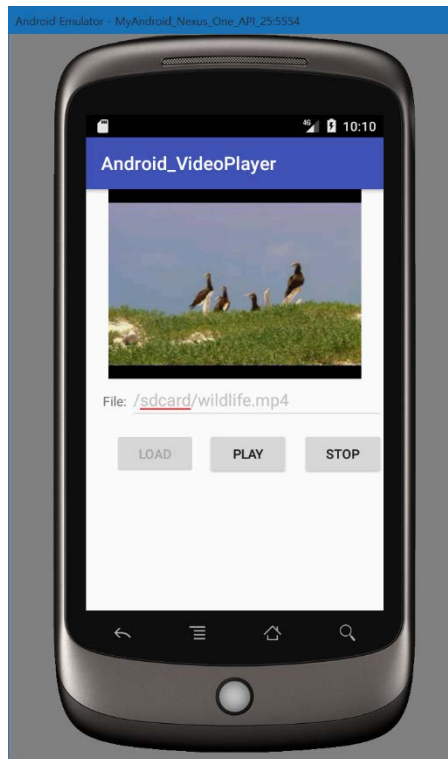




android



Video Player 구현





학습 목표

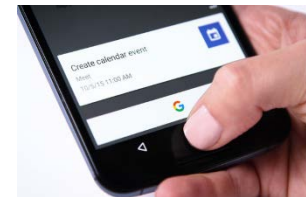
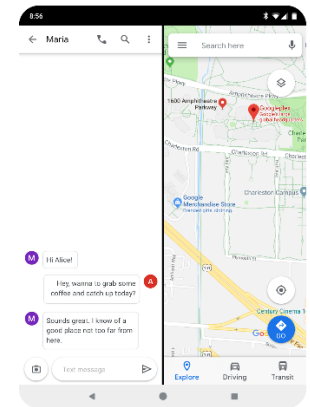
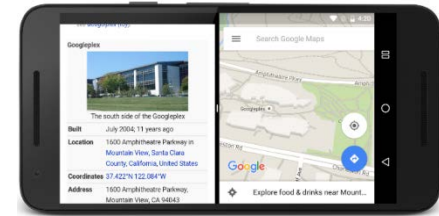
교육 목표

❖ Android Video

❖ Android Video 재생 구현

◆ 실습 I : SD card Video 재생 구현

◆ 실습 II : Android Video Player 구현





Android Video

■ Android 지원 Video 형식

- ❖ MP4 (MPEG-4 낮은 비트 속도)
- ❖ H.263
- ❖ H.264 (AVC)
- ❖ 윈도우 SDK 상에서는 MP4 만이 안정적으로 동작

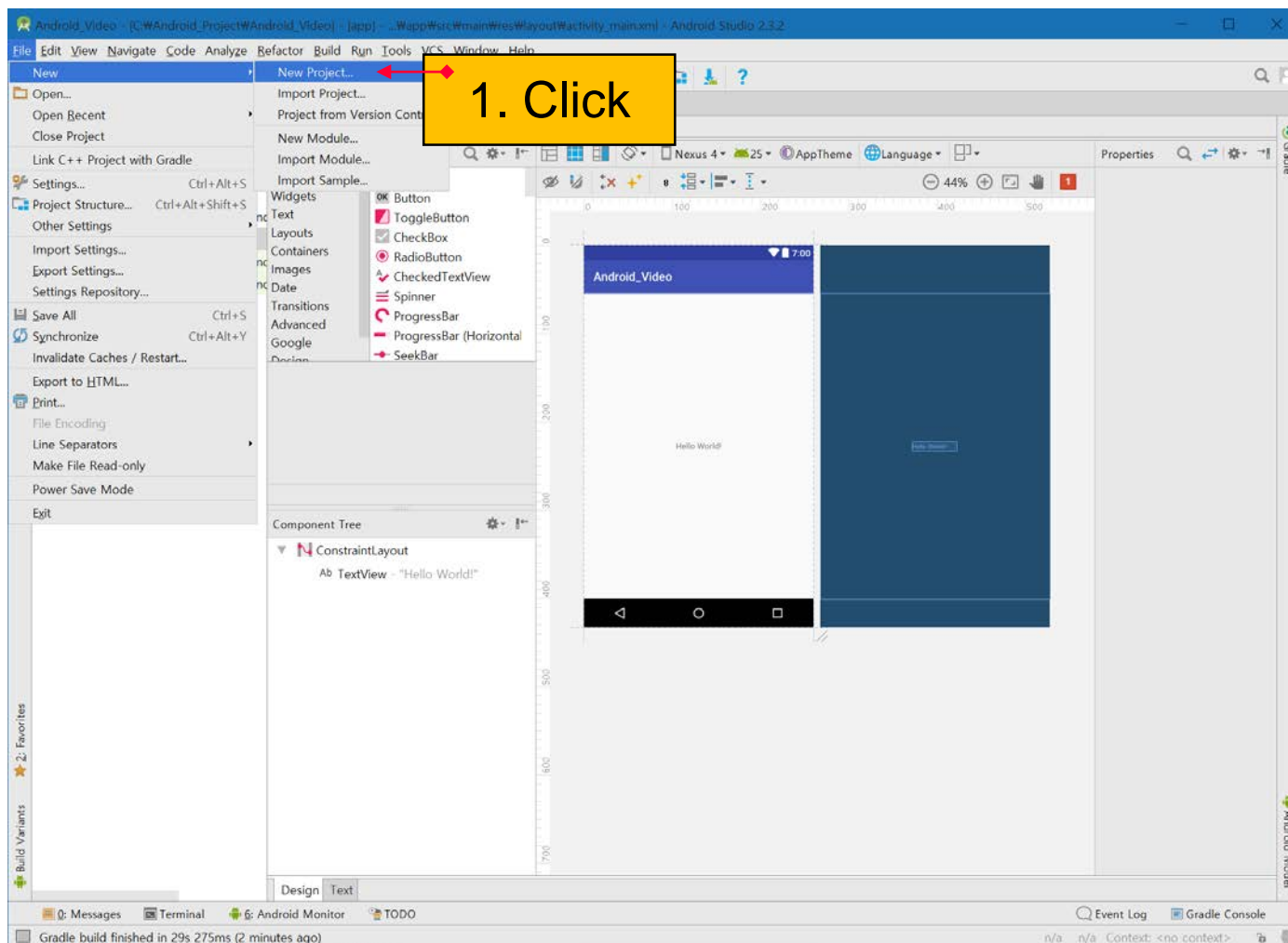




Android Video 재생 구현 (1)

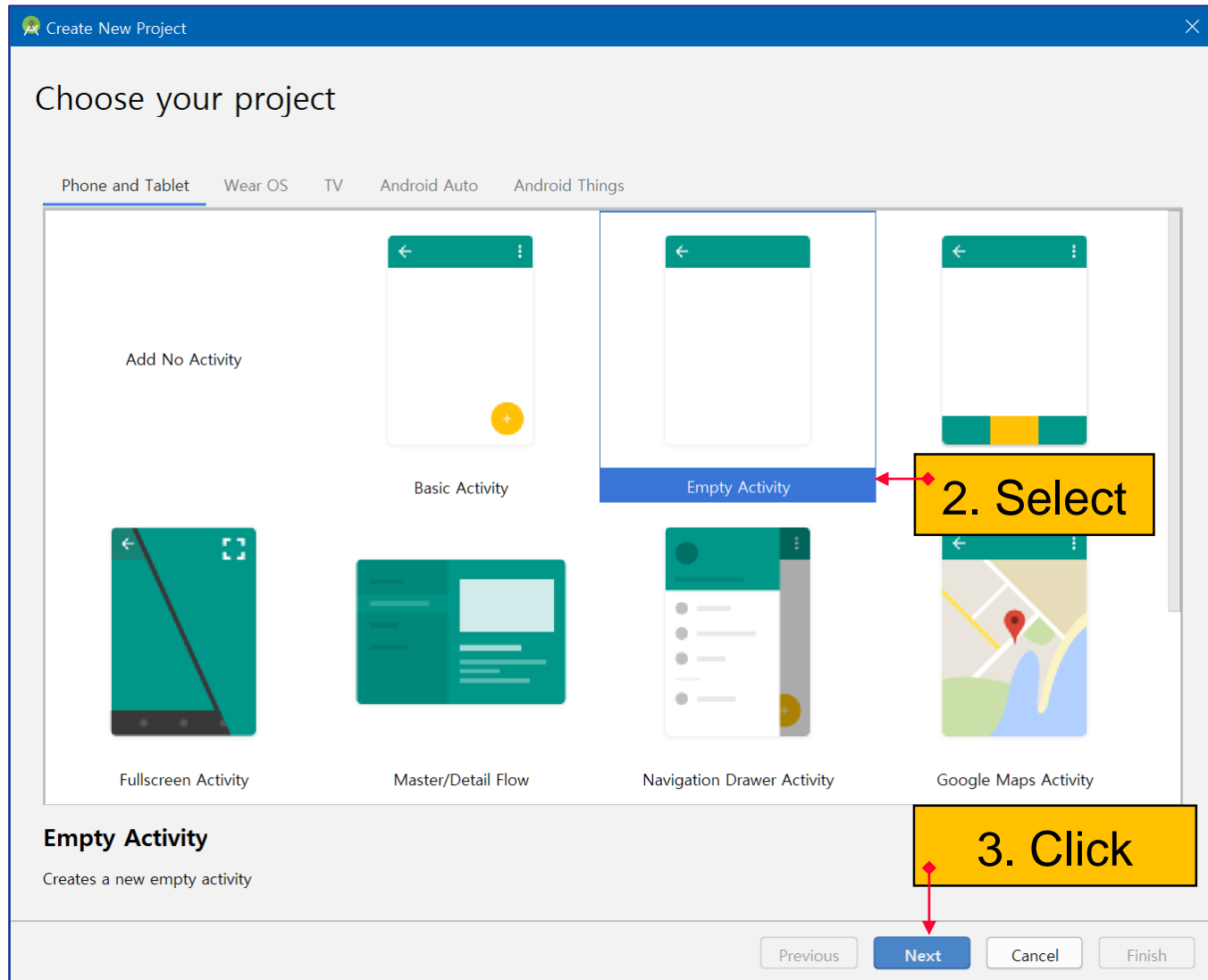
■ Android 프로젝트 생성

❖ 프로젝트 명 : Android_Video





Android Video 재생 구현 (2)





Android Video 재생 구현 (3)

Create New Project

Configure your project

4. Input "Android_Video"

Name: Android_Video

5. Input "com.inhatc.android_video"

Package name: com.inhatc.android_video

Save location: C:\Android_Project\Android_Video

6. Select

Language: Java

7. Select

Minimum API level: API 26: Android 8.0 (Oreo)

