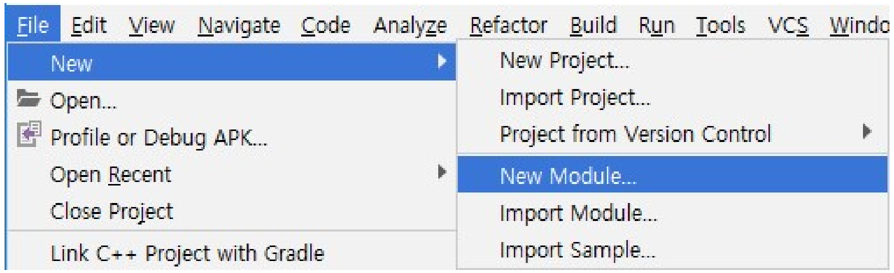
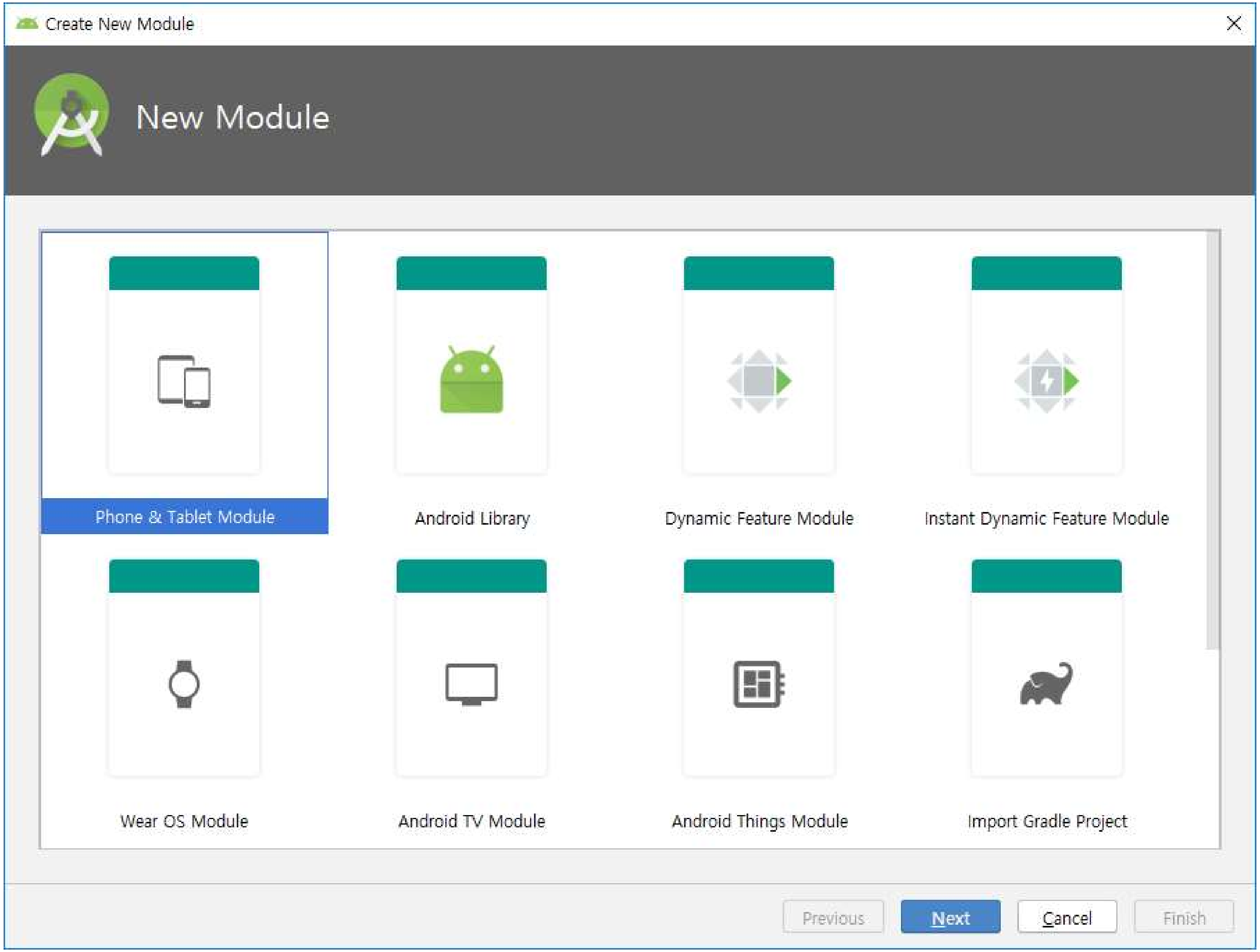
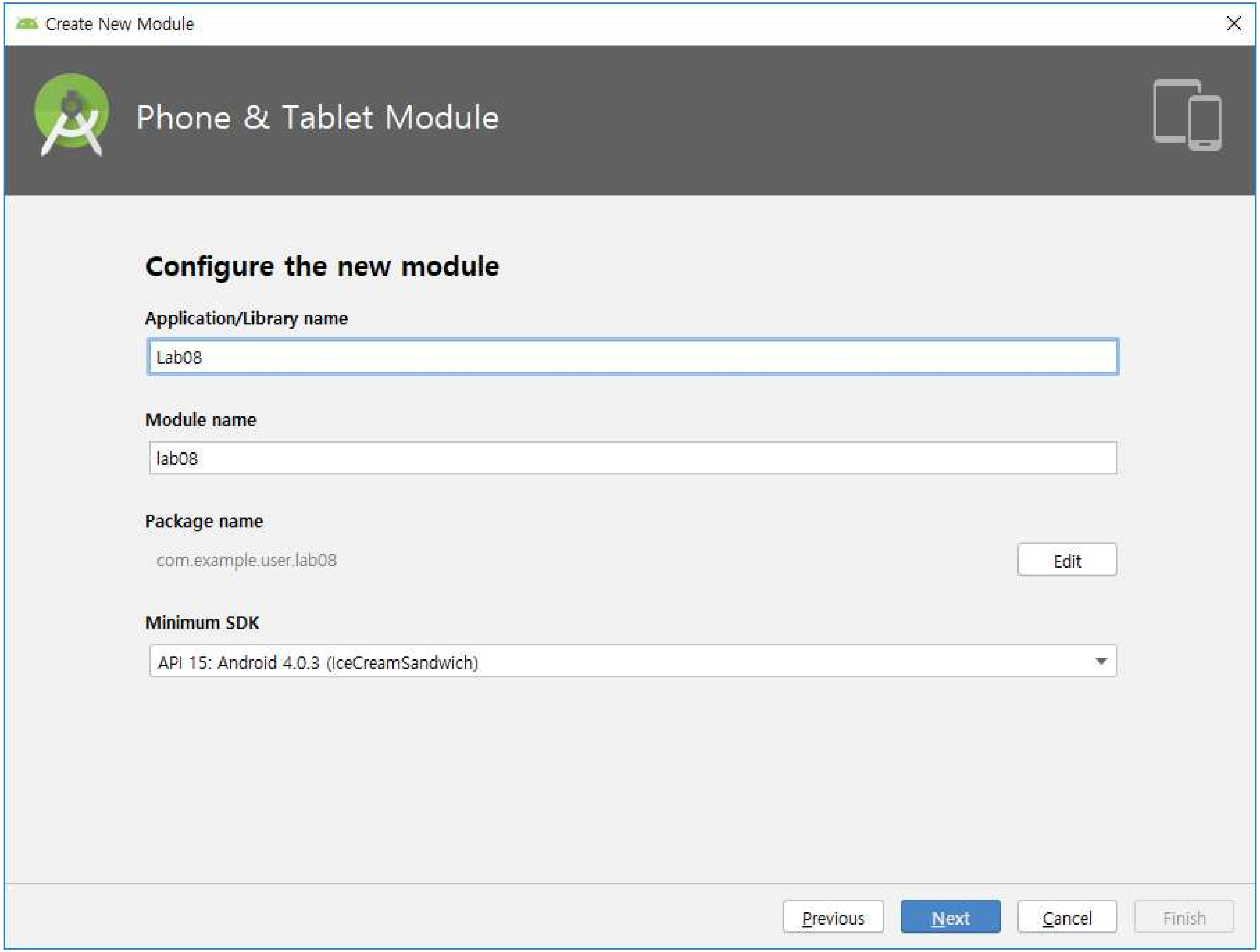
Adapter

