

Android AAR

작성자 : 김은규

AAR 이란?

- /AndroidManifest.xml (필수)
- /classes.jar (필수)
- /res/ (필수)
- /R.txt (필수)
- /assets/ (선택)
- /libs/*.jar (선택)
- /jni/<abi>/*.so (선택)
- /proguard.txt (선택)
- /lint.jar (선택)

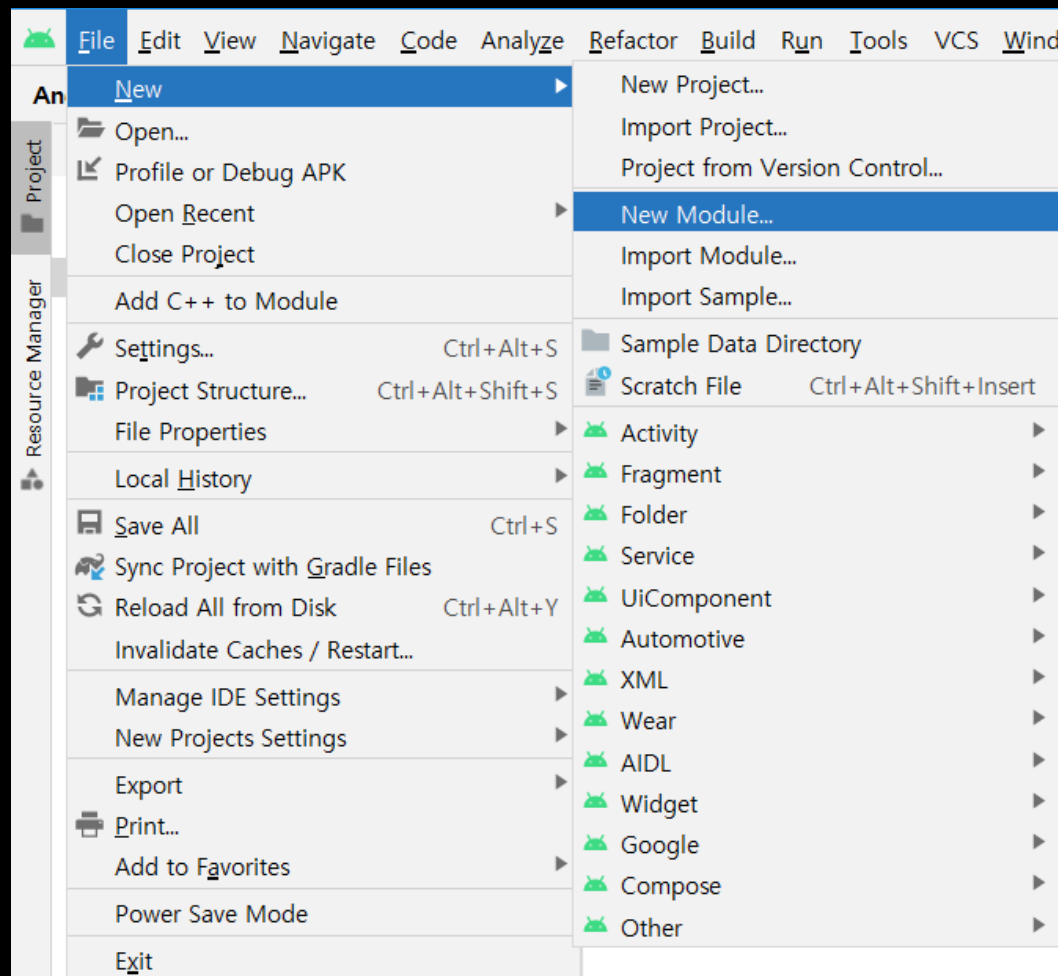
- Android Archive Package의 약자로 안드로이드 Library 용 압축 형태의 파일입니다.
- AAR 내부에는 Java에서 Library용으로 자주 사용되는 JAR(Java Archive files)이 필수적으로 들어 갑니다.
- AAR 구성은 왼쪽과 같습니다.

