() {
28          @Override
29          public void onItemClick(AdapterView<?> parent, View view,
30          int position, long id) {
31
32          Toast.makeText(getApplicationContext(), mid[position],
33          Toast.LENGTH_SHORT).show();
34
35      });
36
37 }

```

코딩

리스트 항목 클릭리스너 →
파라미터(어댑터뷰, 뷰, 클릭한 항목)



프로젝트 생성



프로젝트 정보

- ✓ Application Name: ListView03
- ✓ Minimum SDK : API 16
- ✓ Add an activity to Mobile: Blank Activity
- ✓ Activity Name: MainActivity
- ✓ Layout Name: activity_main
- ✓ Title: MainActivity
- ✓ Menu Resource Name: menu_main



Android

app
manifests
java
res
drawable
layout
activity_main.xml
menu
mipmap
values
Gradle Scripts

ListView03

Add Data Input
DATA ADD BUTTON

Item 1
Sub Item 1

Item 2
Sub Item 2

Item 3
Sub Item 3

Item 4
Sub Item 4

Item 5
Sub Item 5

Item 6
Sub Item 6

코드

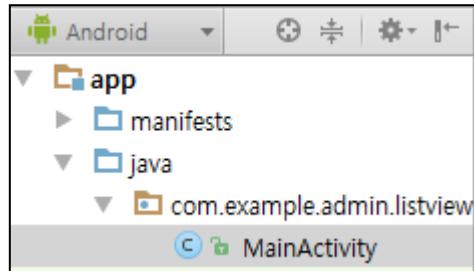
```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <EditText
        android:layout_margin="10dp"
        android:id="@+id/edtItem"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Add Data Input" />

    <Button
        android:id="@+id/addBtn"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Data Add Button" />

    <ListView
        android:id="@+id/listView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />

</LinearLayout>
```



```
>MainActivity.java x
1 package com.example.admin.listview03;
2
3 import android.os.Bundle;
4 import android.support.v7.app.AppCompatActivity;
5 import android.view.View;
6 import android.widget.AdapterView;
7 import android.widget.ArrayAdapter;
8 import android.widget.Button;
9 import android.widget.EditText;
10 import android.widget.ListView;
11
12 import java.util.ArrayList;
13
```

확인

>MainActivity.java

```
12 import java.util.ArrayList;
13
14 public class MainActivity extends AppCompatActivity {
15
16     @Override
17     protected void onCreate(Bundle savedInstanceState) {
18         super.onCreate(savedInstanceState);
19         setContentView(R.layout.activity_main);
20
21         final ArrayList<String> midList = new ArrayList<String>();
22         ListView list = (ListView) findViewById(R.id.listView);
23
24         final ArrayAdapter<String> adapter = new ArrayAdapter<String>(this,
25             android.R.layout.simple_list_item_1, midList);
26         list.setAdapter(adapter);
27
28         final EditText edtItem = (EditText) findViewById(R.id.edtItem);
29         Button btnAdd = (Button) findViewById(R.id.addButton);
30     }
}
```

코딩

비어있는 문자열 배열
ArrayList<String>
형 선언

ArrayAdapter()생성

에디트텍스트와 버튼
연결

코딩