Step 1 _ 모듈 생성


File
Edit
View
Navigate
Code
Analyze
Refactor
Build
Run
Tools
VCS
Windo
New
Open...
Profile or Debug APK...
Open Recent
Close Project
Link C++ Project with Gradle
New Project...
Import Project...
Project from Version Control
New Module...
Import Module...
Import Sample...


Create New Module
New Module
Phone & Tablet Module
Android Library
Dynamic Feature Module
Instant Dynamic Feature Module
Wear OS Module
Android TV Module
Android Things Module
Import Gradle Project
Previous
Next
Cancel
Finish



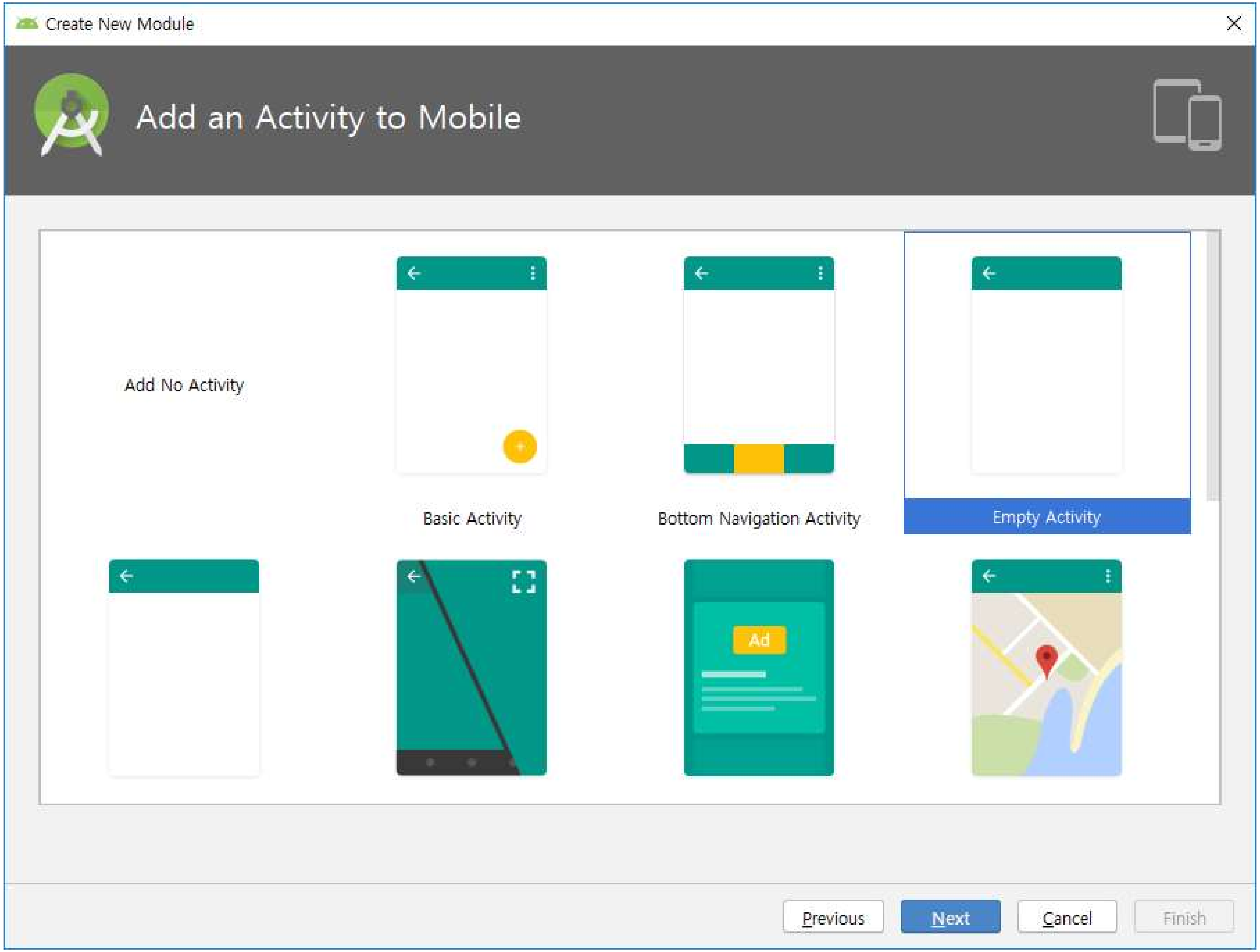
Configure the new module

Application/Library name: Lab08

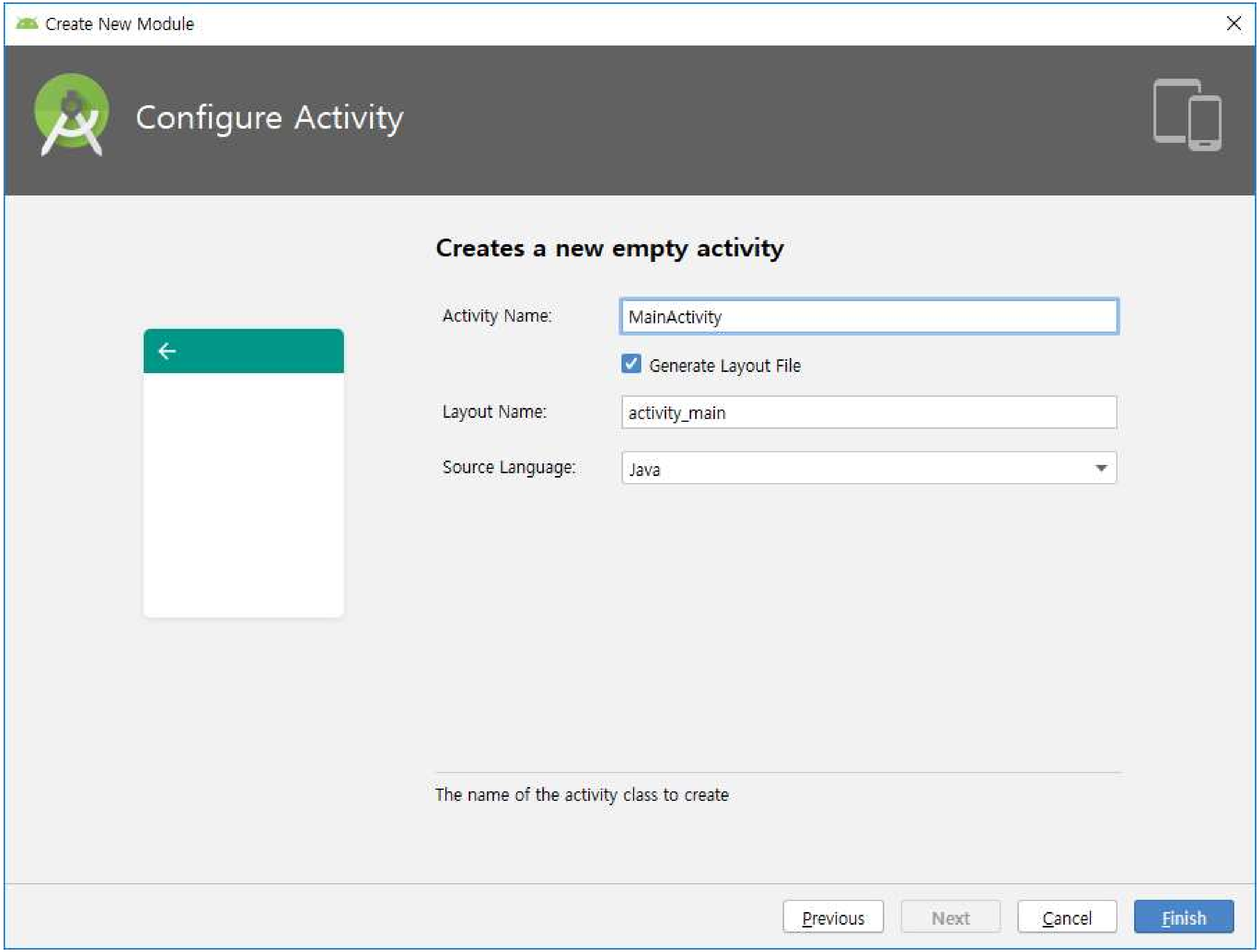
Module name: lab08

Package name: com.example.user.lab08

Minimum SDK: API 15: Android 4.0.3 (IceCreamSandwich)



Create New Module
Add an Activity to Mobile
Add No Activity
Basic Activity
Bottom Navigation Activity
Empty Activity
Ad
Previous
Next
Cancel
Finish



Creates a new empty activity

Activity Name: MainActivity

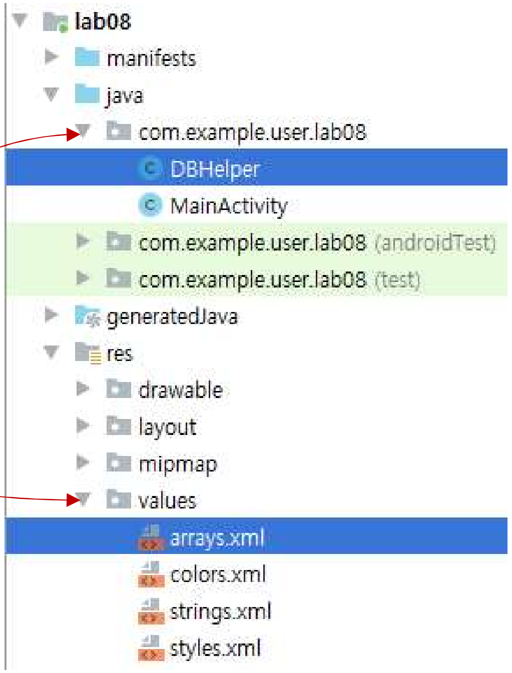
☑ Generate Layout File

Layout Name: activity_main

Source Language: Java

The name of the activity class to create

Step 2 _ 파일 복사



DBHelper.java

arrays.xml

Step 3 _ activity_main.xml 파일 작성

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="ArrayAdapter Test"
        android:textStyle="bold" />