Unity에서 Android Method 호출



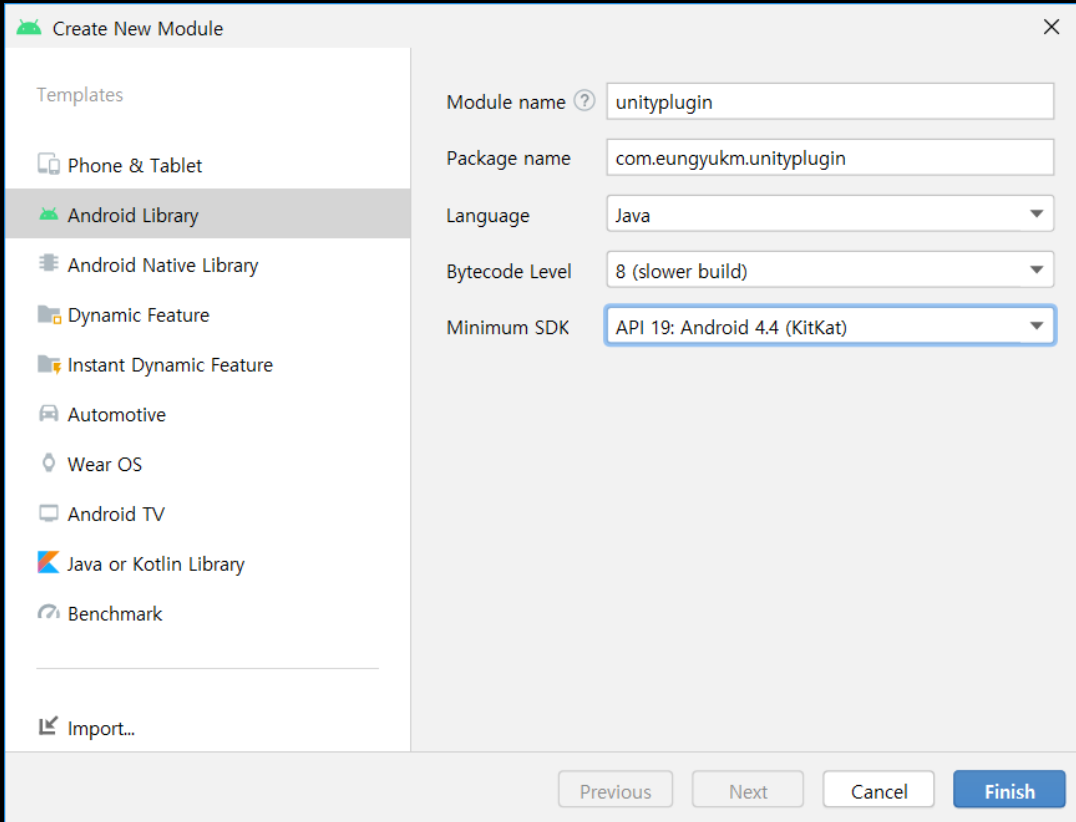
- Unity Project에 AAR형태로 Plugin을 생성하여 넣으면 Unity Script에서 JavaObject 및 JavaClass를 호출 가능합니다.

Android Library 추가(1)