```
>MainActivity.java x  
30  
31     btnAdd.setOnClickListener(new View.OnClickListener() {  
32         @Override  
33         public void onClick(View v) {  
34             midList.add(edtItem.getText().toString());  
35             adapter.notifyDataSetChanged();  
36         }  
37     );  
38     list.setOnItemLongClickListener(new AdapterView.OnItemLongClickListener() {  
39         @Override  
40         public boolean onItemLongClick(AdapterView<?> parent, View view,  
41                                         int position, long id) {  
42             midList.remove(position);  
43             adapter.notifyDataSetChanged();  
44             return false;  
45         }  
46     );  
47 }  
48 }  
49 }
```

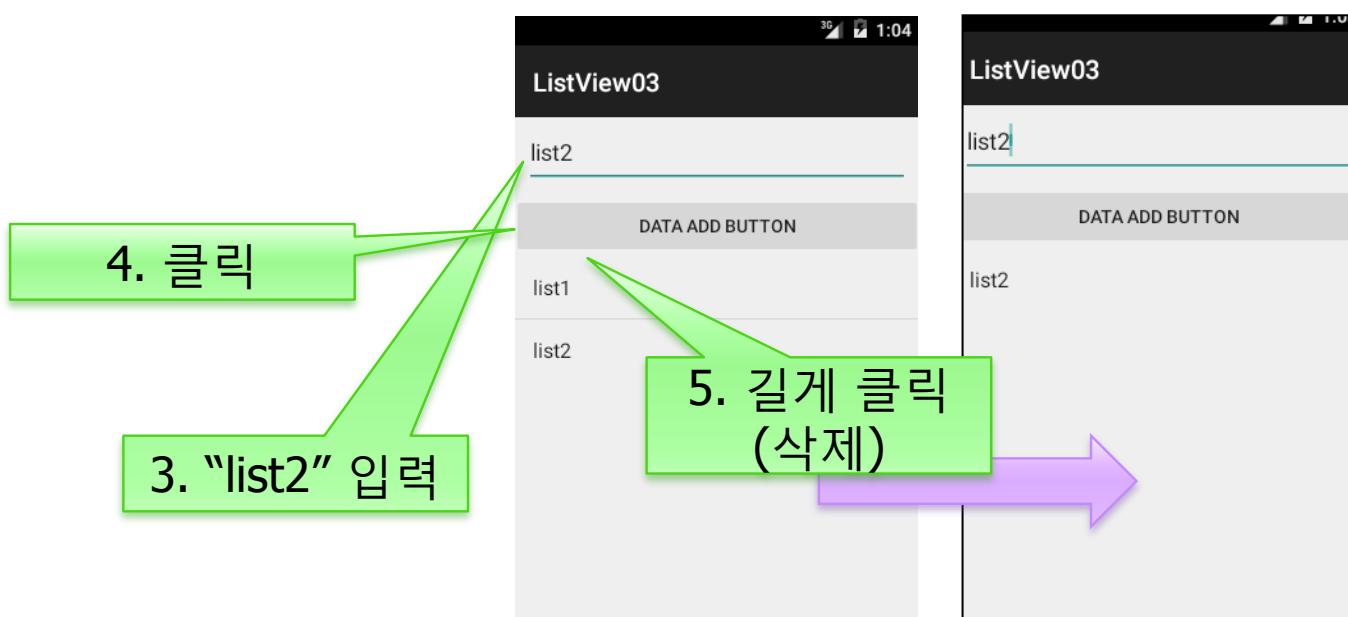