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

```
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="SimpleAdapter Test"
        android:textStyle="bold" />

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

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="CursorAdapter Test"
        android:textStyle="bold" />

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

</LinearLayout>
```

Step 4 _ MainActivity 작성

```
public class MainActivity extends AppCompatActivity implements AdapterView.OnItemClickListener {

    String[] arrayData;

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

        ListView arrayView = findViewById(R.id.main_listview_array);
        arrayView.setOnItemClickListener(this);
        ListView simpleView = findViewById(R.id.main_listview_simple);
        ListView cursorView = findViewById(R.id.main_listview_cursor);
```

첫 번째 ListView

framework에서
이미 정의

String[]을 리턴

```
arrayData = getResources().getStringArray(R.array.location);
ArrayAdapter arrayAdapter = new ArrayAdapter(this,
        android.R.layout.simple_list_item_1,
        arrayData);
arrayView.setAdapter(arrayAdapter);
```

1)

항목에 문자열 데이터 하나

```java
ArrayList<HashMap<String, String>> simpleData = new ArrayList<>();
DBHelper helper = new DBHelper(this);
SQLiteDatabase db = helper.getWritableDatabase();
Cursor cursor = db.rawQuery("select * from tb_data", null);
while (cursor.moveToNext()) {
    HashMap<String, String> map = new HashMap<>();
    map.put("name", cursor.getString(1));
    map.put("content", cursor.getString(2));
    simpleData.add(map);
}
```

Data 없으면 문제

(key, value)

1열

2열

두 번째 ListView

②

```java
SimpleAdapter adapter = new SimpleAdapter(this,
        simpleData,
        android.R.layout.simple_list_item_2,
        new String[]{"name", "content"},
        new int[]{android.R.id.text1, android.R.id.text2});
simpleView.setAdapter(adapter);
```

항목에 문자열 데이터 두 개 위아래 나열

key

from

value

to

세번째 List View

```
        // android.widget.CursorAdapter
        // android.widget.SimpleCursorAdapter
        CursorAdapter cursorAdapter = new SimpleCursorAdapter(this,
                android.R.layout.simple_list_item_2,
                cursor,
                new String[]{"name", "content"},
                new int[]{android.R.id.text1, android.R.id.text2},
                CursorAdapter.FLAG_REGISTER_CONTENT_OBSERVER);
        cursorView.setAdapter(cursorAdapter);
    }

    @Override
    public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
        Toast t = Toast.makeText(this, arrayData[position], Toast.LENGTH_SHORT);
        t.show();
    }
}
```

③

Data 많은 것을 처리 가능

column

The Cursor must include a column named "_id" or this class will not work.

column 필수

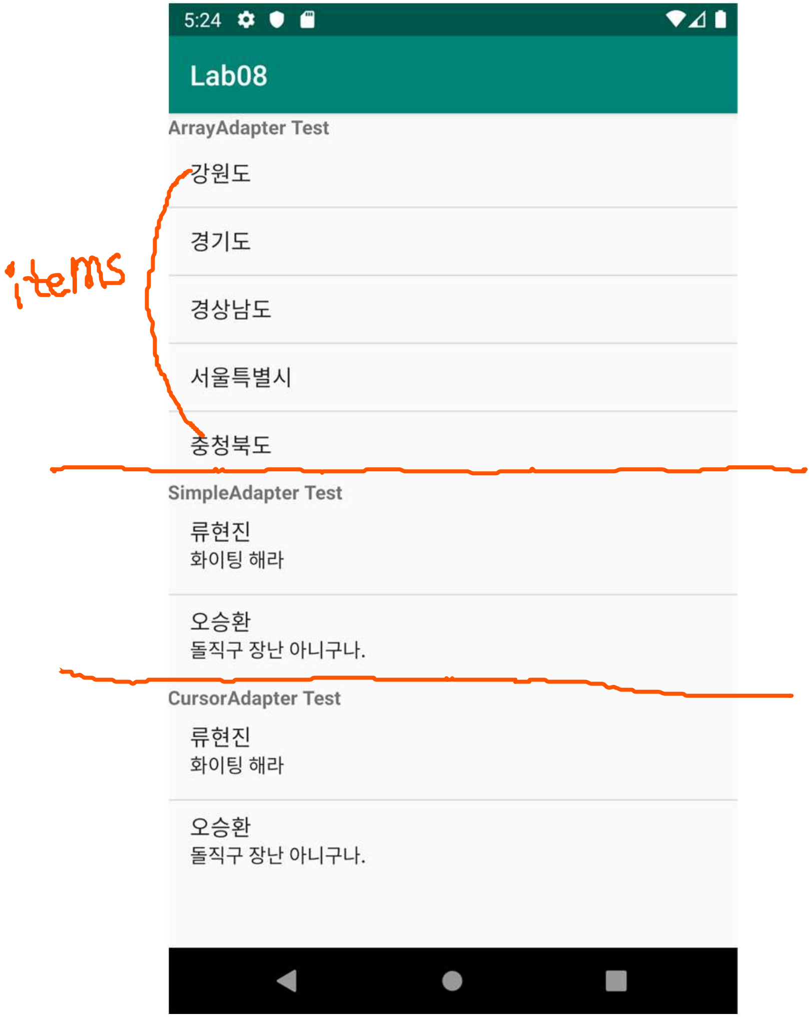
If set the adapter will register a content observer on the cursor and will call onContentChanged() when a notification comes in.

The position of the view in the adapter.

