

# 멀티미디어

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# 오디오

## ▶ 개요

- ▶ 멀티미디어를 동작시키기 위해 제공되는 클래스
- ▶ MediaPlayer 의 play(), pause(), stop() 메소드

Create New Project

Create Android Project

Application name  
Audio\_Test

Company domain  
pjoon.example.com

Project location  
C:\Users\pjoon\AndroidStudioProjects\Audio\_Test

Package name  
com.example.pjoon.audio\_test Edit

☐ Include C++ support

☐ Include Kotlin support

Previous Next Cancel Finish

## ▶ res 폴더에 raw 폴더를 만든 후 음악 파일 복사

리소스	폴더	저장 파일
그림 파일	/res/drawable	*.png, *.jpg, *.xml
메뉴 파일	/res/menu	*.xml
기타 XML 파일	/res/xml	*.xml
raw 파일(음악, 동영상, 텍스트 파일)	/res/raw	*.mp3, *.mp4, *.txt
레이아웃 파일	/res/layout	*.xml
문자열(String)	/res/values	string.xml
문자 배열(String Array)	/res/values	arrays.xml
색상값	/res/values	colors.xml
스타일	/res/values	styles.xml
테마	/res/values	themes.xml



- java
- generatedJava
- res
  - drawable
  - layout
  - mipmap
  - values
- Gradle Scripts

### New Resource Directory

Directory name: raw

Resource type: raw

Source set: main

Available qualifiers:

- Country Code
- Network Code
- Locale
- Layout Direction
- Smallest Screen Width
- Screen Width
- Screen Height
- Size
- Ratio
- Orientation
- UI Mode
- Night Mode
- Density
- Touch Screen

>>

<<

Chosen qu

Nothing to show

- res
  - drawable
  - layout
  - mipmap
  - raw
    - song1.mp3
    - values
- Gradle Scripts