8. Click

Finish

Empty Activity

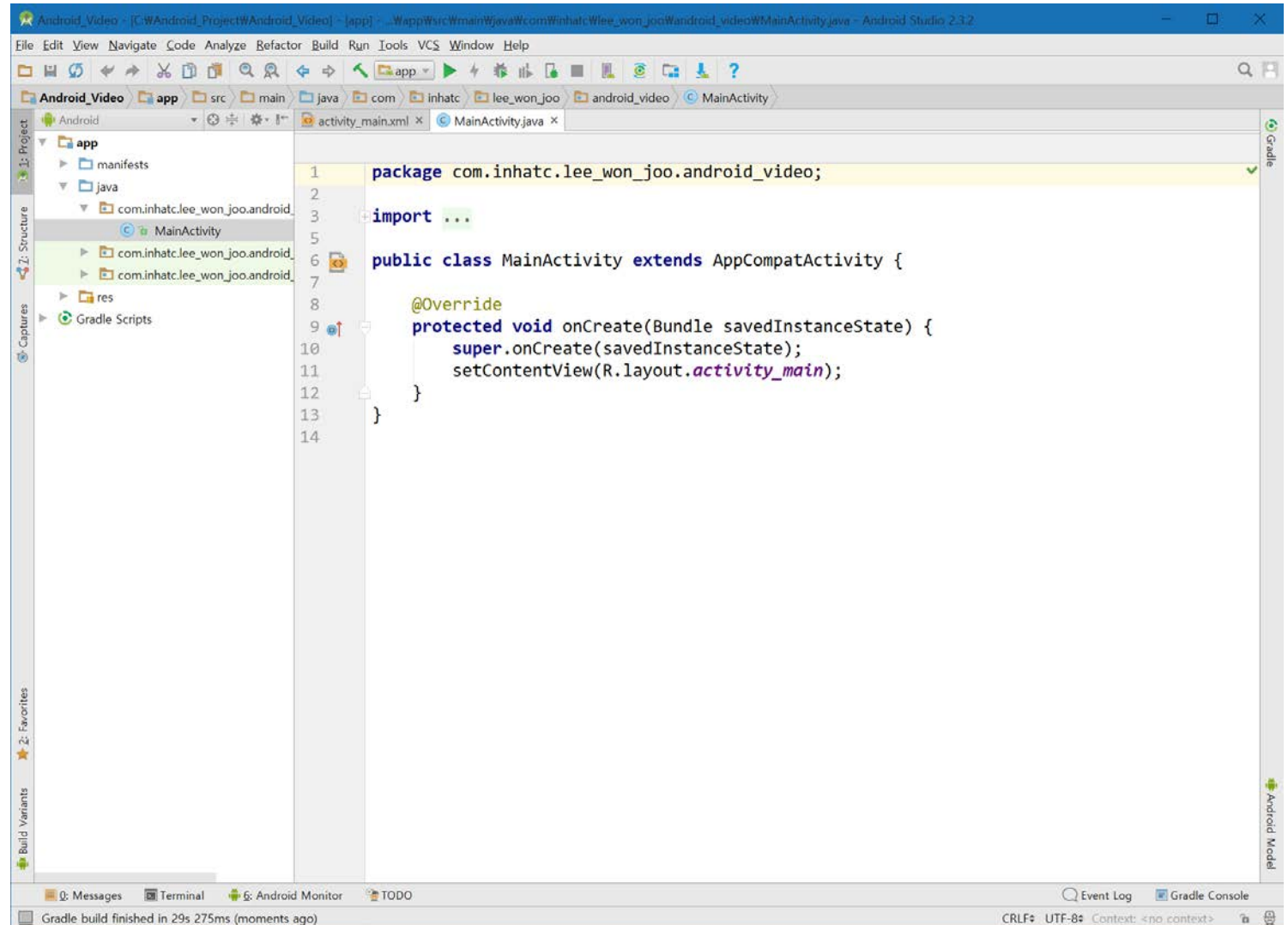
Creates a new empty activity

Previous Next Cancel Finish



Android Video 재생 구현 (4)

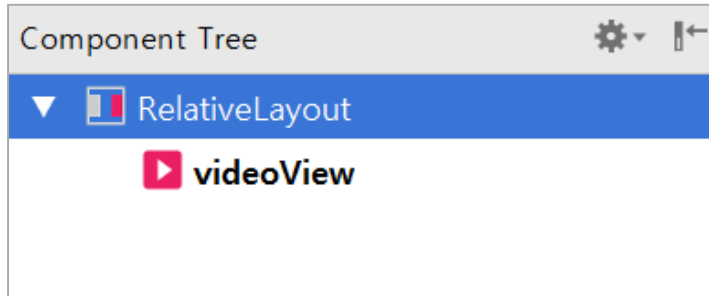
❖ Android 프로젝트 생성 완료





Android Video 재생 구현 (5)

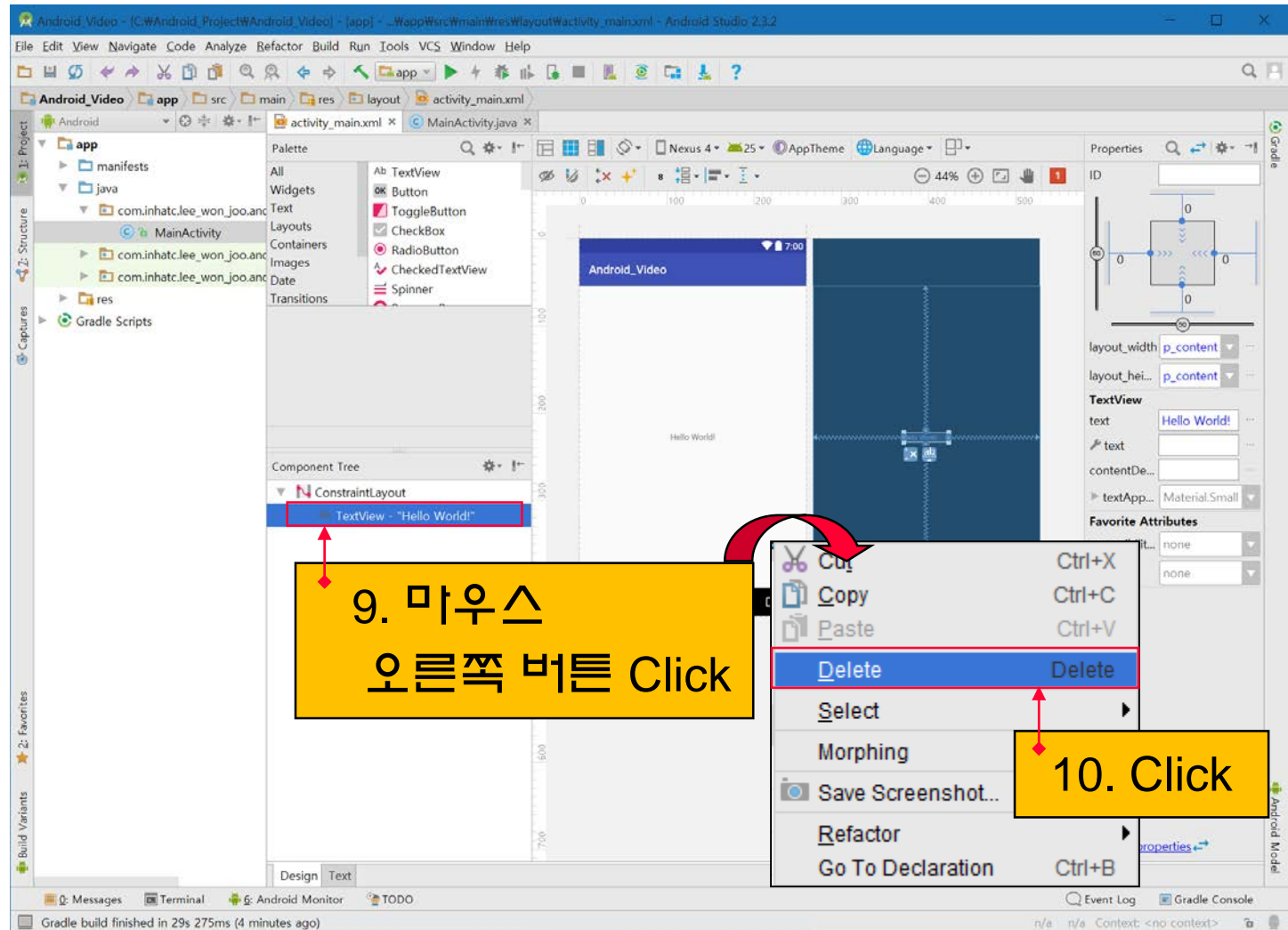
■ UI 설계





Android Video 재생 구현 (6)

❖ TextView 삭제



Android Video 재생 구현 (7)

❖ Activity_main.xml 속성 지정

| 컨트롤 | 속성 지정 |
|-----------|---|
| VideoView | <ul style="list-style-type: none"> • android:id="@+id/videoView" • android:layout_width="match_parent" • android:layout_height="wrap_content" • android:layout_gravity="center" |

```

activity_main.xml x
1  <?xml version="1.0" encoding="utf-8"?>
2  <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      xmlns:app="http://schemas.android.com/apk/res-auto"
4      xmlns:tools="http://schemas.android.com/tools"
5      android:layout_width="match_parent"
6      android:layout_height="match_parent"
7      tools:context="com.inhatc.lee_won_joo.android_video.MainActivity">
8
9      <VideoView
10         android:id="@+id/videoView"
11         android:layout_width="match_parent"
12         android:layout_height="wrap_content"
13         android:layout_gravity="center"/>
14  </RelativeLayout>
15
Design  Text

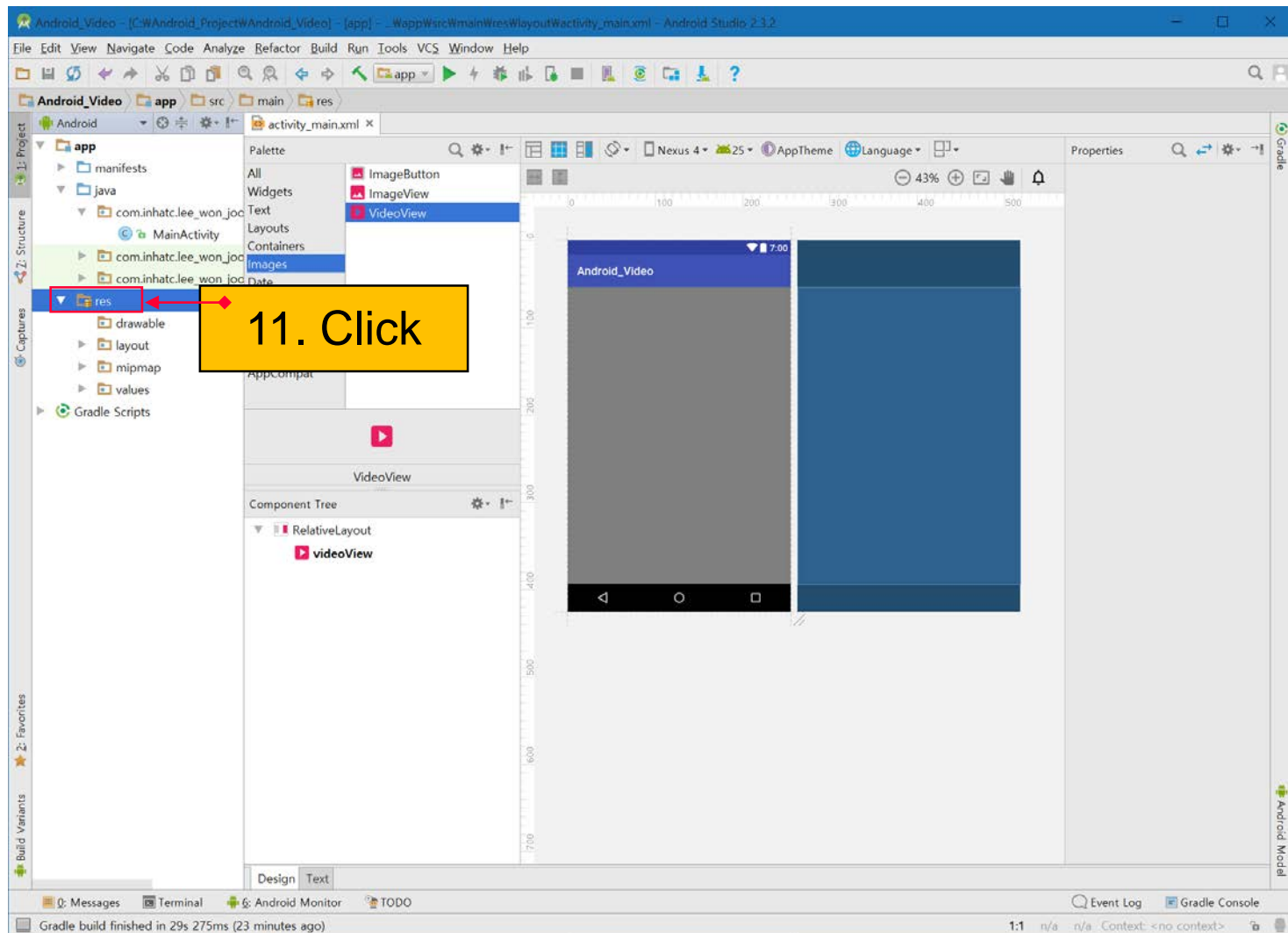
```