The row id of the item that was clicked

```
public inferface Adapter {
  ...
  public abstract long getItemId (int position);
  ...
}
```

Step 5 _ 실행



5:24

Lab08

ArrayAdapter Test

강원도

경기도

경상남도

서울특별시

충청북도

SimpleAdapter Test

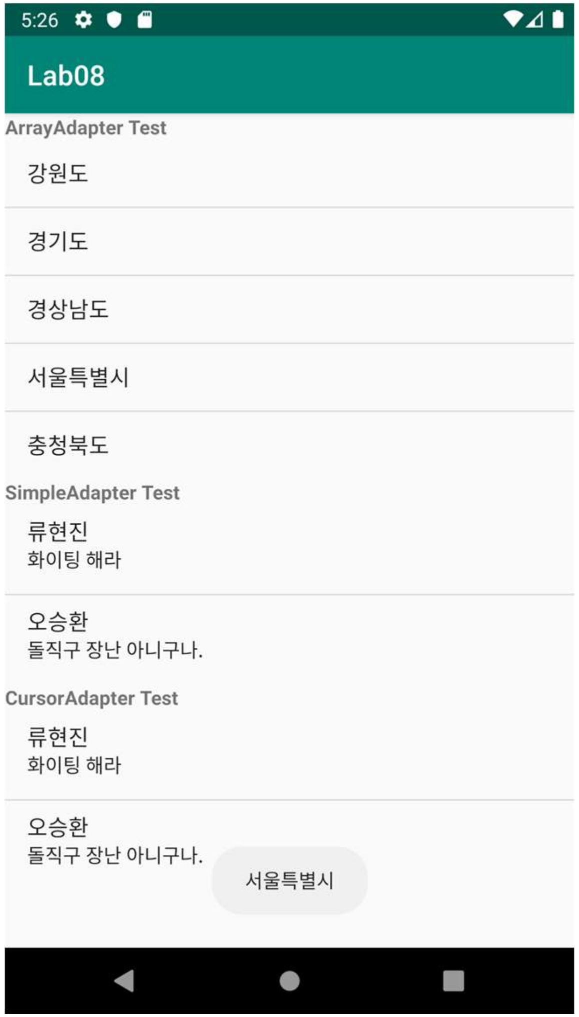
류현진
화이팅 해라

오승환
돌직구 장난 아니구나.

CursorAdapter Test

류현진
화이팅 해라

오승환
돌직구 장난 아니구나.



5:26

Lab08

ArrayAdapter Test

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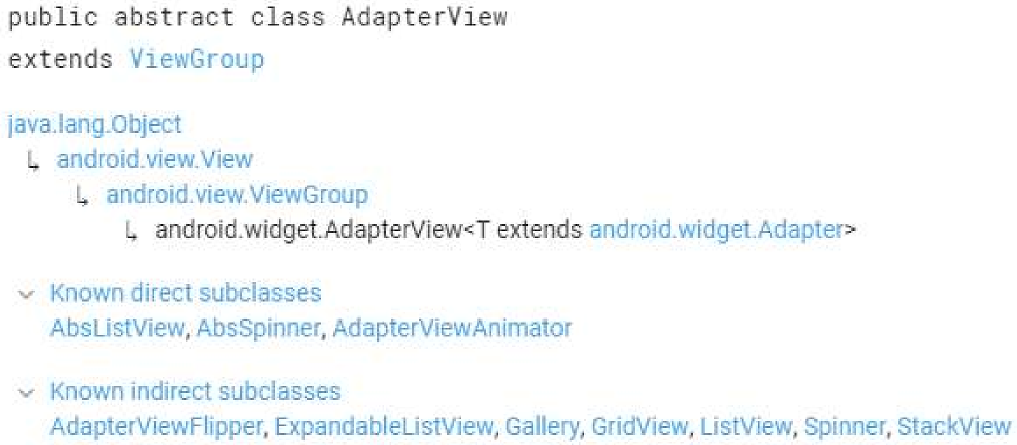
돌직구 장난 아니구나.

서울특별시

Adapter와 AdapterView

- AdapterView is a ViewGroup that displays items loaded into an adapter.
  - AdapterView는 항목을 나열하는 뷰

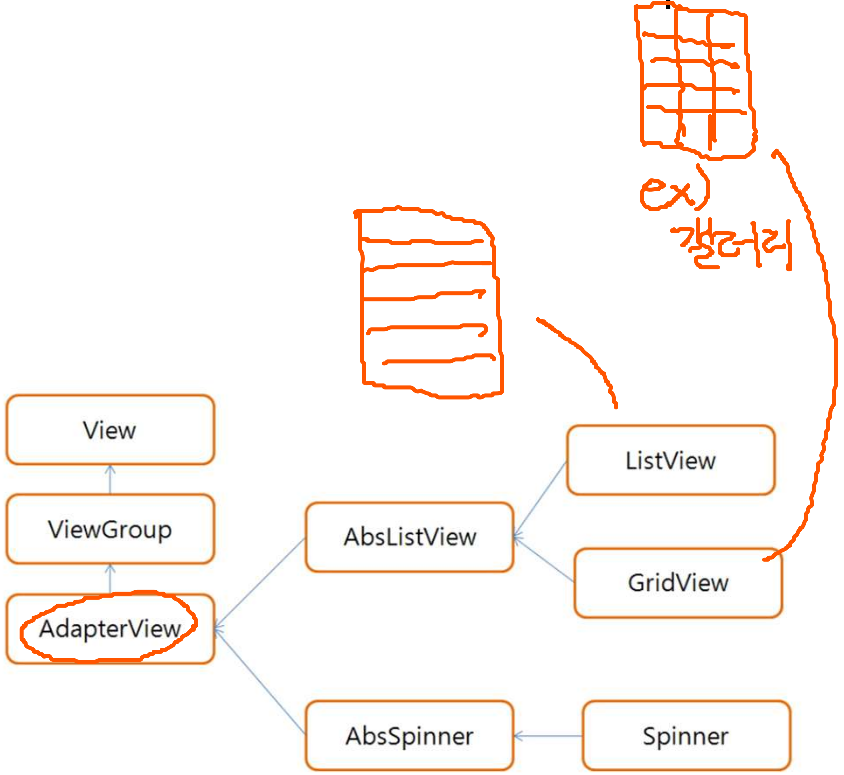


```
public abstract class AdapterView
extends ViewGroup
```

java.lang.Object
 ↳ android.view.View
  ↳ android.view.ViewGroup
   ↳ android.widget.AdapterView<T extends android.widget.Adapter>