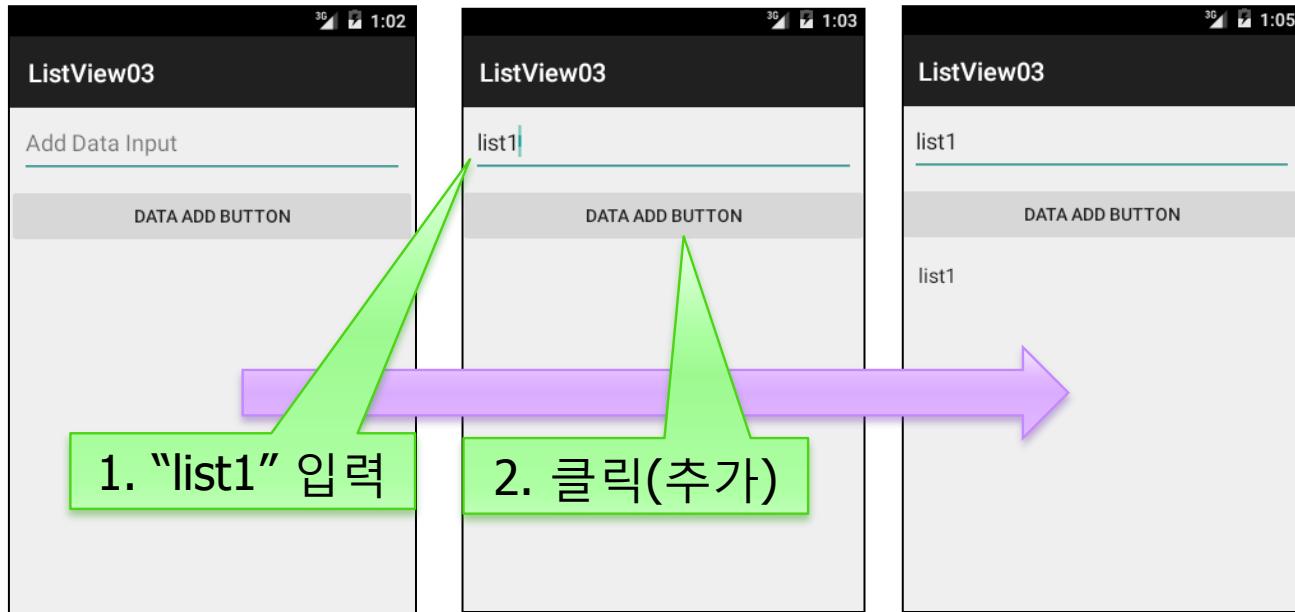
에디티텍스트에 내용을 midList에 추가

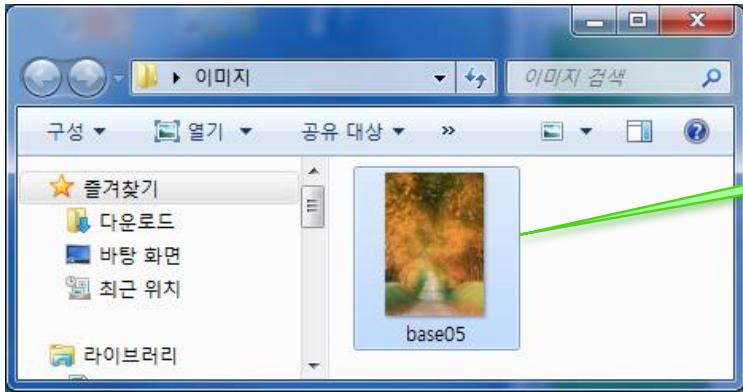
추가된 항목을 다시 세팅(디스플레이)

리스트 항목을 길게 클릭

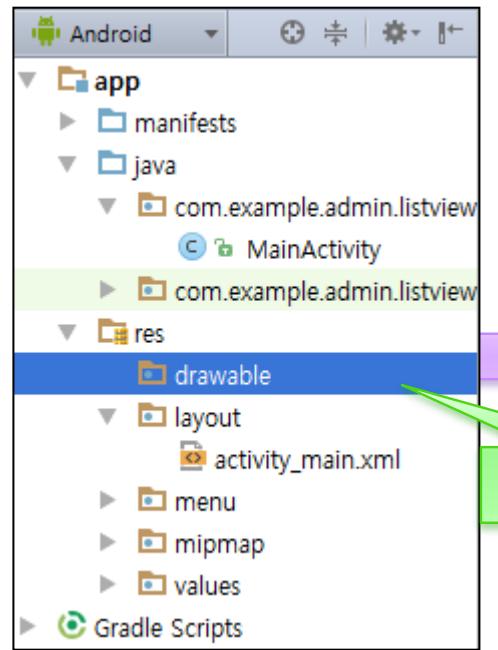
선택한 항목 삭제

어댑터리스트 다시 세팅(디스플레이)

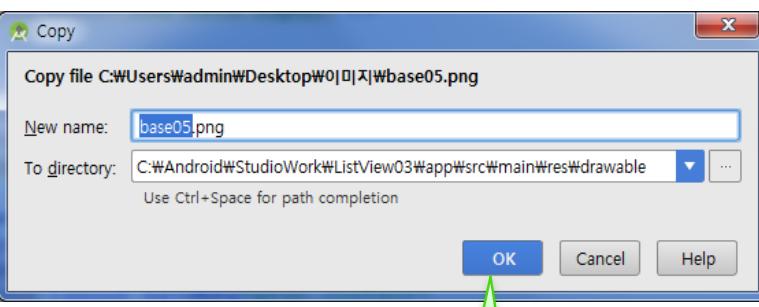




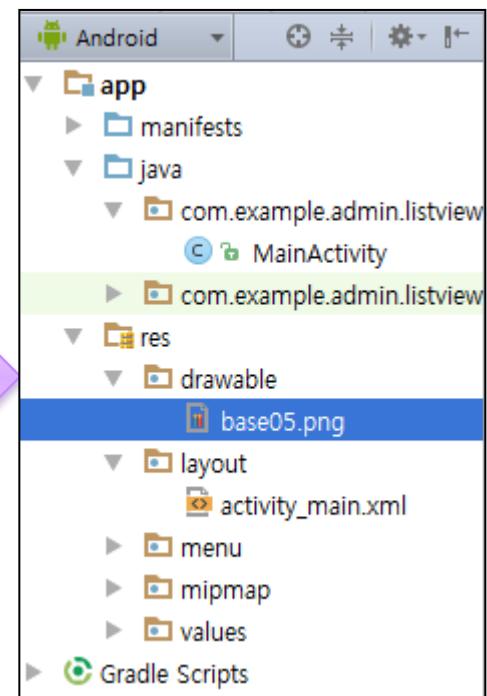
CTRL + C



CTRL + V



클릭



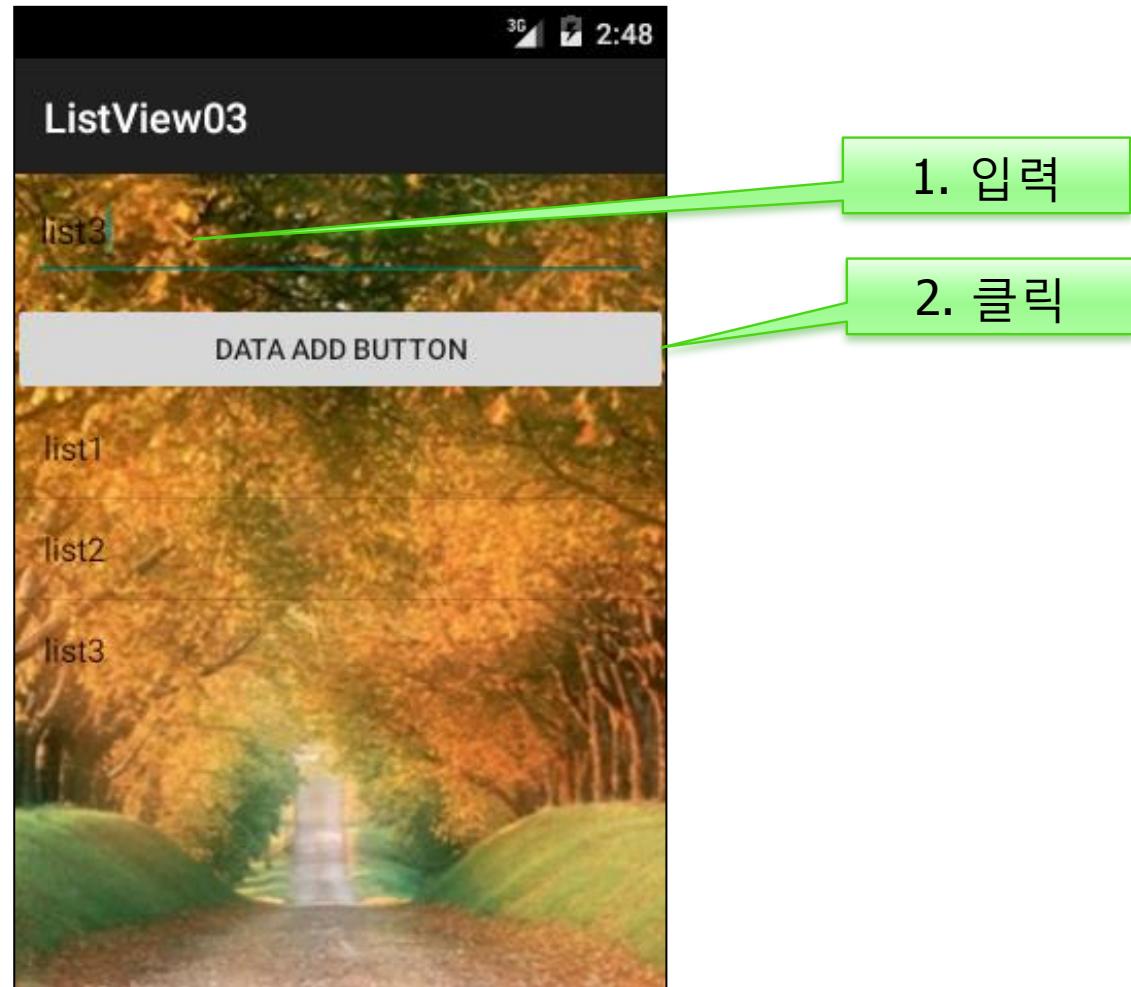
```
activity_main.xml x