Android Video 재생 구현 (8)

Create raw folder





Android Video 재생 구현 (9)

12. Click

13. Select "raw"

14. Click

Android Studio 2.3.2

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

New Project...
Import Project...
Project from Version Control...
New Module...
Import Module...
Import Sample...
Android resource file
Android resource directory
File
Directory
C++ Class
C/C++ Source File
C/C++ Header File
Image Asset
Vector Asset
Singleton
Edit File Templates...
AIDL
Activity
Android Auto
Folder
Fragment
Google
Other
Service
UI Component
Wear
Widget
XML
Resource Bundle

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

Chosen qualifiers:

Nothing to show

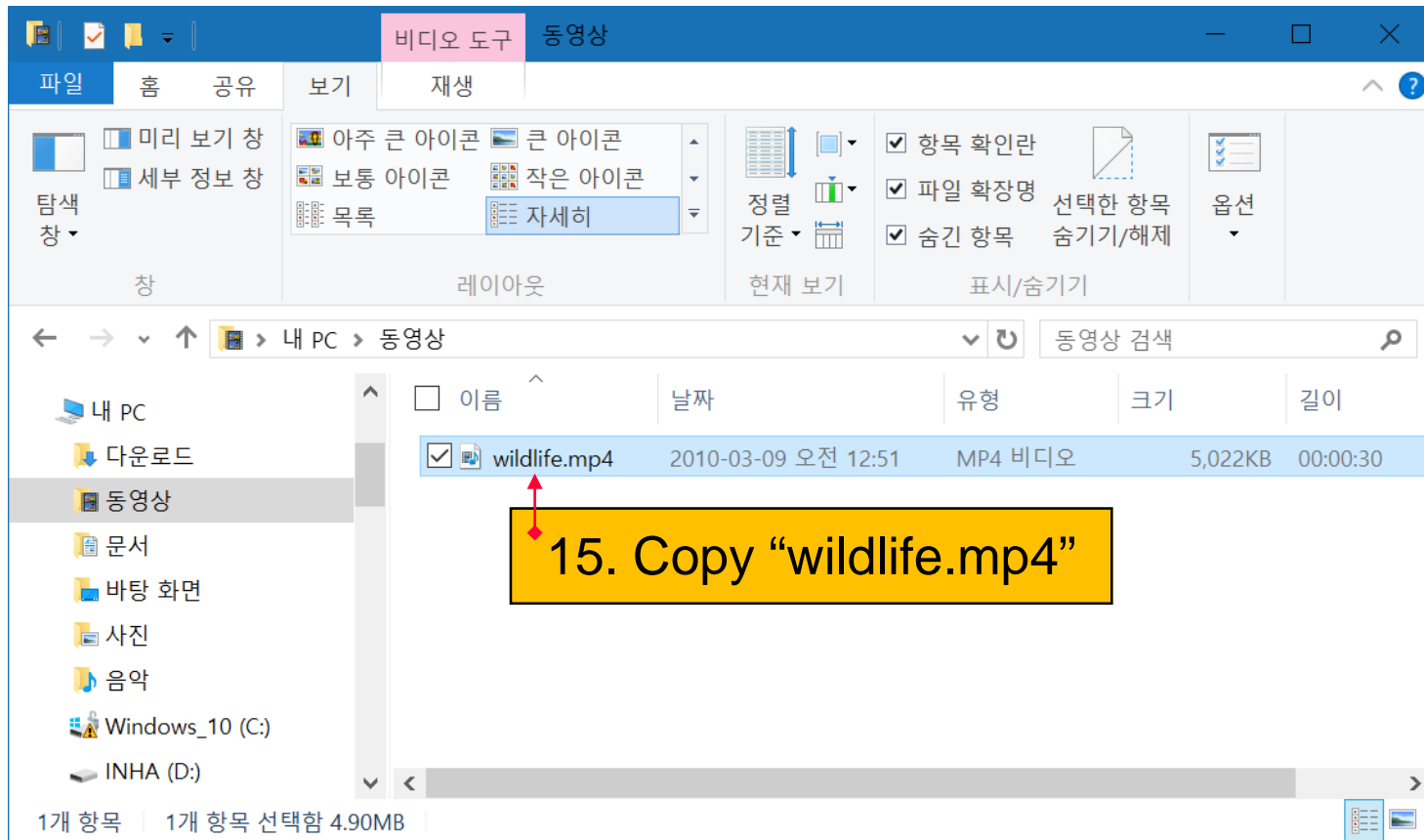
OK Cancel Help



Android Video 재생 구현 (10)

❖ Import mp4 file

◆ wildlife.mp4





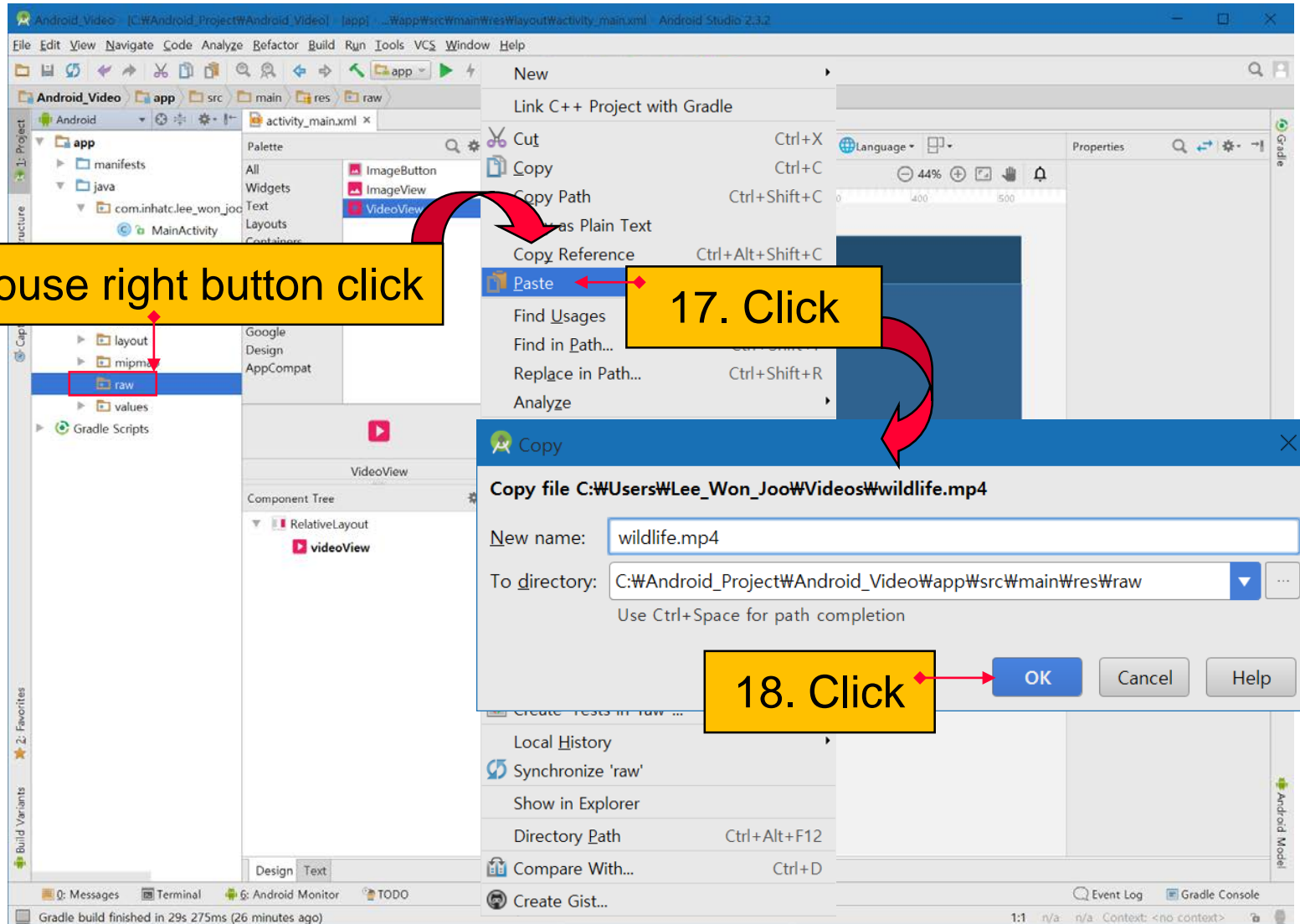
Android Video 재생 구현 (11)