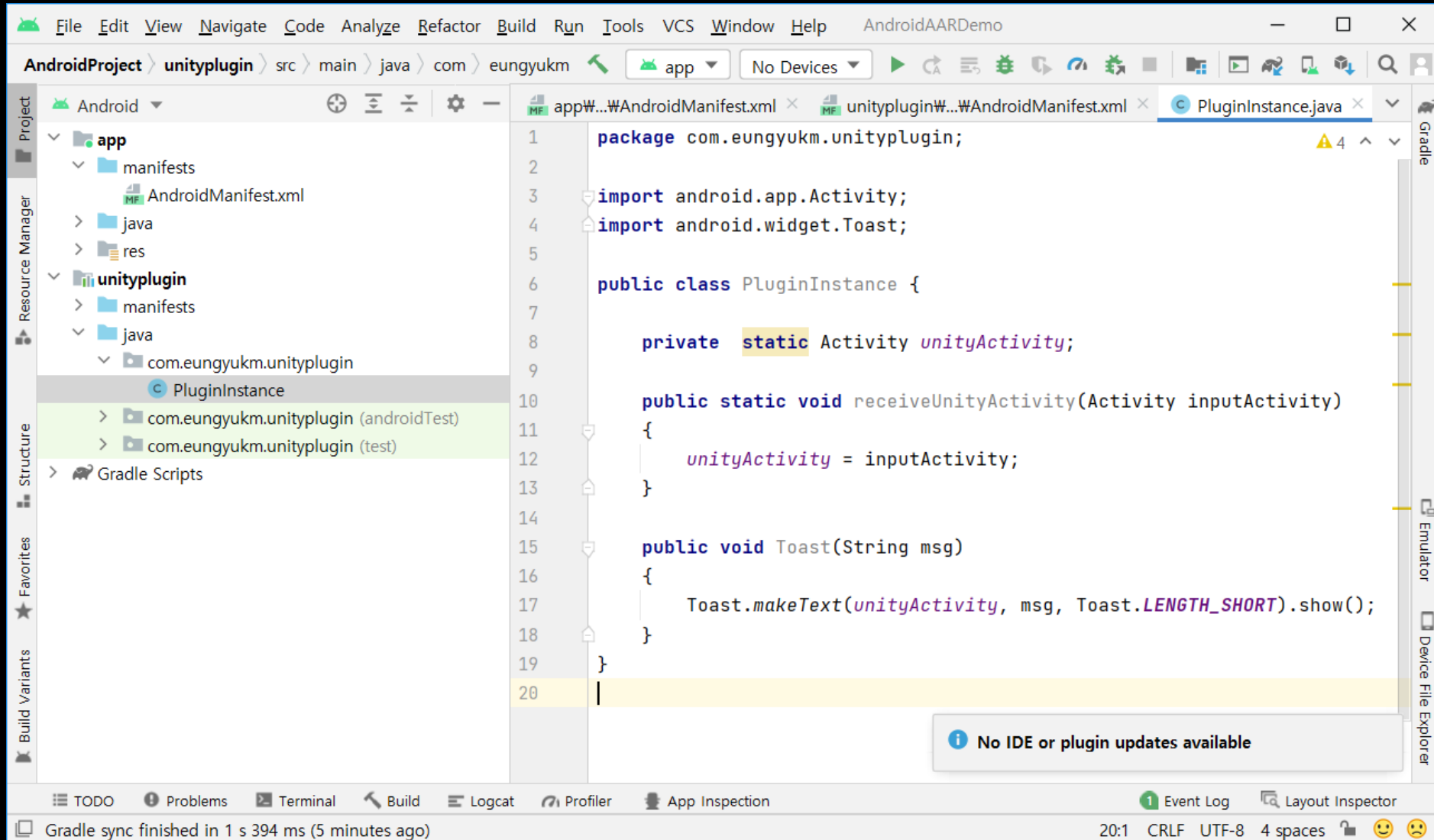
- File > New > New Module을 클릭합니다.

Android Library 추가(2)



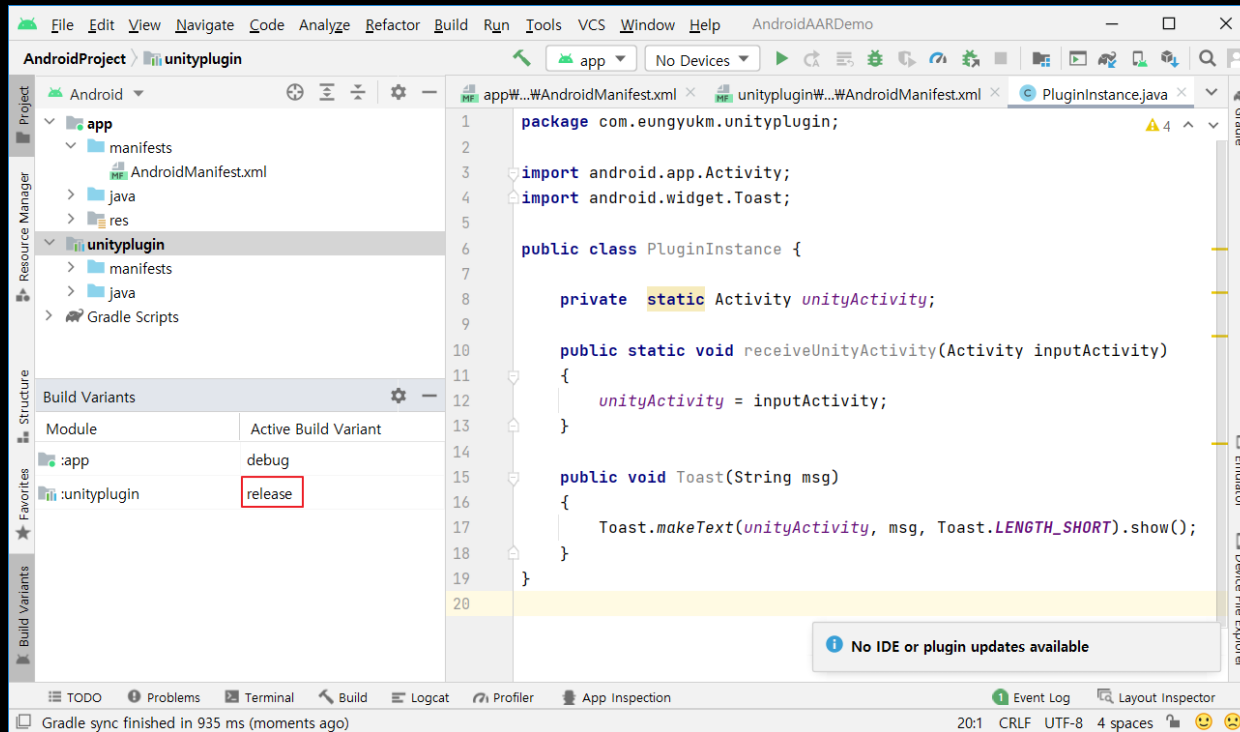
- Android Libaray를 선택합니다.
- Module name을 설정합니다.
- Minimum SDK를 설정합니다. (Unity 최소 API 19)