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@drawable/base05"
    >

    <EditText
        android:layout_margin="10dp"
        android:id="@+id/edtItem"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Add Data Input" />

```

추가



```
activity_main.xml x

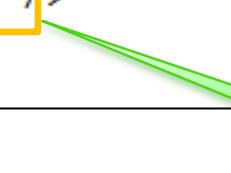
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:background="@drawable/base05"
    >

    <EditText...>

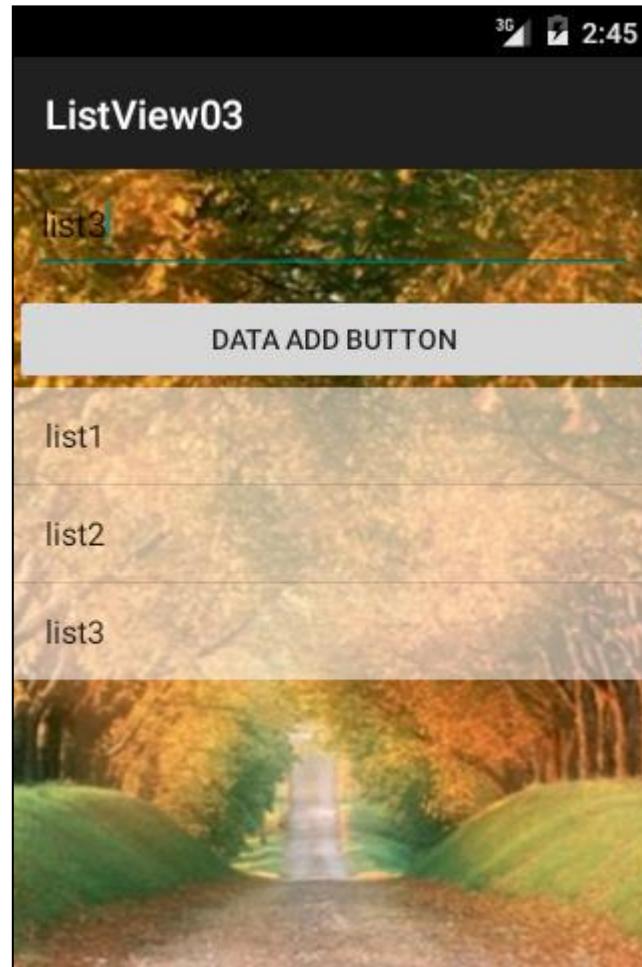
    <Button...>

    <ListView
        android:id="@+id/listView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:background="#88FFFFFF"/>

```



추가



스피너(Spinner)



○ 스피너 개요

- PC의 드롭 다운(Drop down) 박스와 비슷한 기능
- 화면이 작은 스마트폰에서 여러 개 개 중 하나를 선택할 수 있도록 확장해주는 용도로 사용

프로젝트 정보

- ✓ Application Name: Spinner01
- ✓ Minimum SDK : API 16
- ✓ Add an activity to Mobile: Blank Activity
- ✓ Activity Name: MainActivity
- ✓ Layout Name: activity_main
- ✓ Title: MainActivity
- ✓ Menu Resource Name: menu_main



프로젝트 생성

The screenshot shows the Android Studio interface. On the left is the Project Navigational Drawer, which lists the project structure under the 'app' module. The 'res/layout' folder contains an 'activity_main.xml' file, which is currently selected and highlighted with a gray background. Below the drawer is the main editor area. The title bar of the editor says 'activity_main.xml'. The XML code for the layout is displayed:

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
    xmlns:tools="http://schemas.android.com/tools"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent"  
    android:orientation="vertical"  
    tools:context=".MainActivity">  
  
    <Spinner  
        android:id="@+id/spinner01"  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content" />  
  
</LinearLayout>
```

MainActivity.java

```
 MainActivity.java x
1 package com.example.admin.spinner01;
2
3 import ...
7
8 public class MainActivity extends AppCompatActivity {
9
10    @Override
11    protected void onCreate(Bundle savedInstanceState) {
12        super.onCreate(savedInstanceState);
13        setContentView(R.layout.activity_main);
14
15        setTitle("스피너 연습");
16
17        final String[] movie = {"쿵푸팬더", "짱구는 못말려",
18                               "아저씨", "아바타", "대부", "국가대표"};
19        Spinner spinner = (Spinner) findViewById(R.id.spinner01);
20
21        ArrayAdapter<String>adapter;
22        adapter = new ArrayAdapter<String>(this,
23                                         android.R.layout.simple_spinner_item, movie);
24        spinner.setAdapter(adapter);
25
26    }
27 }
```