❖ Import mp4 file

16. Mouse right button click

17. Click

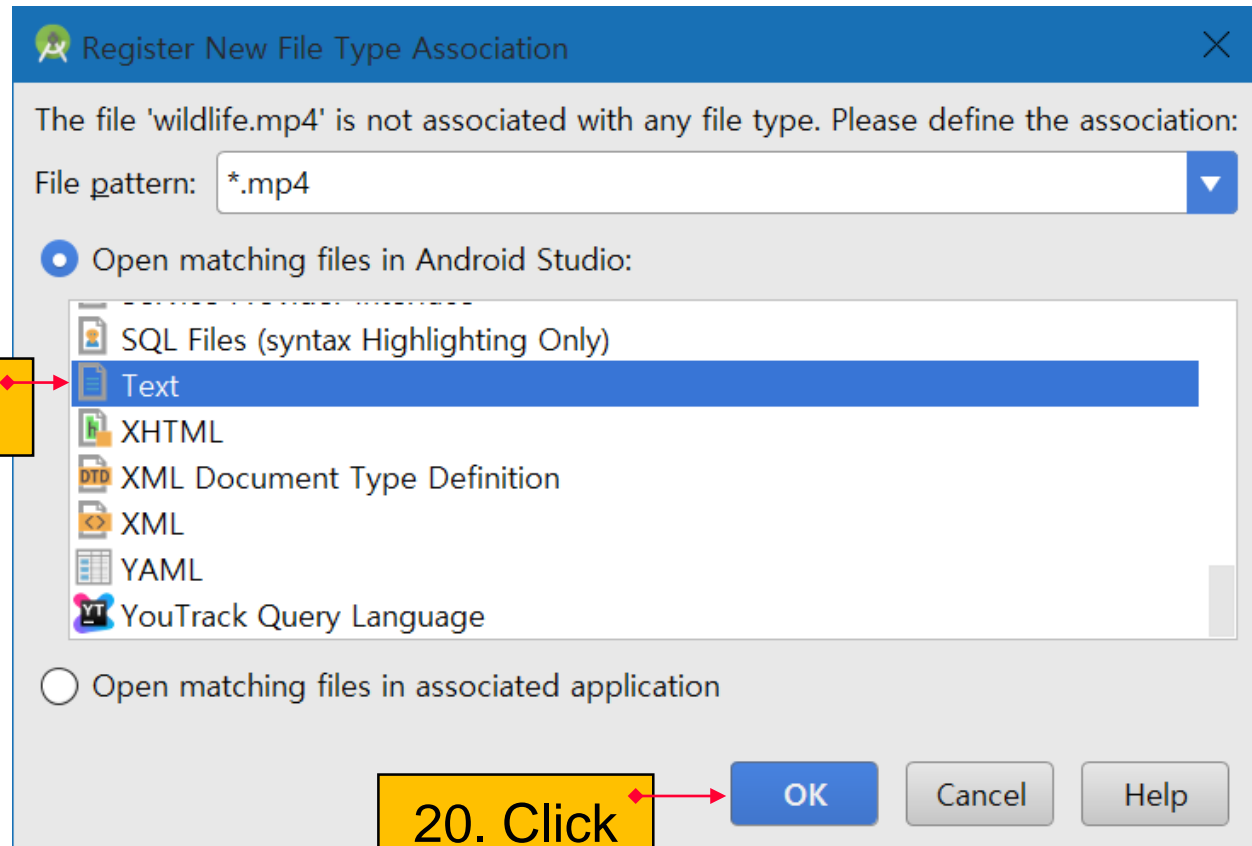
18. Click





Android Video 재생 구현 (12)

❖ Setting file type



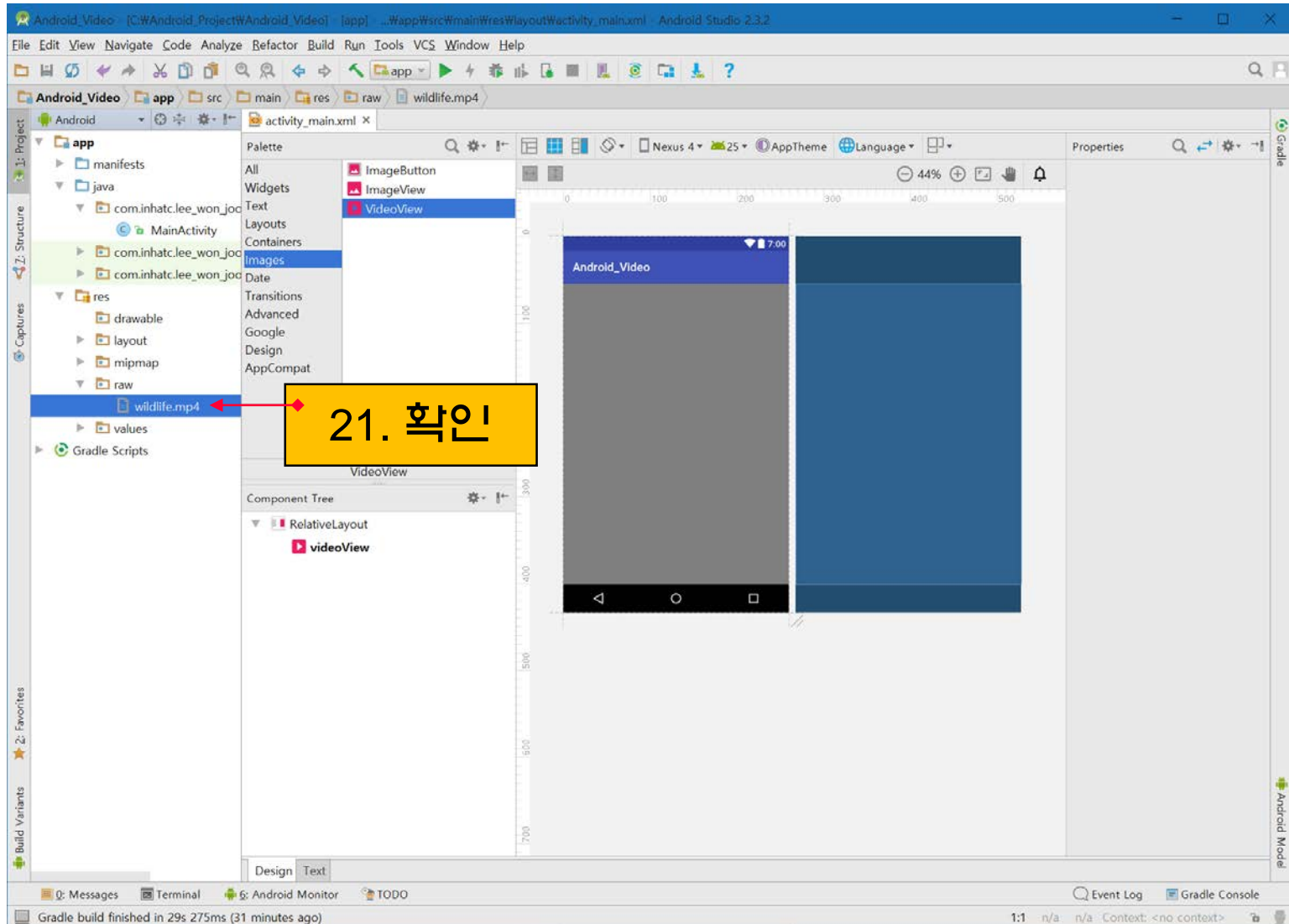
19. Click

20. Click



Android Video 재생 구현 (13)

❖ MP4 파일 import 결과 확인





Android Video 재생 구현 (14)

MainActivity.java

```
MainActivity.java x
1 package com.inhatc.lee_won_joo.android_video;
2
3 import android.net.Uri;
4 import android.support.v7.app.AppCompatActivity;
5 import android.os.Bundle;
6 import android.widget.MediaController;
7 import android.widget.VideoView;
8
9 public class MainActivity extends AppCompatActivity {
10
11     VideoView objVideo;           //VideoView object
12     MediaController mediaCTRL;    //MediaController object
13 }
```

22. Coding



Android Video 재생 구현 (15)

```
MainActivity.java x
14  @Override
15  protected void onCreate(Bundle savedInstanceState) {
16      super.onCreate(savedInstanceState);
17      setContentView(R.layout.activity_main);
18
19      objVideo = (VideoView) findViewById(R.id.videoView);
20      mediaCTRL = new MediaController(this);
21
22      //Connect VideoView
23      mediaCTRL.setAnchorView(objVideo);
24
25      // Load and start the video
26      Uri videoUri = Uri.parse("android.resource://" +
27                               |                               getPackageName() + "/raw/wildlife");
28
29      //Usage VideoView controller as MediaController
30      objVideo.setMediaController(mediaCTRL);
31      objVideo.setVideoURI(videoUri); //Connect Video URL to be play
32      objVideo.requestFocus();        //Set VideoView focus
33      objVideo.start();                //Play *.mp4
34  }
35  }
36
```



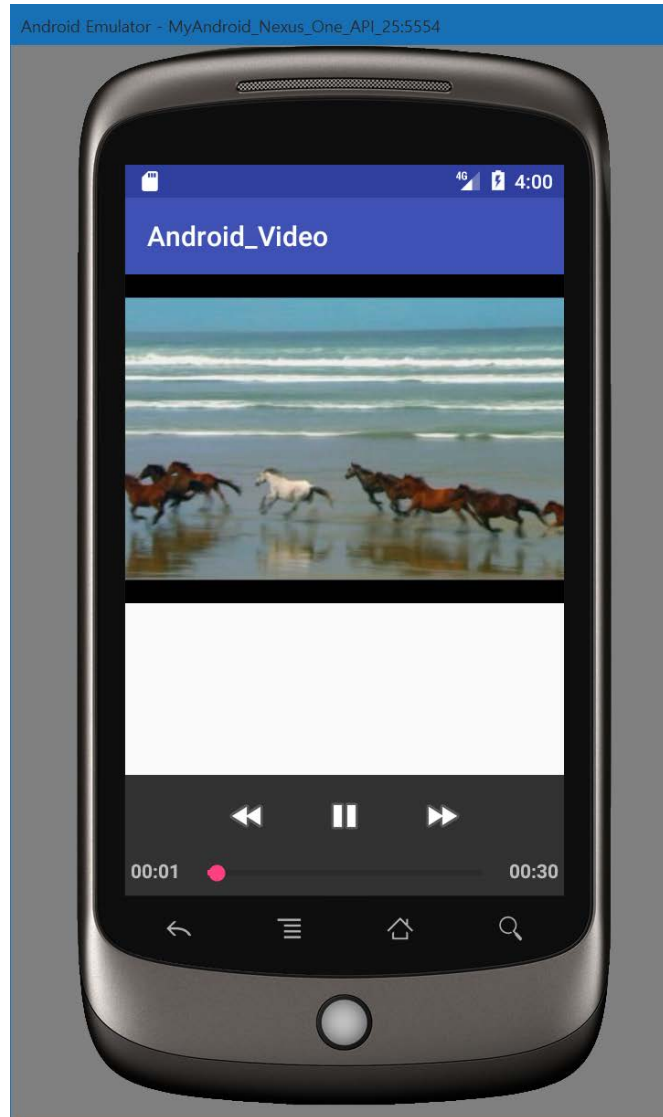
Android Video 재생 구현 (16)

❖ Android 프로젝트 실행

The screenshot shows the Android Studio interface. The **Run** menu is open, and the **Run 'app'** option is highlighted. A yellow box labeled **24. Click** points to this option. Below the menu, the **Select Deployment Target** dialog is open. In the **Available Virtual Devices** section, **MyAndroid_Nexus One API 25** is selected. A yellow box labeled **25. Click** points to this device. At the bottom of the dialog, the **OK** button is highlighted, with a yellow box labeled **26. Click** pointing to it. The background shows the project structure of **Android_Video** and the **MainActivity.java** file.