Android Toast message Code 추가



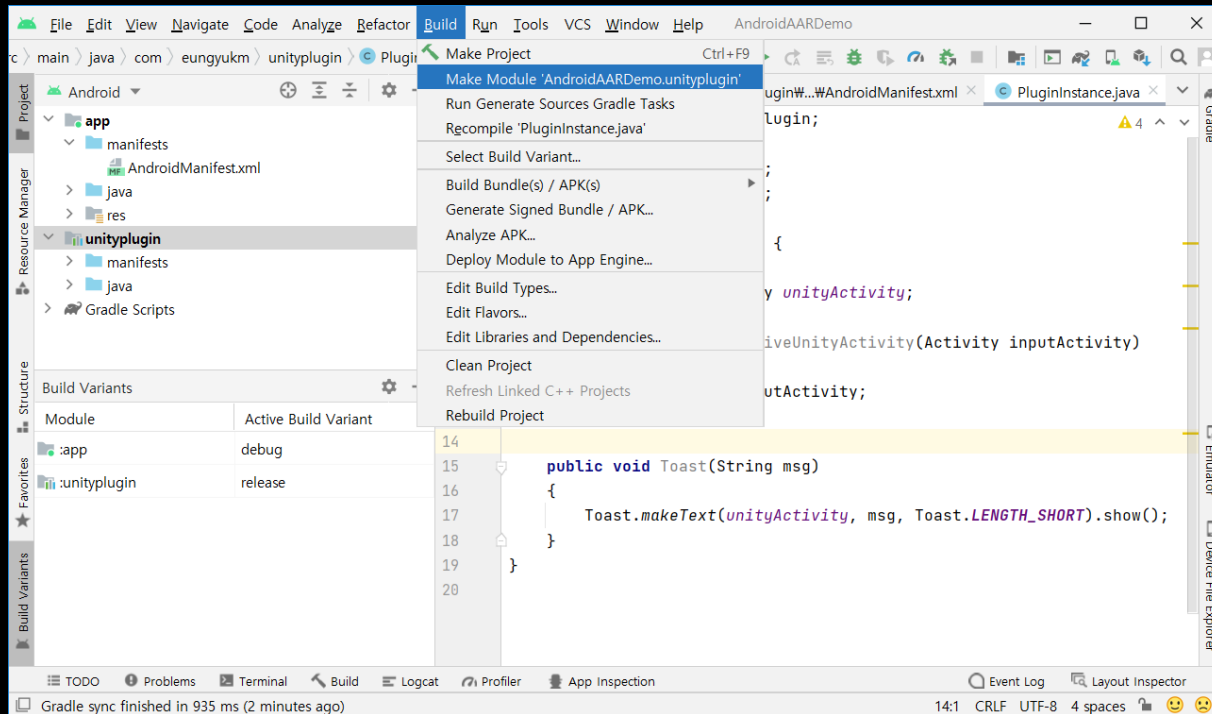
Android Build Variant 변경

- Build Variants를 release로 변경 합니다.