OK

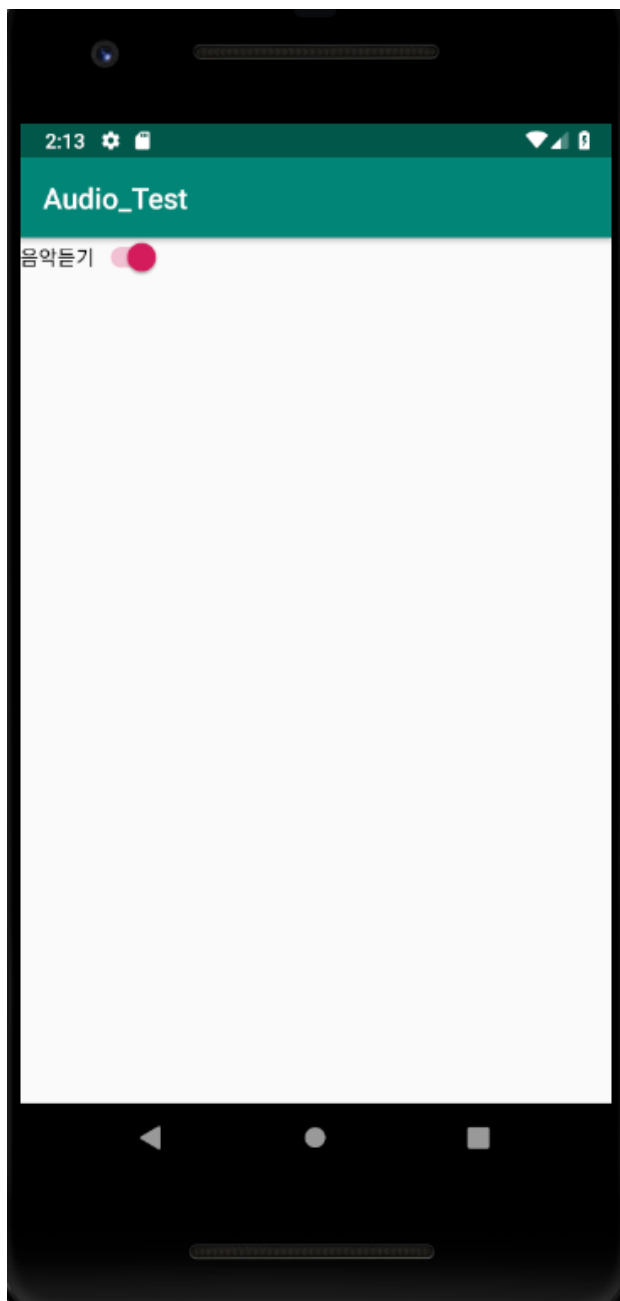
Cancel

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     xmlns:tools="http://schemas.android.com/tools"
4     android:layout_width="fill_parent"
5     android:layout_height="fill_parent"
6     android:orientation="vertical" >
7
8     <Switch
9         android:id="@+id/switch1"
10        android:layout_width="wrap_content"
11        android:layout_height="wrap_content"
12        android:text="음악듣기" />
13
14 </LinearLayout>
```

```

9  public class MainActivity extends AppCompatActivity {
10
11      @Override
12      protected void onCreate(Bundle savedInstanceState) {
13          super.onCreate(savedInstanceState);
14          setContentView(R.layout.activity_main);
15
16          final MediaPlayer mPlayer;
17          mPlayer = MediaPlayer.create(context this, R.raw.song1);
18
19          final Switch switch1 = (Switch) findViewById(R.id.switch1);
20          switch1.setOnClickListener(new View.OnClickListener() {
21              public void onClick(View v) {
22                  if (switch1.isChecked() == true)
23                      mPlayer.start();
24                  else
25                      mPlayer.stop();
26              }
27          });
28      }
29  }


```



# 오디오 기능 확장

## ▶ 선택한 곡을 실행, 중지

Create New Project ⌵

 Create Android Project

**Application name**  
Audio\_Test2

**Company domain**  
pjoon.example.com

**Project location**  
C:\Users\pjoon\AndroidStudioProjects\Audio\_Test2 ...

**Package name**  
com.example.pjoon.audio\_test2 Edit

☐ Include C++ support

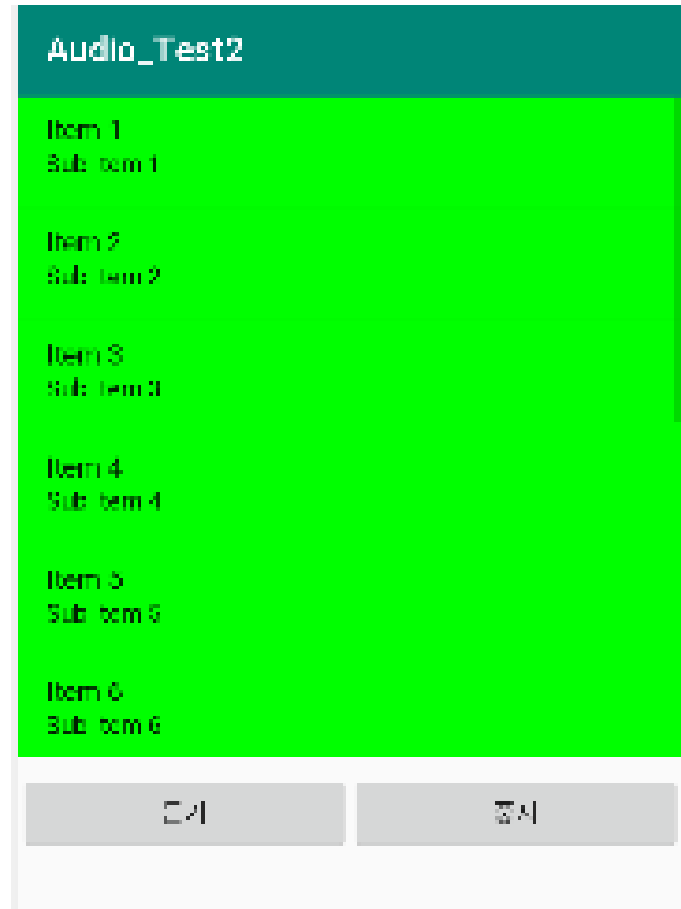
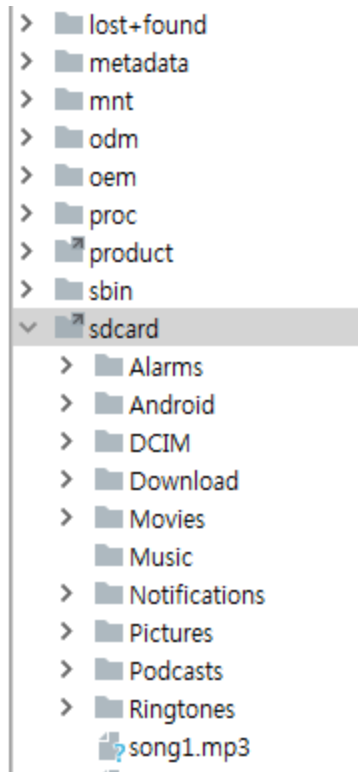
☐ Include Kotlin support

Previous Next Cancel Finish



# MP3 Player 만들기

- ▶ Device File Explore 에서 sdcard에 파일 upload