Android Video 재생 구현 (17)

❖ 실행 결과





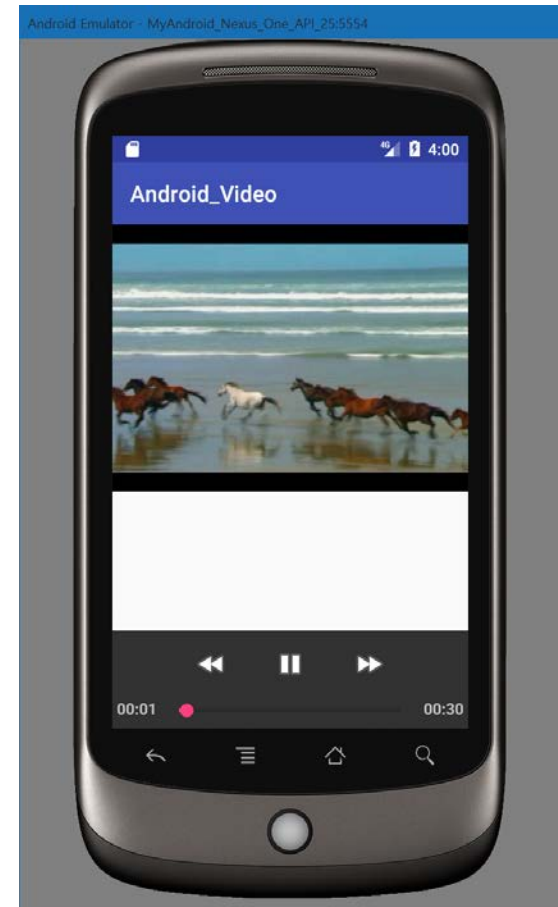
실습 I : SD card Video 재생 구현

■ Android_Video2 (실습 시간 : 30분)

❖ SD card에 있는 Video를 재생하도록 구현하시오.

◆ Project Name : Android_Video2

◆ SD card: wildlife.mp4

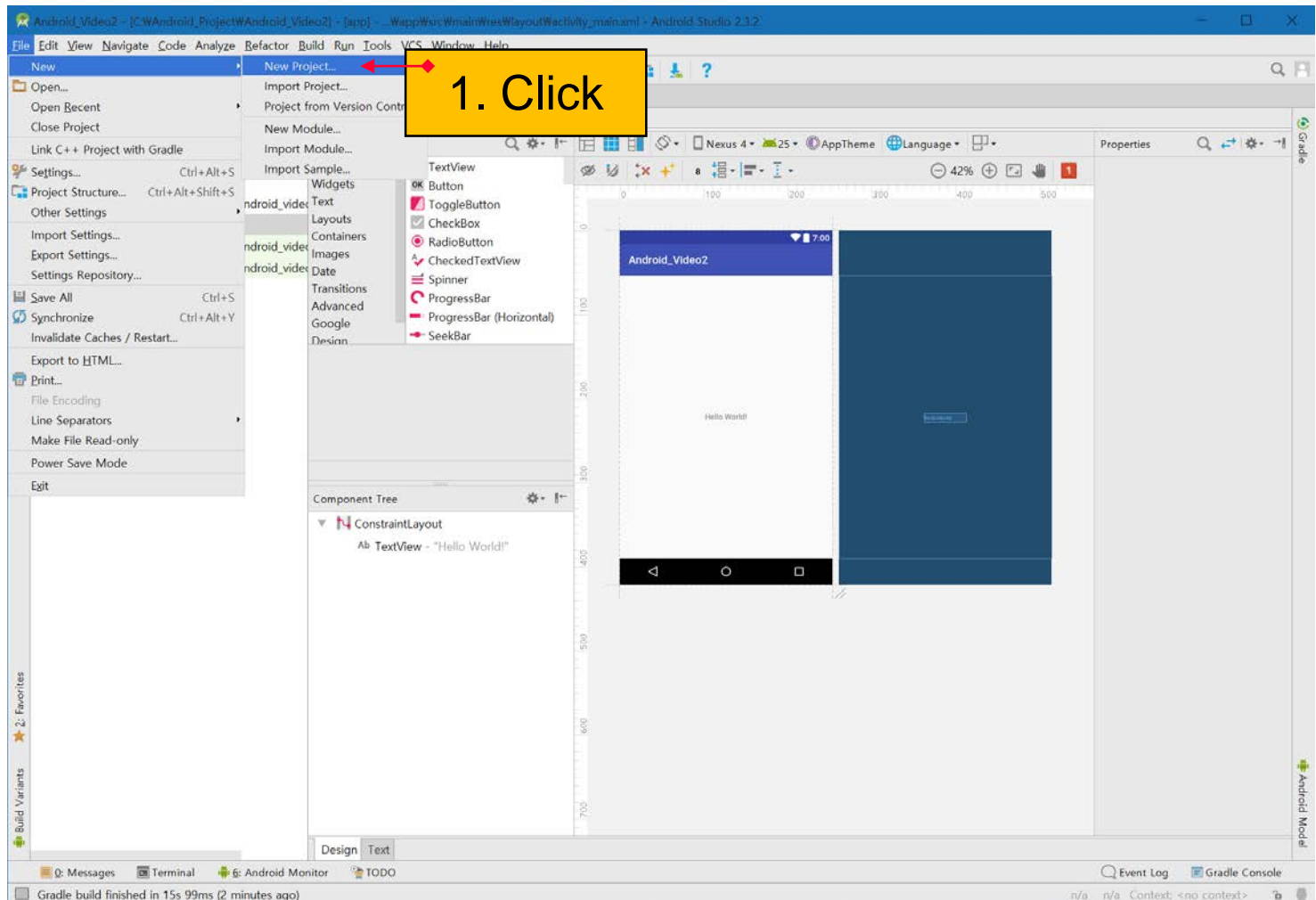




실습 I : SD card Video 재생 구현 (1)

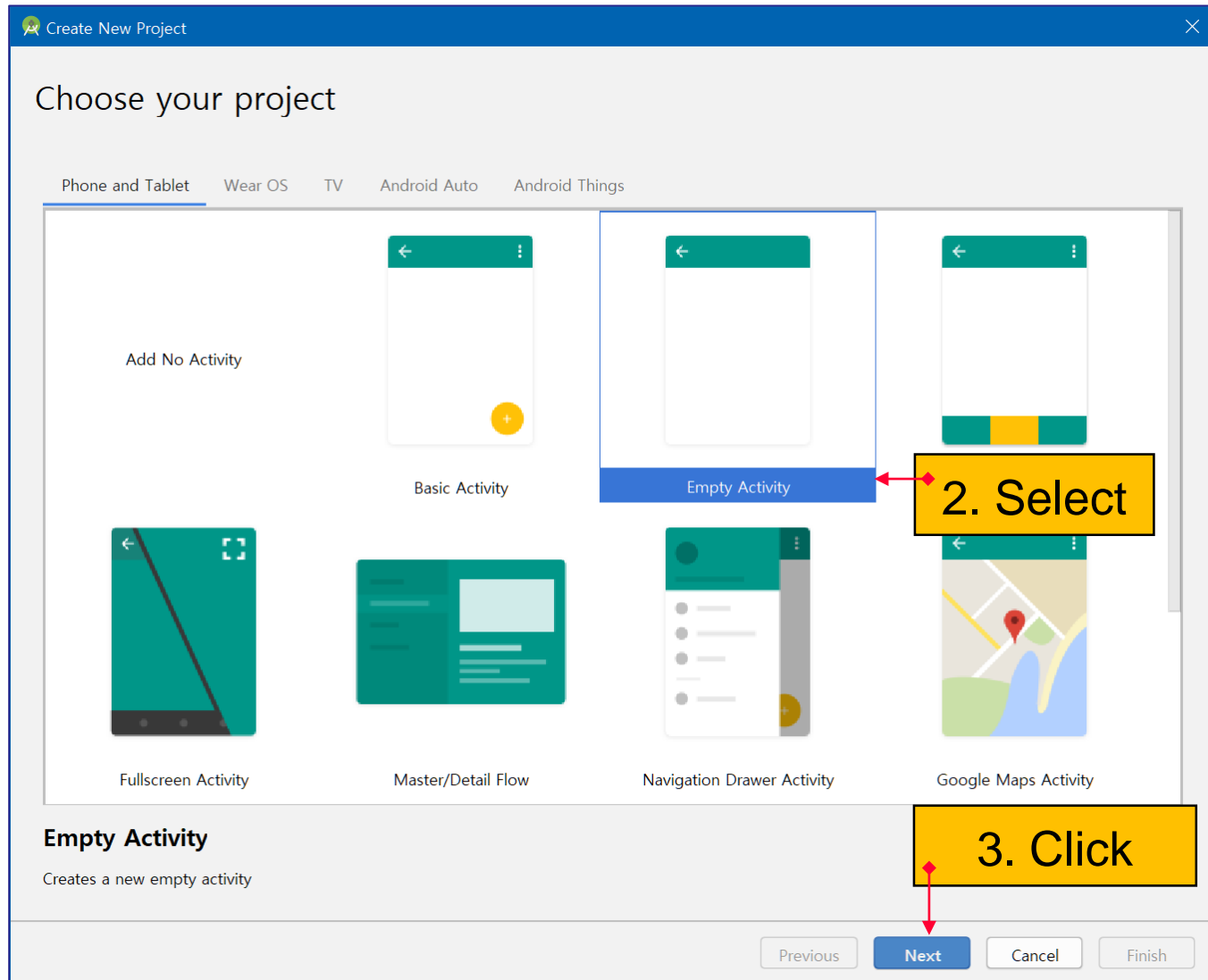
■ Android 프로젝트 생성

❖ 프로젝트 명 : Android_Video2





실습 I : SD card Video 재생 구현 (2)





실습 I : SD card Video 재생 구현 (3)

Create New Project

Configure your project

Name
Android_Video2

Package name
com.inhatc.android_video2

Save location
C:\Android_Project\Android_Video2

Language
Java

Minimum API level
API 26: Android 8.0 (Oreo)

☐ Your app will run on approximately 6.0% of devices.
[Help me choose](#)