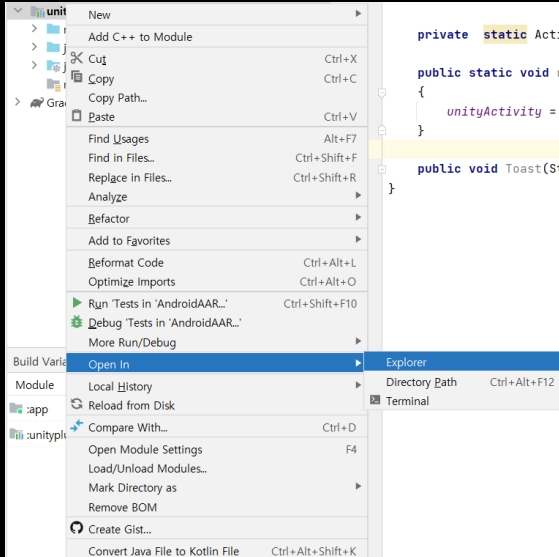
Android AAR Build(1)

- Build -> Make Module을 합니다.

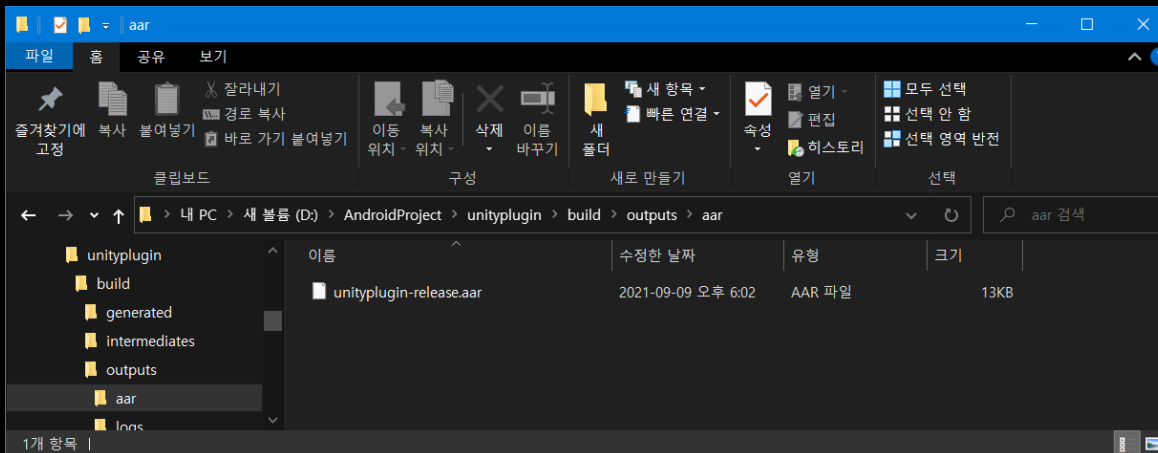


- AAR 파일 추출

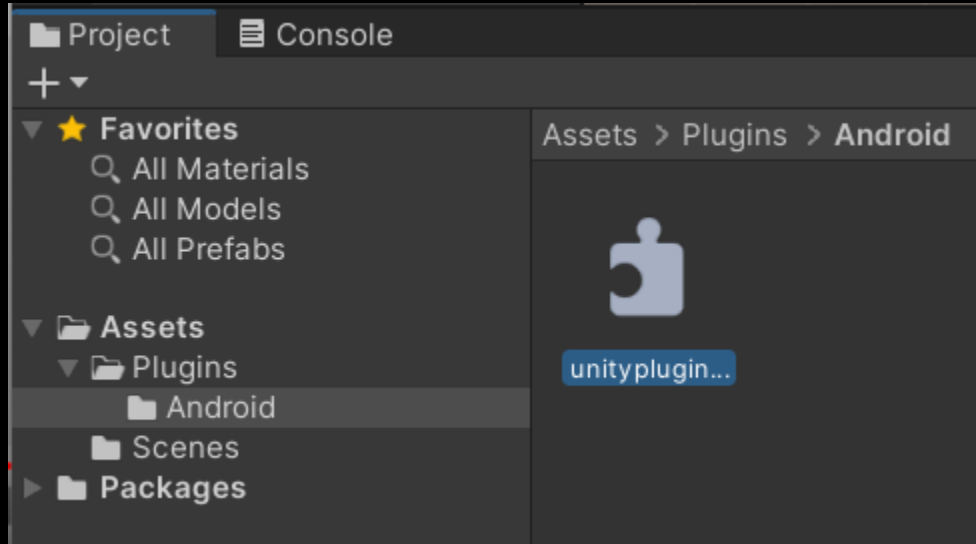
Android AAR Build(2)