```

1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3   xmlns:tools="http://schemas.android.com/tools"
4   android:layout_width="fill_parent"
5   android:layout_height="fill_parent"
6   android:orientation="vertical" >
7
8   <LinearLayout
9       android:layout_width="fill_parent"
10      android:layout_height="0dp"
11      android:layout_gravity="center"
12      android:layout_weight="6"
13      android:orientation="horizontal" >
14
15      <ListView
16          android:id="@+id/listViewMP3"
17          android:layout_width="match_parent"
18          android:layout_height="wrap_content"
19          android:background="#00ff00" >
20      </ListView>
21  </LinearLayout>
22
23  <LinearLayout
24      android:layout_width="fill_parent"
25      android:layout_height="0dp"
26      android:layout_weight="1"
27      android:gravity="center"
28      android:orientation="horizontal" >
29
30      <Button
31          android:id="@+id/btnPlay"
32          android:layout_width="fill_parent"
33          android:layout_height="wrap_content"
34          android:layout_weight="1"
35          android:text="듣기" />
36
37      <Button
38          android:id="@+id/btnStop"
39          android:layout_width="fill_parent"
40          android:layout_height="wrap_content"
41          android:layout_weight="1"
42          android:text="중지" />
43  </LinearLayout>

```

```

44
45 <LinearLayout
46     android:layout_width="fill_parent"
47     android:layout_height="0dp"
48     android:layout_weight="1"
49     android:gravity="left|center"
50     android:orientation="horizontal" >
51
52     <TextView
53         android:id="@+id/tvMP3"
54         android:layout_width="wrap_content"
55         android:layout_height="wrap_content"
56         android:text="실행중인 음악:" />
57
58     <ProgressBar
59         android:id="@+id/pbMP3"
60         android:layout_width="wrap_content"
61         android:layout_height="wrap_content"
62         android:visibility="invisible" />
63 </LinearLayout>
64
65 </LinearLayout>

```

```

15 public class MainActivity extends AppCompatActivity {
16
17     ListView listViewMP3;
18     Button btnPlay, btnStop;
19     TextView tvMP3;
20     ProgressBar pbMP3;
21
22     ArrayList<String> mp3List;
23     String selectedMP3;
24
25     String mp3Path = Environment.getExternalStorageDirectory().getPath() + "/" ;
26     MediaPlayer mPlayer;
27
28     @Override
29     protected void onCreate(Bundle savedInstanceState) {
30         super.onCreate(savedInstanceState);
31         setContentView(R.layout.activity_main);
32         setTitle("간단 MP3 플레이어");
33         ActivityCompat.requestPermissions( activity: this, new String[] {android.Manifest.permission.WRITE_EXTERNAL_STORAGE},MODE_PRIVATE);
34     }
35
36 }

```