☐ This project will support instant apps

☐ Use AndroidX artifacts

Empty Activity

Creates a new empty activity

Previous Next Cancel Finish

4. Input "Android_Video2"

5. Input "com.inhatc.android_video2"

6. Select

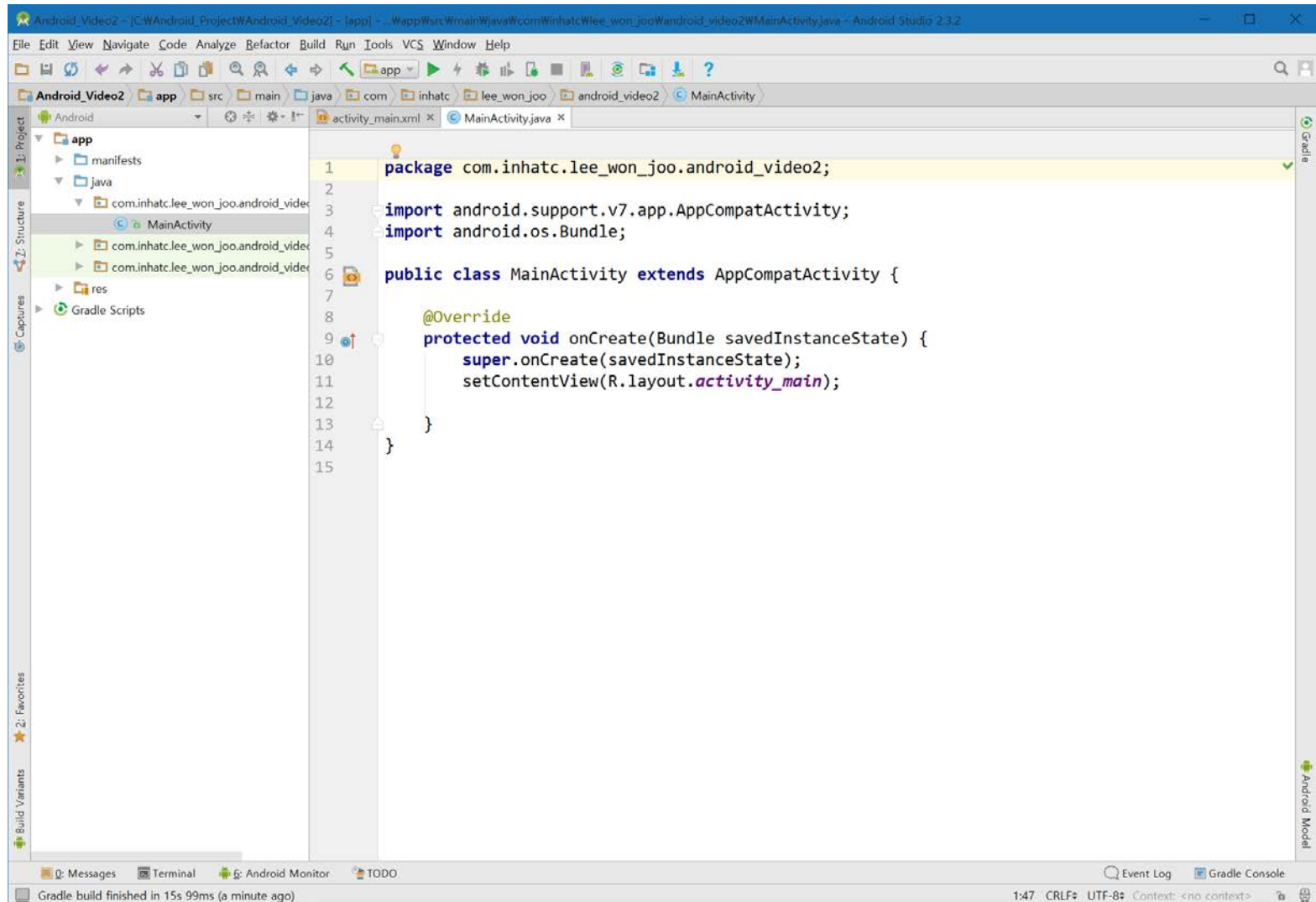
7. Select

8. Click



실습 I : SD card Video 재생 구현 (4)

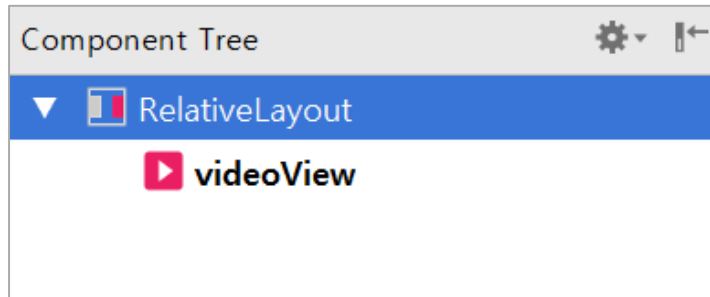
❖ Android 프로젝트 생성 완료





실습 I : SD card Video 재생 구현 (5)

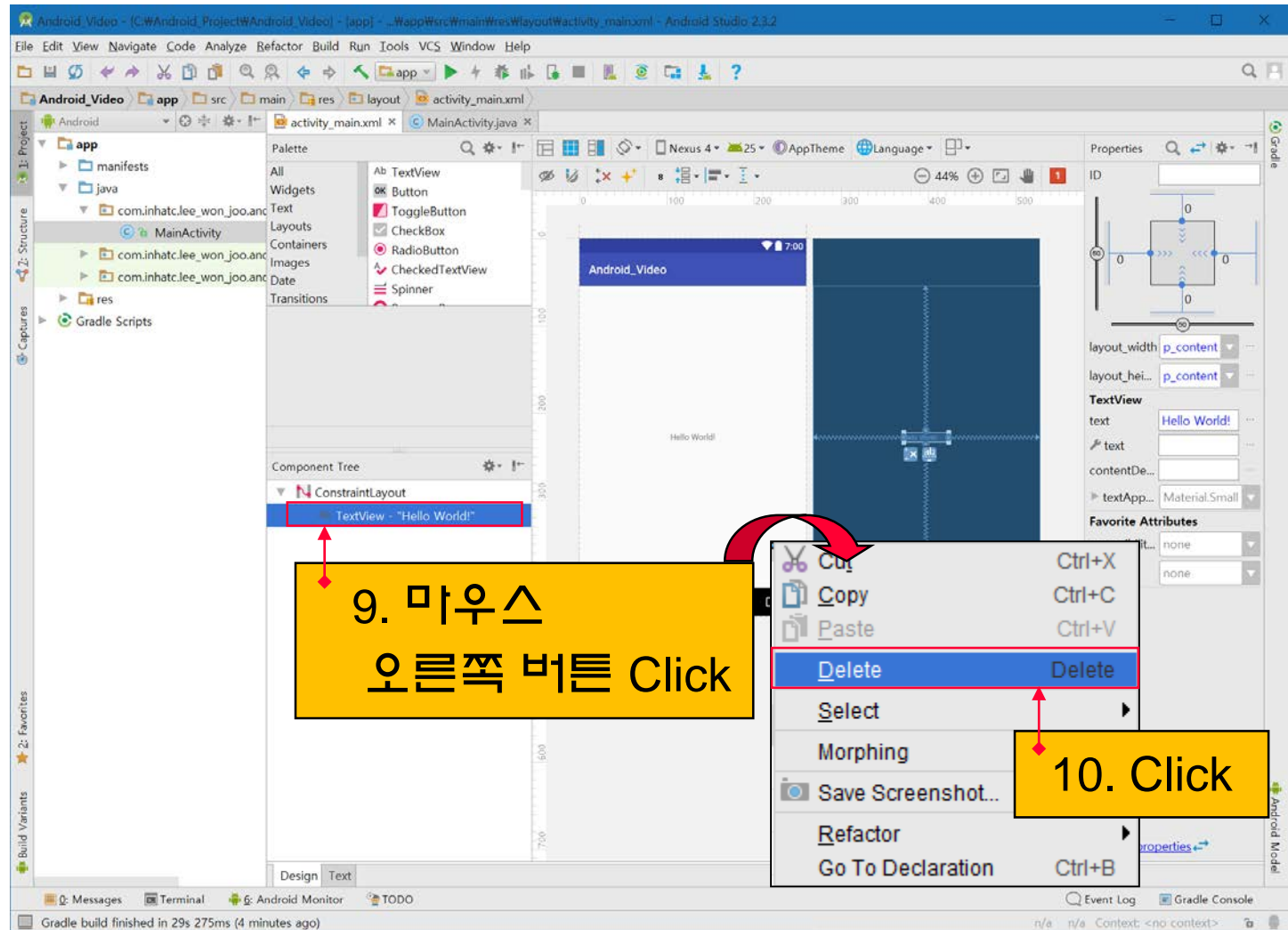
■ UI 설계





실습 I : SD card Video 재생 구현 (6)

❖ TextView 삭제





실습 I : SD card Video 재생 구현 (7)

❖ Activity_main.xml 속성 지정

| 컨트롤 | 속성 지정 |
|-----------|--|
| VideoView | <ul style="list-style-type: none">• android:id="@+id/videoView"• android:layout_width="match_parent"• android:layout_height="wrap_content"• android:layout_gravity="center" |

```
activity_main.xml x
1  <?xml version="1.0" encoding="utf-8"?>
2  <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      xmlns:app="http://schemas.android.com/apk/res-auto"
4      xmlns:tools="http://schemas.android.com/tools"
5      android:layout_width="match_parent"
6      android:layout_height="match_parent"
7      tools:context="com.inhatc.lee_won_joo.android_video.MainActivity">
8
9      <VideoView
10         android:id="@+id/videoView"
11         android:layout_width="match_parent"
12         android:layout_height="wrap_content"
13         android:layout_gravity="center"/>
14  </RelativeLayout>
15
```



실습 I : SD card Video 재생 구현 (8)

MainActivity.java

```
MainActivity.java x
1  package com.inhatc.lee_won_joo.android_video2;
2
3  import android.support.v7.app.AppCompatActivity;
4  import android.os.Bundle;
5  import android.widget.VideoView;
6
7  public class MainActivity extends AppCompatActivity {
8
9      VideoView objVideo;           //VideoView object
10     String strVideoPath = "/sdcard/wildlife.mp4"; //String object
11
12     @Override
13     protected void onCreate(Bundle savedInstanceState) {
14         super.onCreate(savedInstanceState);
15         setContentView(R.layout.activity_main);
16
17         objVideo = (VideoView) findViewById(R.id.videoView);
18
19         // Load and start the video
20         objVideo.setVideoPath(strVideoPath);
21         objVideo.start();
22     }
23 }
24 }
```

11. Coding



실습 I : SD card Video 재생 구현 (9)

❖ Android 프로젝트 실행

The screenshot shows the Android Studio interface with the 'Run' menu open. A yellow box labeled '12. Click' points to the 'Run' button in the menu. The 'Select Deployment Target' dialog is also open, showing 'Available Virtual Devices'. A yellow box labeled '13. Click' points to 'MyAndroid_Nexus One API 25'. Another yellow box labeled '14. Click' points to the 'OK' button in the dialog.