- 추가한 Android Library에서 Open in-> Explorer로 AAR 파일 위치를 찾습니다.



Unity Plugin 추가



- Plugins/Android에 Build한 AAR을 추가합니다.

Unity Plugin 호출 코드

```
5  Unity 스크립트 | 참조 0개
6  public class PluginInit : MonoBehaviour
7  {
8      AndroidJavaClass unityClass;
9      AndroidJavaObject unityActivity;
10     AndroidJavaObject pluginInstance;
11
12     Unity 메시지 | 참조 0개
13     void Start()
14     {
15         InitializePlugin("com.eungyukm.unityplugin.PluginInstance");
16     }
17
18     참조 1개
19     private void InitializePlugin(string pluginName)
20     {
21         unityClass = new AndroidJavaClass("com.unity3d.player.UnityPlayer");
22         unityActivity = unityClass.GetStatic<AndroidJavaObject>("currentActivity");
23         pluginInstance = new AndroidJavaObject(pluginName);
24         if(pluginName == null)
25         {
26             Debug.Log("Plugin Instance Error");
27         }
28         pluginInstance.CallStatic("receiveUnityActivity", unityActivity);
29     }
30
31     참조 0개
32     public void TostMessage()
33     {
34         if(pluginInstance != null)
35         {
36             pluginInstance.Call("Toast", "Hello from Unity");
37         }
38     }
39 }
```

- AndroidJavaClass : java.lang.Class의 제네릭 인스턴스를 나타냅니다.
- <Public Functions>
- Call : 해당 객체의 자바 메소드를 호출 합니다.
- CallStatic : 클래스의 정적 자바 메소드를 호출 합니다.
- GetStatic : 오브젝트 타입 static 필드 값을 가져 옵니다.