⌄ Known direct subclasses
AbsListView, AbsSpinner, AdapterViewAnimator

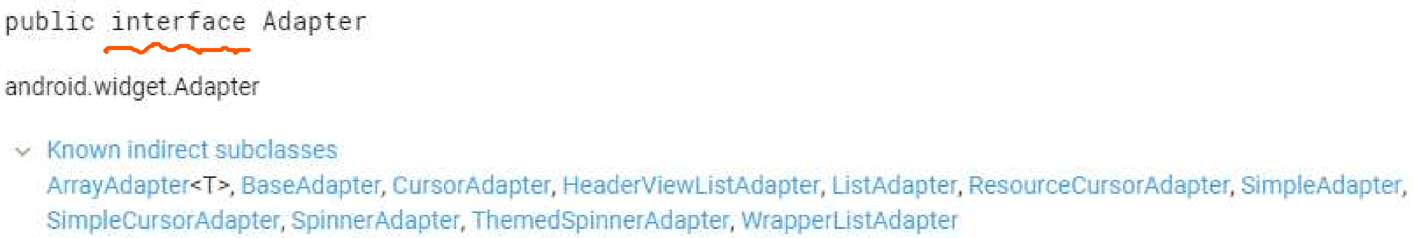
⌄ Known indirect subclasses
AdapterViewFlipper, ExpandableListView, Gallery, GridView, ListView, Spinner, StackView



https://developer.android.com/reference/android/widget/AdapterView.html

Adapter와 AdapterView

- An Adapter object acts as a bridge between an AdapterView and the underlying data for that view.
  - The Adapter provides access to the data items.
  - The Adapter is also responsible for making a View for each item in the data set.