```

33 protected void onCreate(Bundle savedInstanceState) {
34     super.onCreate(savedInstanceState);
35     setContentView(R.layout.activity_main);
36     setTitle("간단 MP3 플레이어");
37     ActivityCompat.requestPermissions(activity, this, new String[] {android.Manifest.permission.WRITE_EXTERNAL_STORAGE}, MODE_PRIVATE);
38
39     // SDCard의 파일을 읽어서 리스트뷰에 출력
40     mp3List = new ArrayList<String>(); // 가변적 문자열
41
42     File[] listFiles = new File(mp3Path).listFiles();
43     String fileName, extName;
44     for (File file : listFiles) {
45         fileName = file.getName();
46         extName = fileName.substring(fileName.length() - 3);
47         if (extName.equals((String) ".mp3")) // 확장명이 mp3일 때만 추가함.
48             mp3List.add(fileName);
49     }
50
51     ListView listViewMP3 = (ListView) findViewById(R.id.listViewMP3);
52     ArrayAdapter<String> adapter = new ArrayAdapter<String>(context, this,
53         android.R.layout.simple_list_item_single_choice, mp3List);
54     listViewMP3.setChoiceMode(ListView.CHOICE_MODE_SINGLE);
55     listViewMP3.setAdapter(adapter);
56     listViewMP3.setItemChecked(position, 0, value: true);
57
58     listViewMP3
59         .setOnItemClickListener(new AdapterView.OnItemClickListener() {
60             public void onItemClick(AdapterView<?> arg0, View arg1, int arg2, long arg3)
61             {
62                 selectedMP3 = mp3List.get(arg2);
63             }
64         });
65
66     selectedMP3 = mp3List.get(0);
67 }
68

```

```

69 btnPlay = (Button) findViewById(R.id.btnPlay);
70 btnStop = (Button) findViewById(R.id.btnStop);
71 tvMP3 = (TextView) findViewById(R.id.tvMP3);
72 pbMP3 = (ProgressBar) findViewById(R.id.pbMP3);
73
74 btnPlay.setOnClickListener(new View.OnClickListener() {
75     public void onClick(View v) {
76         try {
77             mPlayer = new MediaPlayer();
78             mPlayer.setDataSource(mp3Path + selectedMP3);
79             mPlayer.prepare();
80             mPlayer.start();
81             btnPlay.setClickable(false);
82             btnStop.setClickable(true);
83             tvMP3.setText("실행중인 음악 : " + selectedMP3);
84             pbMP3.setVisibility(View.VISIBLE);
85         } catch (IOException e) {
86         }
87     }
88 });
89
90 btnStop.setOnClickListener(new View.OnClickListener() {
91     public void onClick(View v) {
92         mPlayer.stop();
93         mPlayer.reset();
94         btnPlay.setClickable(true);
95         btnStop.setClickable(false);
96         tvMP3.setText("실행중인 음악 : ");
97         pbMP3.setVisibility(View.INVISIBLE);
98     }
99 });
100 btnStop.setClickable(false);
101

```

# Manifest 파일 권한 설정

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <manifest xmlns:android="http://schemas.android.com/apk/res/android"
3     package="com.example.pjoon.audio_test2">
4
5     <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>
6
7     <application
8         android:allowBackup="true"
9         android:icon="@mipmap/ic_launcher"
10        android:label="Audio_Test2"
11        android:roundIcon="@mipmap/ic_launcher_round"
12        android:supportRtl="true"
13        android:theme="@style/AppTheme">
14         <activity android:name=".MainActivity">
15             <intent-filter>
16                 <action android:name="android.intent.action.MAIN" />
17
18                 <category android:name="android.intent.category.LAUNCHER" />
19             </intent-filter>
20         </activity>
21     </application>
22
23 </manifest>
```