Unity Plugin 결과



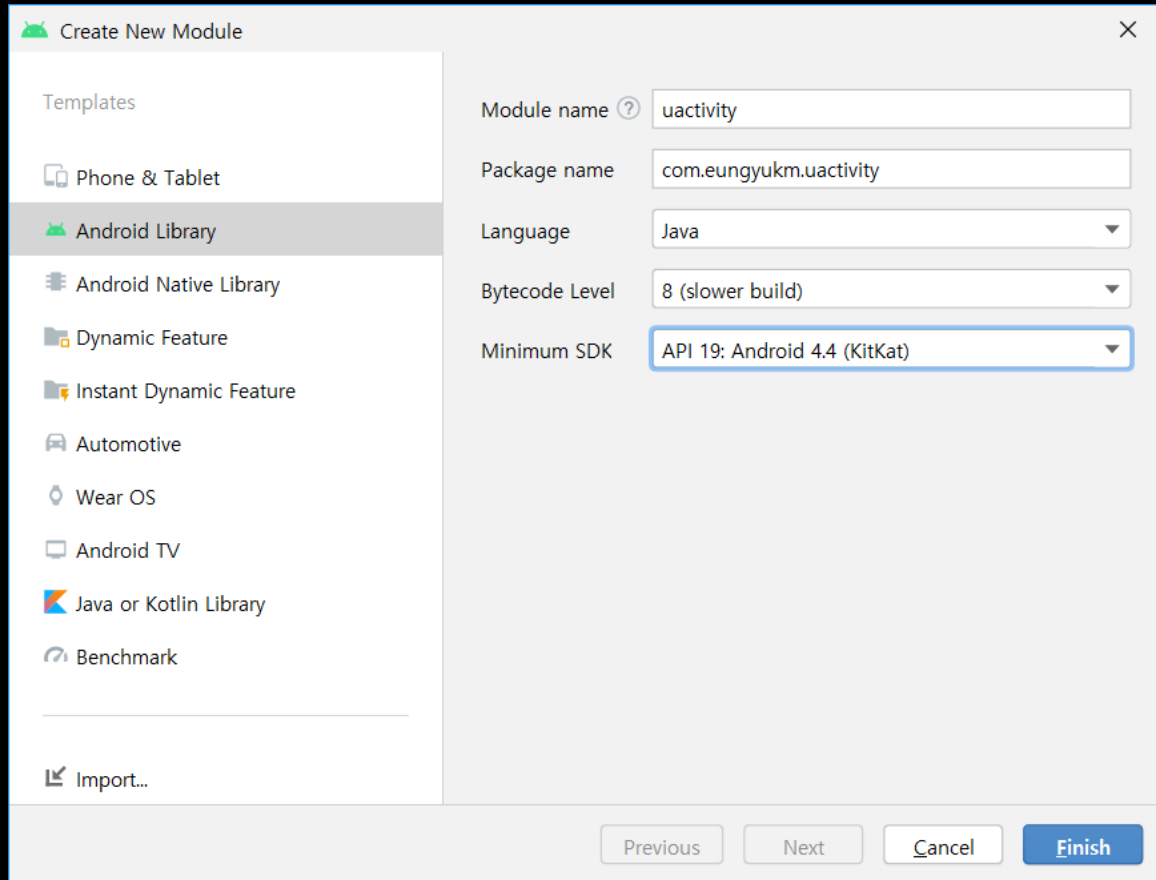
- Unity Plugin 결과

Unity에서 Android Method 호출



- Unity Project에 AAR형태로 Plugin을 생성하여 넣으면 Unity Script에서 JavaObject 및 JavaClass를 호출 가능합니다.
- 또한 Android에서 Unity 메서드 호출도 가능합니다.
- UnitySendMessage로 호출이 가능합니다.