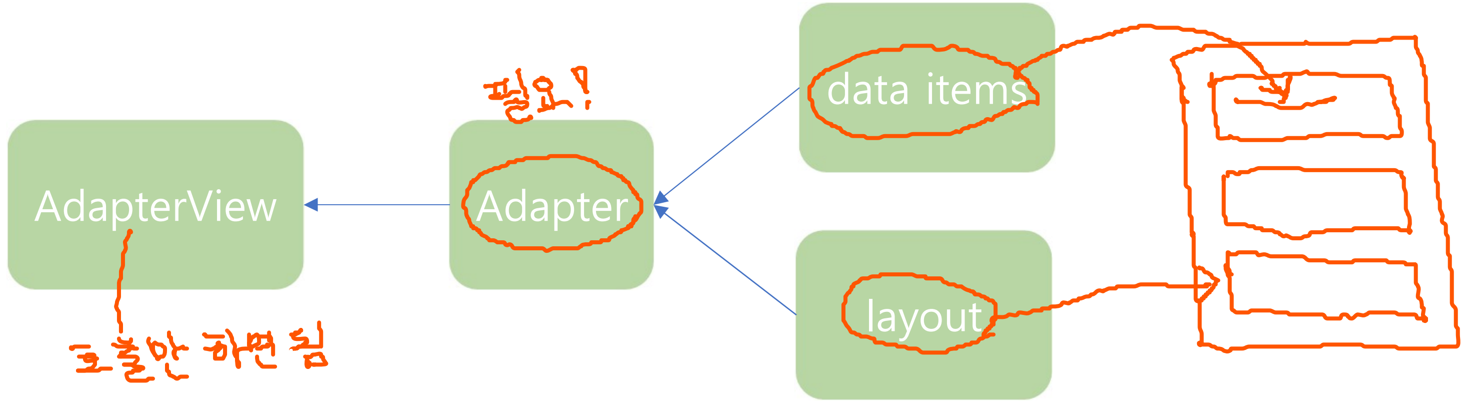


```
public interface Adapter
```

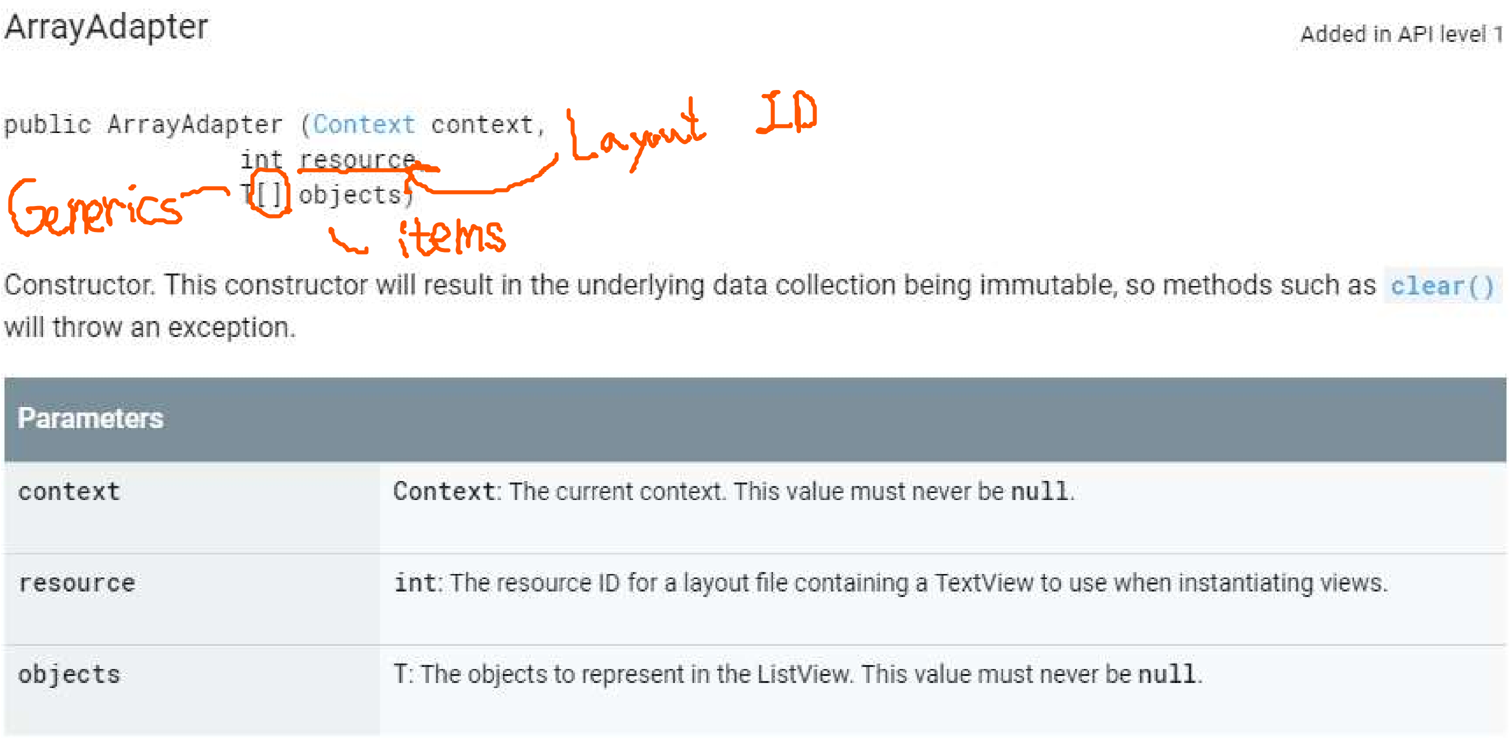
android.widget.Adapter

⌄ Known indirect subclasses

ArrayAdapter<T>, BaseAdapter, CursorAdapter, HeaderViewListAdapter, ListAdapter, ResourceCursorAdapter, SimpleAdapter, SimpleCursorAdapter, SpinnerAdapter, ThemedSpinnerAdapter, WrapperListAdapter