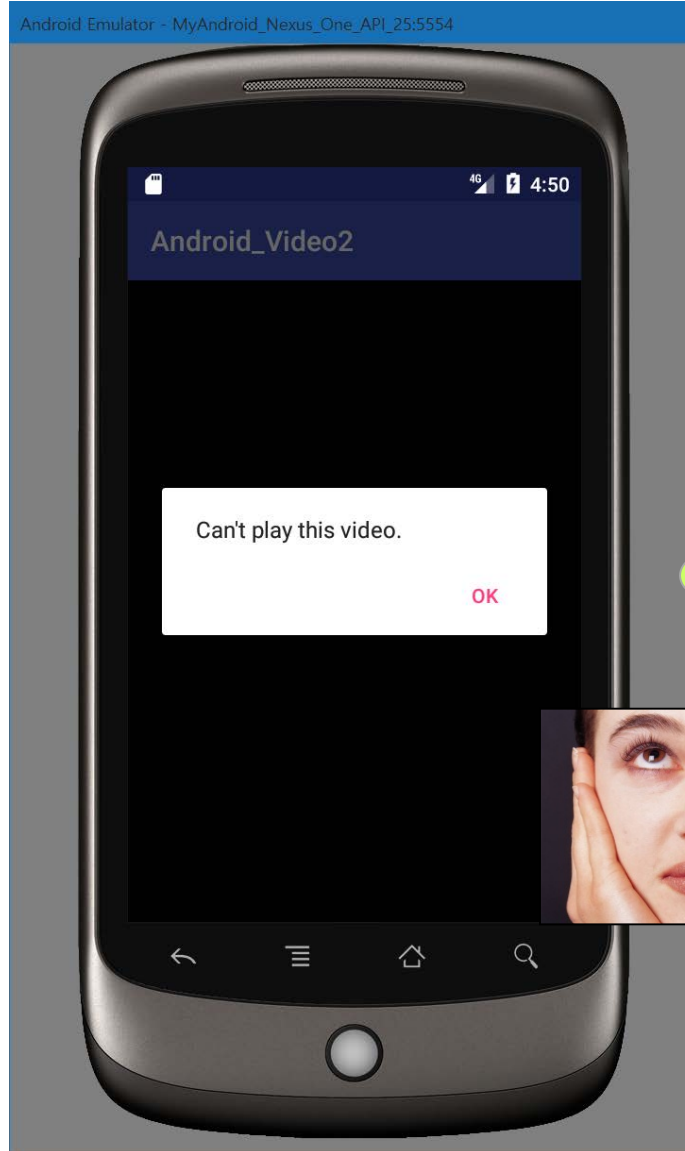
12. Click

13. Click

14. Click

실습 I : SD card Video 재생 구현 (10)

❖ 실행 결과



Why not ?





실습 I : SD card Video 재생 구현 (11)

■ AndroidManifest.xml

❖ uses-permission 추가

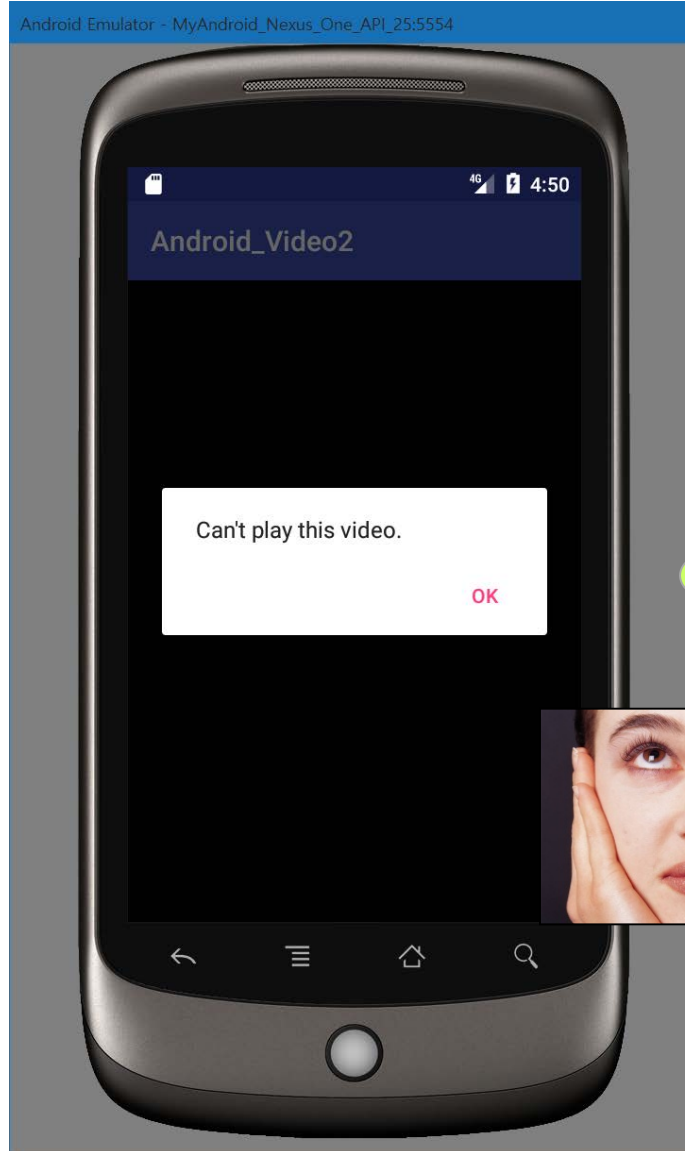
```
AndroidManifest.xml x
1  <?xml version="1.0" encoding="utf-8"?>
2  <manifest xmlns:android="http://schemas.android.com/apk/res/android"
3    package="com.inhatec.lee_won_joo.android_videoplayer">
4
5    <uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>
6
7    <application
8        android:allowBackup="true"
9        android:icon="@mipmap/ic_launcher"
10       android:label="@string/app_name"
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>
24
```

15. xml coding



실습 I : SD card Video 재생 구현 (12)

❖ 실행 결과



Why not ?

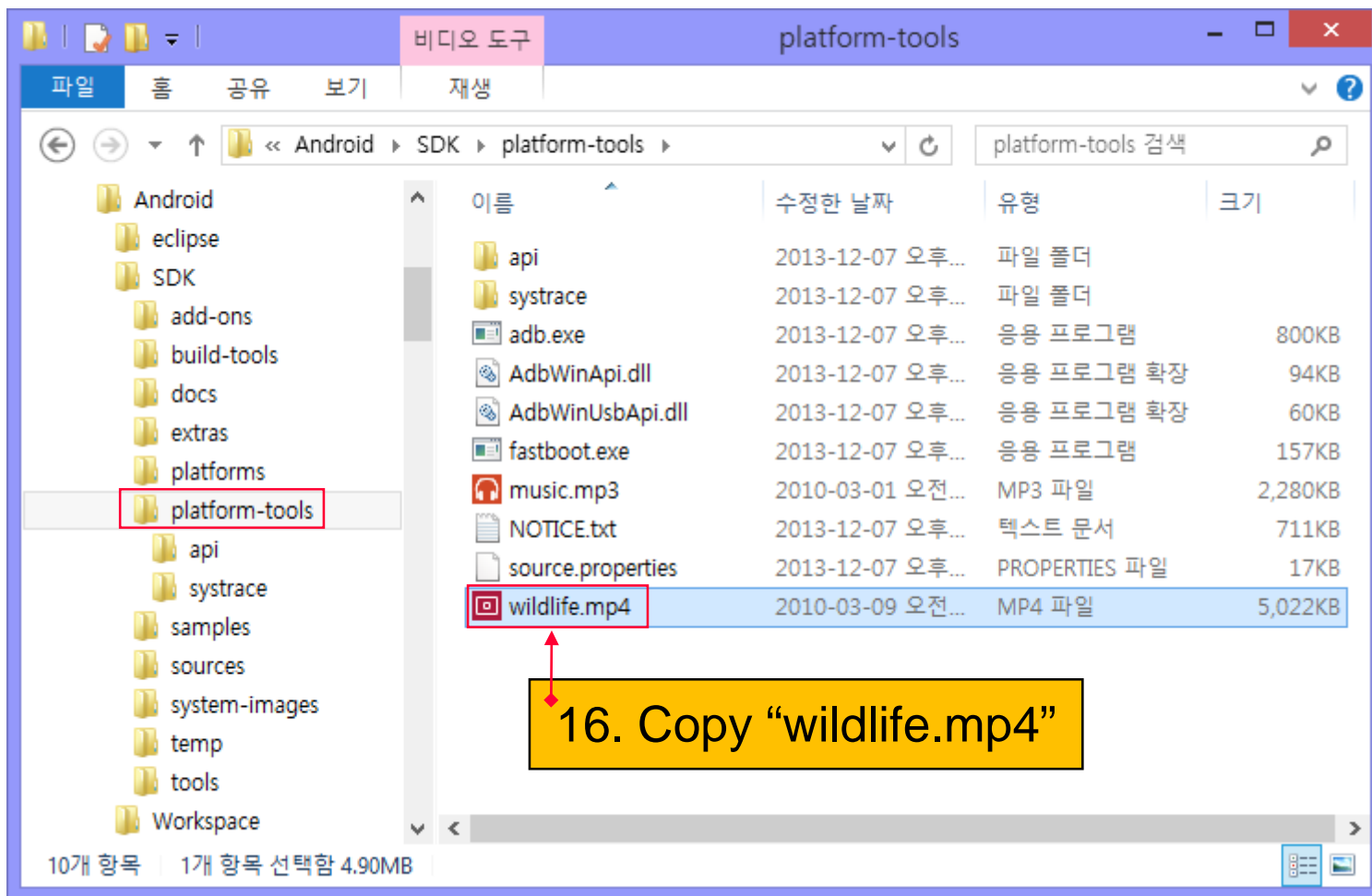




실습 I : SD card Video 재생 구현 (13)

■ Video 파일 SD card에 복사

❖ wildlife.mp4 → C:\Android\SDK\platform-tools





실습 I : SD card Video 재생 구현 (14)

■ Command Prompt 실행

❖ C:\Android\SDK\platform-tools

```
명령 프롬프트
Microsoft Windows [Version 10.0.10240.17134]
(c) 2015 Microsoft Corporation. All rights reserved.

C:\Users\Lee_Won_Joo>cd C:\Users\Lee_Won_Joo\AppData\Local\Android\sdk\platform-tools

C:\Users\Lee_Won_Joo\AppData\Local\Android\sdk\platform-tools>dir
C 드라이브의 볼륨: Windows_10
볼륨 일련 번호: A8D7-8401

C:\Users\Lee_Won_Joo\AppData\Local\Android\sdk\platform-tools 디렉터리

2017-05-17 오후 01:56 <DIR> .
2017-05-17 오후 01:56 <DIR> ..
2017-05-01 오전 12:00      1,542,656 adb.exe
2017-05-01 오전 12:00       97,792 AdbWinApi.dll
2017-05-01 오전 12:00       62,976 AdbWinUsbApi.dll
2017-05-01 오전 12:00 <DIR> api
2017-05-01 오전 12:00     145,408 dmtracedump.exe
2017-05-01 오전 12:00     328,704 etc1tool.exe
2017-05-01 오전 12:00     812,032 fastboot.exe
2017-05-01 오전 12:00       41,984 hprof-conv.exe
2017-05-01 오전 12:00 <DIR> lib64
2017-05-01 오전 12:00     141,538 libwinpthread-1.dll
2010-03-01 오전 10:56     2,334,268 music.mp3
2017-05-01 오전 12:00       17,443 package.xml
2017-05-01 오전 12:00         39 source.properties
2017-05-01 오전 12:00       761,344 sqlite3.exe
2017-05-01 오전 12:00 <DIR> systrace
2010-03-09 오전 12:51     5,141,618 wildlife.mp4
13개 파일      11,427,802 바이트
5개 디렉터리   85,337,538,560 바이트 남음

C:\Users\Lee_Won_Joo\AppData\Local\Android\sdk\platform-tools>
```

17. 폴더 이동 : cd c:\Android\sdk\platform-tools

18. Input "dir"

19. Confirm "wildlife.mp4" file





실습 I : SD card Video 재생 구현 (15)