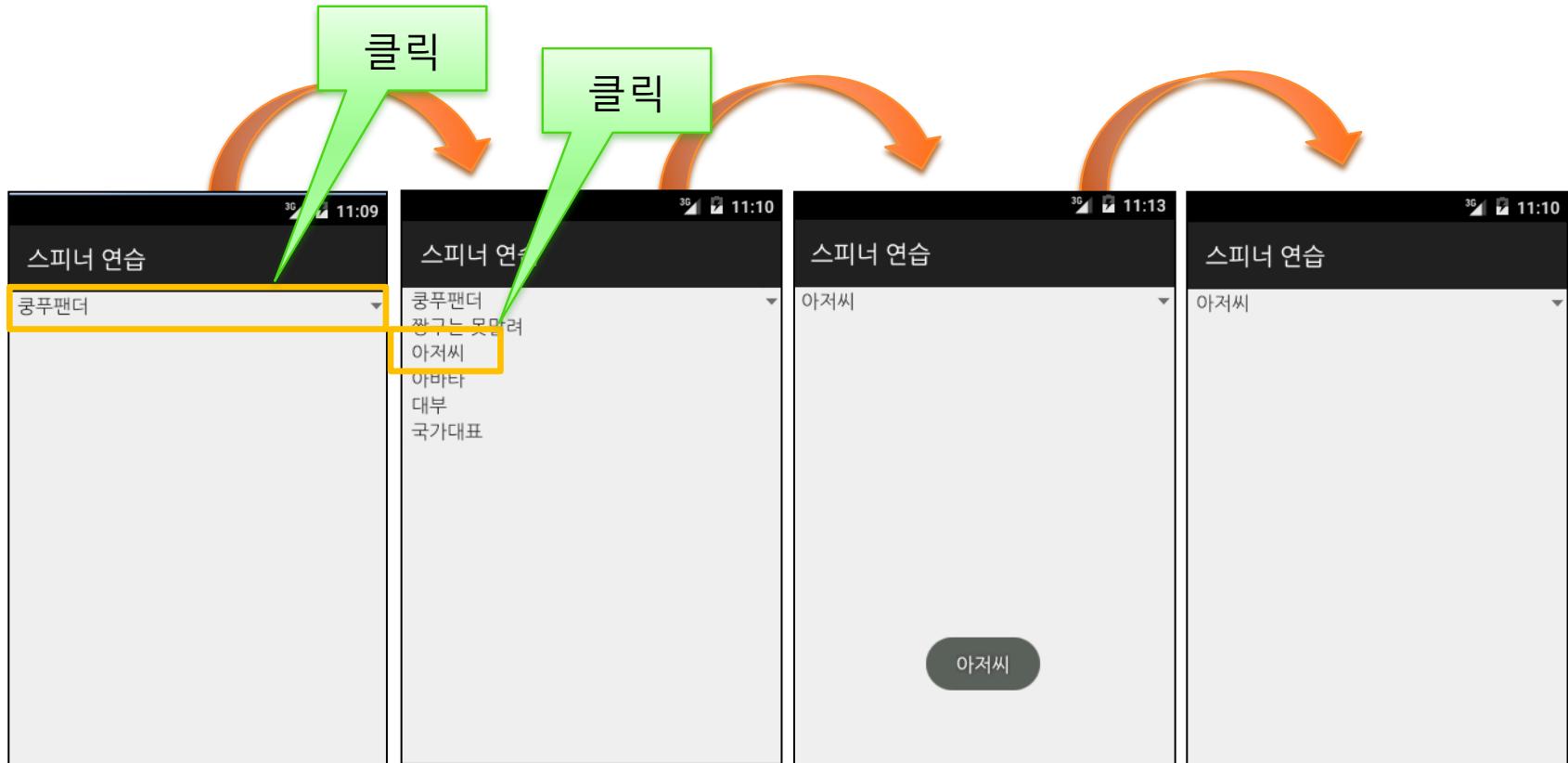


```

1 package com.example.admin.spinner01;
2
3 import ...
10
11 public class MainActivity extends AppCompatActivity {
12
13     @Override
14     protected void onCreate(Bundle savedInstanceState) {
15         super.onCreate(savedInstanceState);
16         setContentView(R.layout.activity_main);
17         setTitle("스피너 연습");
18         final String[] movie = {"쿵푸팬더", "짱구는 뜬말려",
19                               "아저씨", "아바타", "대부", "국가대표"};
20         Spinner spinner = (Spinner) findViewById(R.id.spinner01);
21
22         final ArrayAdapter<String>adapter;
23         adapter = new ArrayAdapter<String>(this,
24                                         android.R.layout.simple_spinner_item, movie);
25         spinner.setAdapter(adapter);
26         spinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() {
27