https://developer.android.com/reference/android/widget/Adapter.html



ArrayAdapter

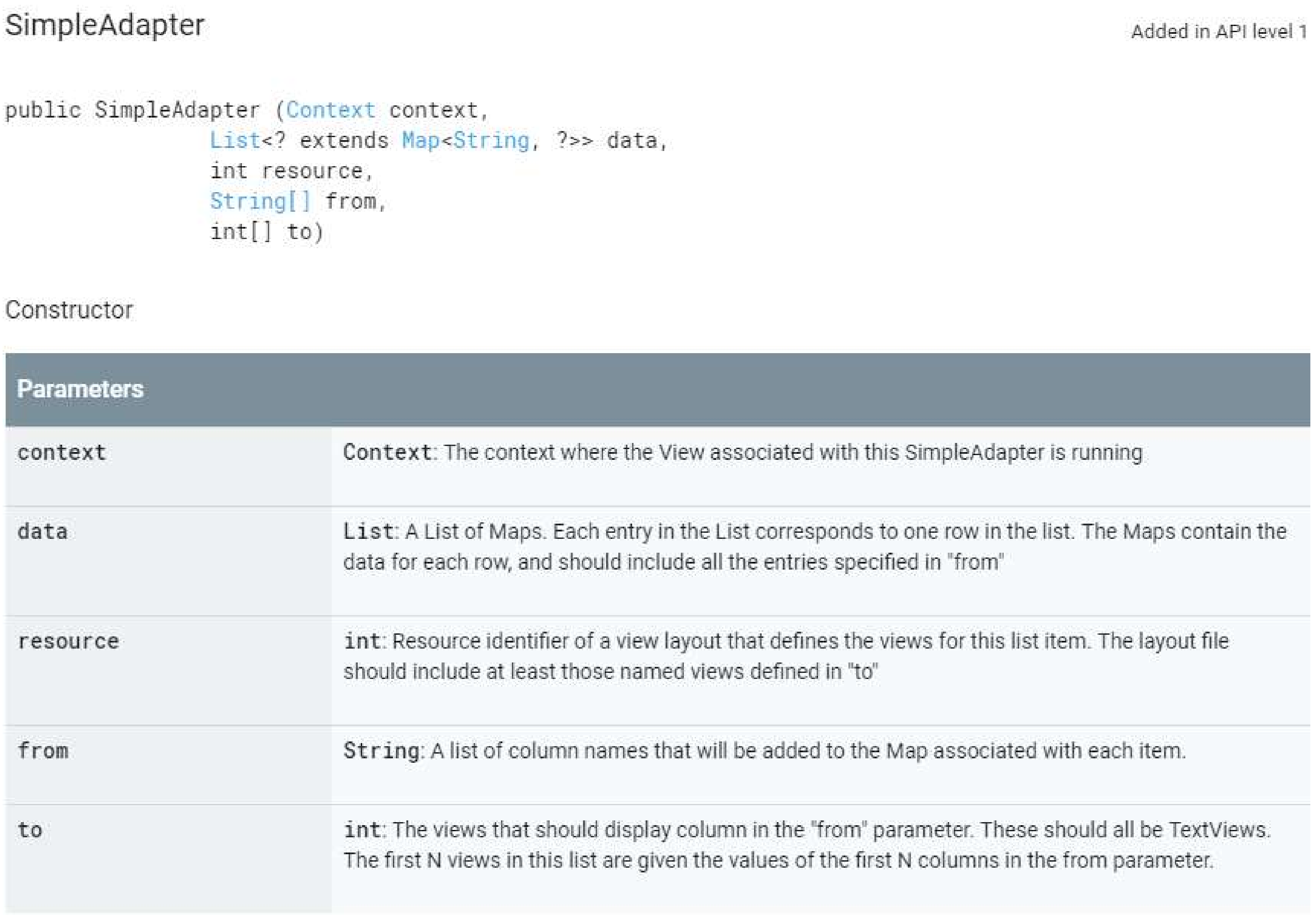
Added in API level 1

```
public ArrayAdapter (Context context,
              int resource,
              T[] objects)
```

Constructor. This constructor will result in the underlying data collection being immutable, so methods such as `clear()` will throw an exception.