■ wildlife.mp4 → SD card

❖ adb.exe 명령어 사용

```
C:\Android\SDK\platform-tools> adb push wildlife.mp4 /sdcard/wildlife.mp4
```

```
명령 프롬프트 - adb shell
C:\Users\Lee_Won_Joo\AppData\Local\Android\SDK\platform-tools>
C:\Users\Lee_Won_Joo\AppData\Local\Android\SDK\platform-tools>
C:\Users\Lee_Won_Joo\AppData\Local\Android\SDK\platform-tools> adb push wildlife.mp4 /sdcard/wildlife.mp4
wildlife.mp4: 1 file pushed. 71.3 MB/s (5141618 bytes in 0.069s)

C:\Users\Lee_Won_Joo\AppData\Local\Android\SDK\platform-tools> adb shell
generic_x86:/ $
generic_x86:/ $
generic_x86:/ $ su
generic_x86:/ #
generic_x86:/ # ls
acct      default.prop
bugreports dev
cache     etc
charger   file_contexts.bin
config    fstab.goldfish
d          fstab.ranchu
data       init
generic_x86:/ #
```

20. Copy "wildlife.mp4" file to SD card

21. adb shell 입력

22. su 실행(admin 권한 획득)

23. ls 입력

| | | |
|-------------------|------------------|---------------------|
| mnt | seapp_contexts | ueventd.goldfish.rc |
| oem | selinux_version | ueventd.ranchu.rc |
| proc | sepolicy | ueventd.rc |
| property_contexts | service_contexts | vendor |
| root | storage | |
| sbin | sys | |
| sdcard | system | |



실습 I : SD card Video 재생 구현 (16)

❖ /sdcard/wildlife.mp4 저장 확인

```
명령 프롬프트 - adb shell
generic_x86:/ #
generic_x86:/ # ls
acct          default.prop    init.environ.rc  mnt            seapp_contexts  ueventd.goldfish.rc
bugreports    dev             init.goldfish.rc  oem            selinux_version ueventd.ranchu.rc
cache         etc             init.ranchu.rc    proc           sepolicy         ueventd.rc
charger       file_contexts.bin init.rc           property_contexts service_contexts vendor
config        file_contexts  init.rc           root           storage
d             file_contexts  init.rc           root           storage
data          file_contexts  init.rc           root           storage
generic_x86:/ # cd sdcard
generic_x86:/sdcard #
generic_x86:/sdcard # ls
Alarms Android DCIM Download Movies Music Notifications Pictures Podcasts Ringtones music.mp3 wildlife.mp4
generic_x86:/sdcard #
```

24. Input "cd sdcard"

25. Input "ls"

26. wildlife.mp4 파일 저장 확인





실습 I : SD card Video 재생 구현 (17)

❖ Android 프로젝트 실행

The screenshot shows the Android Studio interface with the 'Run' menu open. A yellow box labeled '27. Click' points to the 'Run' button in the menu. The 'Select Deployment Target' dialog is also open, showing 'Connected Devices' and 'Available Virtual Devices'. A yellow box labeled '28. Click' points to 'MyAndroid_Nexus One API 25' in the 'Available Virtual Devices' list. Another yellow box labeled '29. Click' points to the 'OK' button at the bottom of the dialog.

27. Click

28. Click

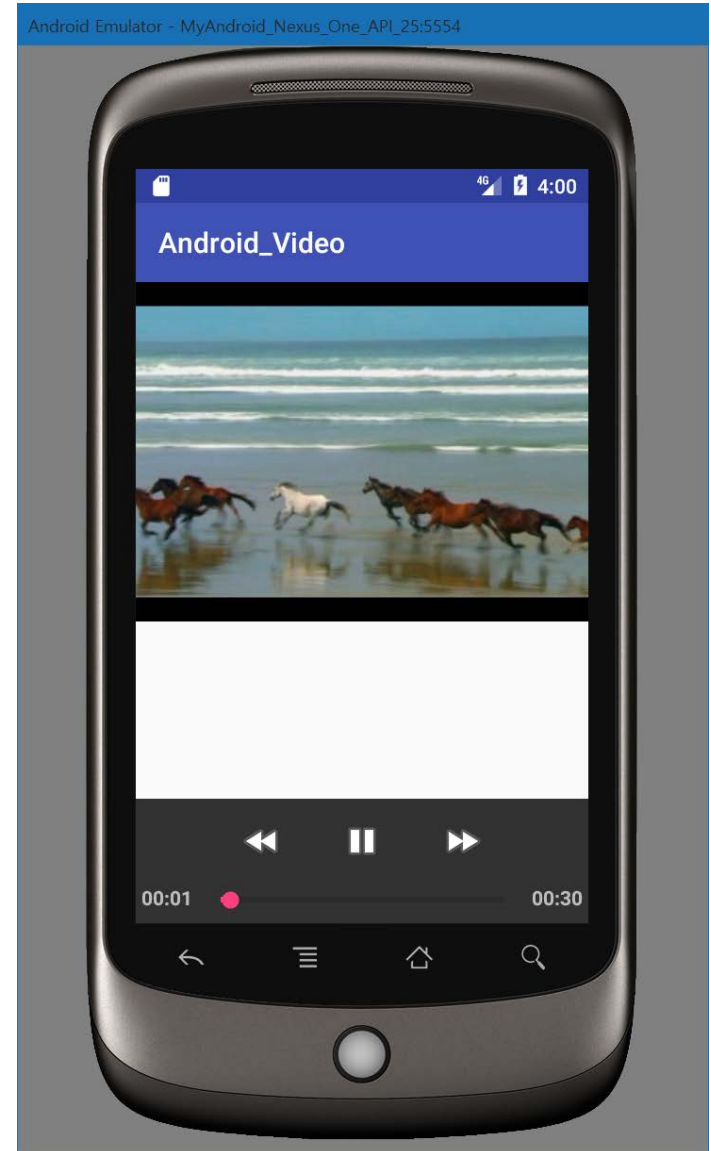
29. Click



실습 I : SD card Video 재생 구현 (18)

■ 실행 결과

❖ API 19: Android 4.4 (KitKat)



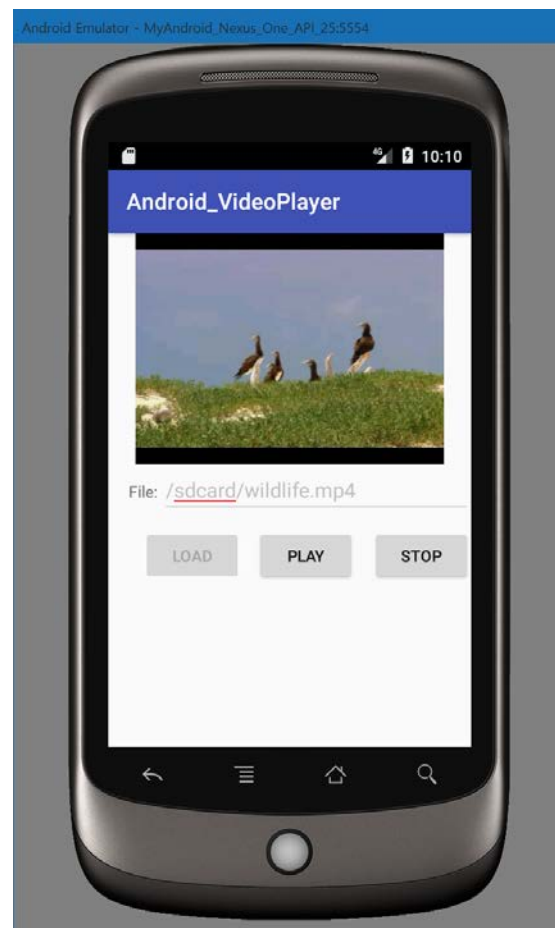


실습 II : Android Video Player 구현

■ Android_VideoPlayer (실습 시간 : 30분)

❖ 아래 그림과 같이 VideoPlayer를 구현하시오.

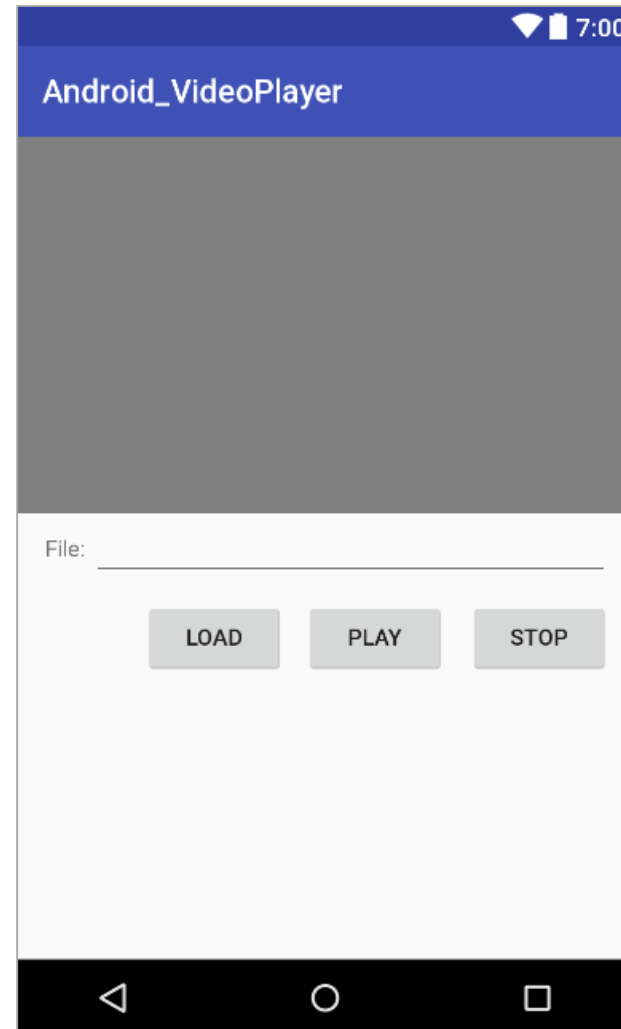
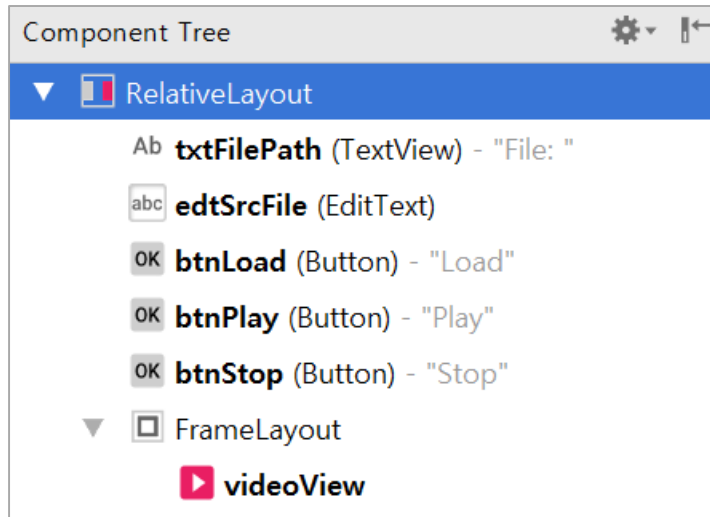
◆ Project Name : Android_VideoPlayer





실습 II : Android Video Player 구현

■ UI 설계





학습 요약

■ Android Video

■ Android Video 재생 구현

❖ 실습 I : SD card Video 재생 구현

❖ 실습 II : Android Video Player 구현



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