28             public void onItemSelected(AdapterView<?> parent, View view,
29                                     int position, long id) {
30                 Toast.makeText(MainActivity.this, movie[position],
31                             Toast.LENGTH_SHORT).show();
32             }
33             @Override
34             public void onNothingSelected(AdapterView<?> parent) {
35             }
36         });
37     }
38 }

```

추가



정리



1. 리스트뷰의 모양은 기본적으로 simple_list_item_1을 사용한다. simple_list_item_single_choice를 사용하면 라디오버튼이 되고, simple_list_item_multiple_choice를 사용하면 체크박스가 된다.
2. 리스트뷰의 항목을 동적으로 추가·삭제하려면 ArrayList<T>를 정의한 후 add()와 remove() 메소드를 동적으로 사용한다.
3. 그리드뷰(Grid View)는 사진이나 그림을 격자 모양으로 배치하는 역할을 한다. 사진이나 그림외에 버튼, 텍스트 등도 배치할 수 있지만 보통 사진이나 그림을 배치한다.
4. 갤러리(Gallery)는 사진이나 이미지를 배치하고 좌우로 스크롤해서 볼 수 있도록 해준다.
5. 스피너(Spinner)는 PC의 드롭 다운(Drop Down) 박스와 비슷한 기능을 한다. 화면이 작은 스마트폰에서 여러 개 중 하나를 선택할 수 있게 해준다.