Parameters	
`context`	`Context`: The current context. This value must never be `null`.
`resource`	`int`: The resource ID for a layout file containing a TextView to use when instantiating views.
`objects`	T: The objects to represent in the ListView. This value must never be `null`.

https://developer.android.com/reference/android/widget/ArrayAdapter.html



SimpleAdapter

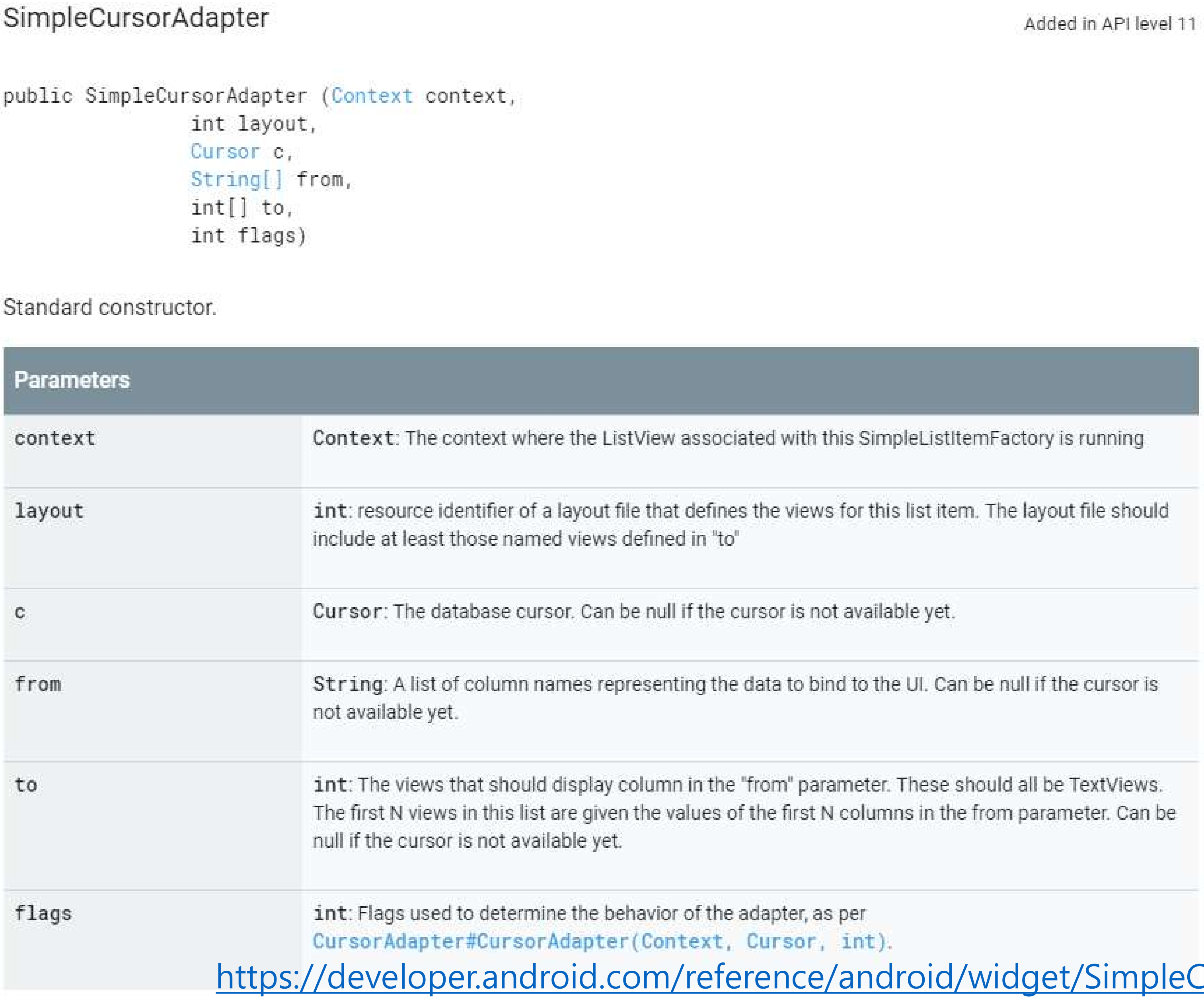
Added in API level 1

```
public SimpleAdapter (Context context,
                List<? extends Map<String, ?>> data,
                int resource,
                String[] from,
                int[] to)
```

Constructor

Parameters	
`context`	`Context`: The context where the View associated with this SimpleAdapter is running
`data`	`List`: A List of Maps. Each entry in the List corresponds to one row in the list. The Maps contain the data for each row, and should include all the entries specified in "from"
`resource`	`int`: Resource identifier of a view layout that defines the views for this list item. The layout file should include at least those named views defined in "to"
`from`	`String`: A list of column names that will be added to the Map associated with each item.
`to`	`int`: The views that should display column in the "from" parameter. These should all be TextViews. The first N views in this list are given the values of the first N columns in the from parameter.

https://developer.android.com/reference/android/widget/SimpleAdapter.html



SimpleCursorAdapter

Added in API level 11

```
public SimpleCursorAdapter (Context context,
                int layout,
                Cursor c,
                String[] from,
                int[] to,
                int flags)
```

Standard constructor.

Parameters	
`context`	`Context`: The context where the ListView associated with this SimpleListItemFactory is running
`layout`	`int`: resource identifier of a layout file that defines the views for this list item. The layout file should include at least those named views defined in "to"
`c`	`Cursor`: The database cursor. Can be null if the cursor is not available yet.
`from`	`String`: A list of column names representing the data to bind to the UI. Can be null if the cursor is not available yet.
`to`	`int`: The views that should display column in the "from" parameter. These should all be TextViews. The first N views in this list are given the values of the first N columns in the from parameter. Can be null if the cursor is not available yet.
`flags`	`int`: Flags used to determine the behavior of the adapter, as per `CursorAdapter#CursorAdapter(Context, Cursor, int)`.

https://developer.android.com/reference/android/widget/SimpleCursorAdapter.html