Android Library 생성

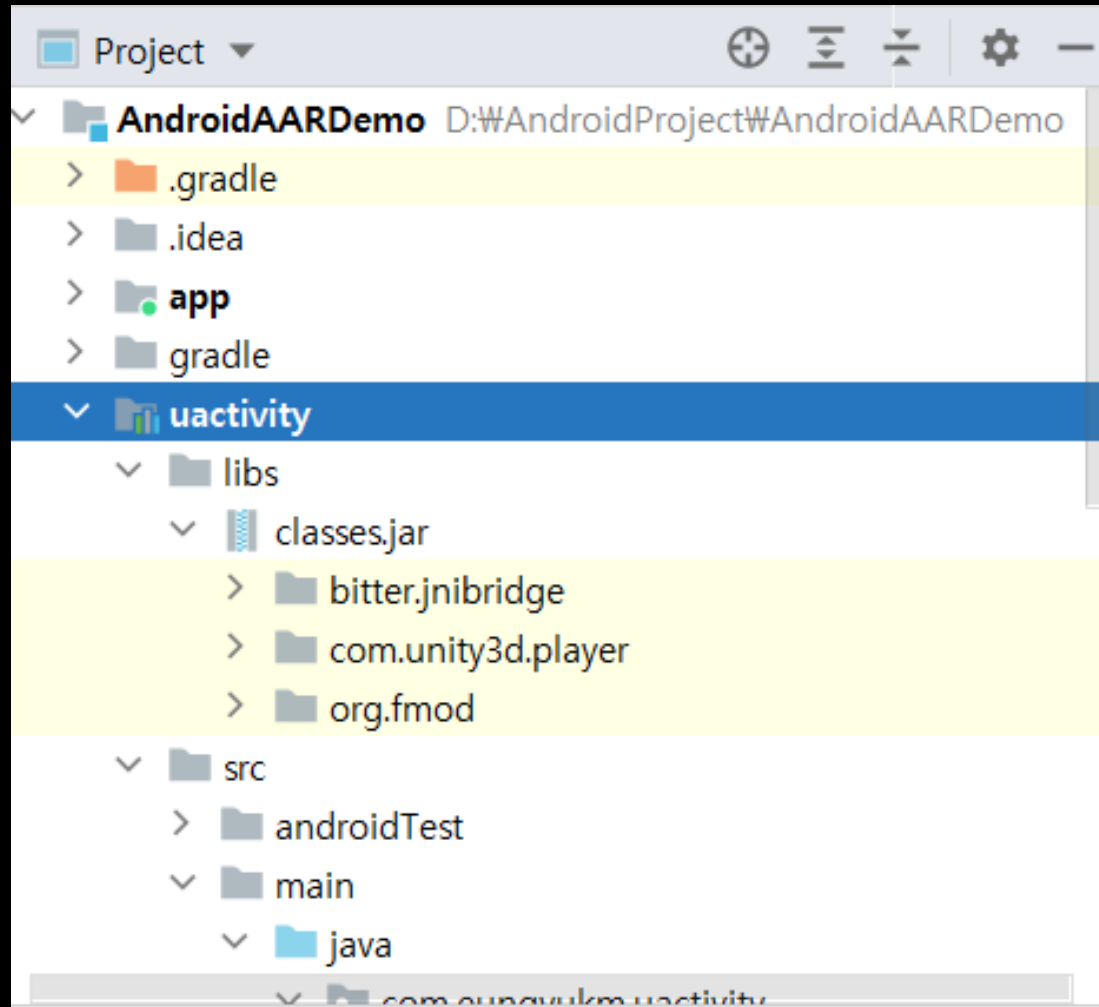


- Unity Project에 AAR형태로 Plugin을 생성하여 넣으면 Unity Script에서 JavaObject 및 JavaClass를 호출 가능합니다.

Unity classes.jar 추가

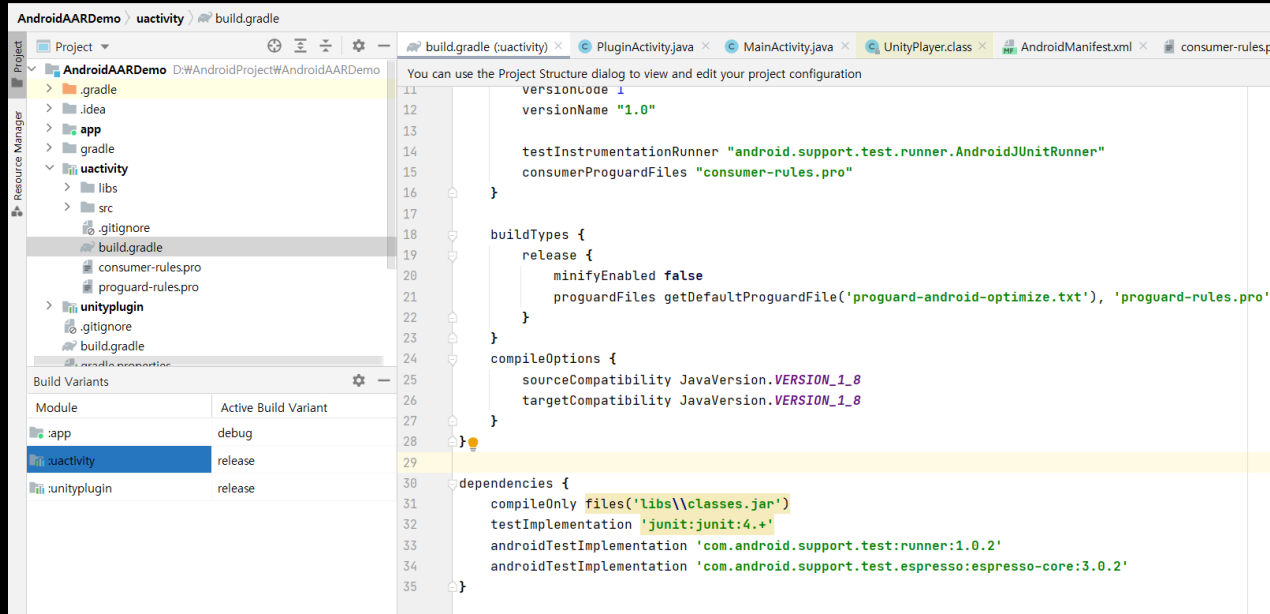
- 2020.3.14f1의 classes.jar에는 UnityPlayerActivity deprecated 되어 2019.2.13f1 classes.jar파일 사용하였습니다.

Android libs에 classes.jar 추가



- Android libs에 classes 파일을 추가합니다.

Build.gradle에 lib compile 속성 추가



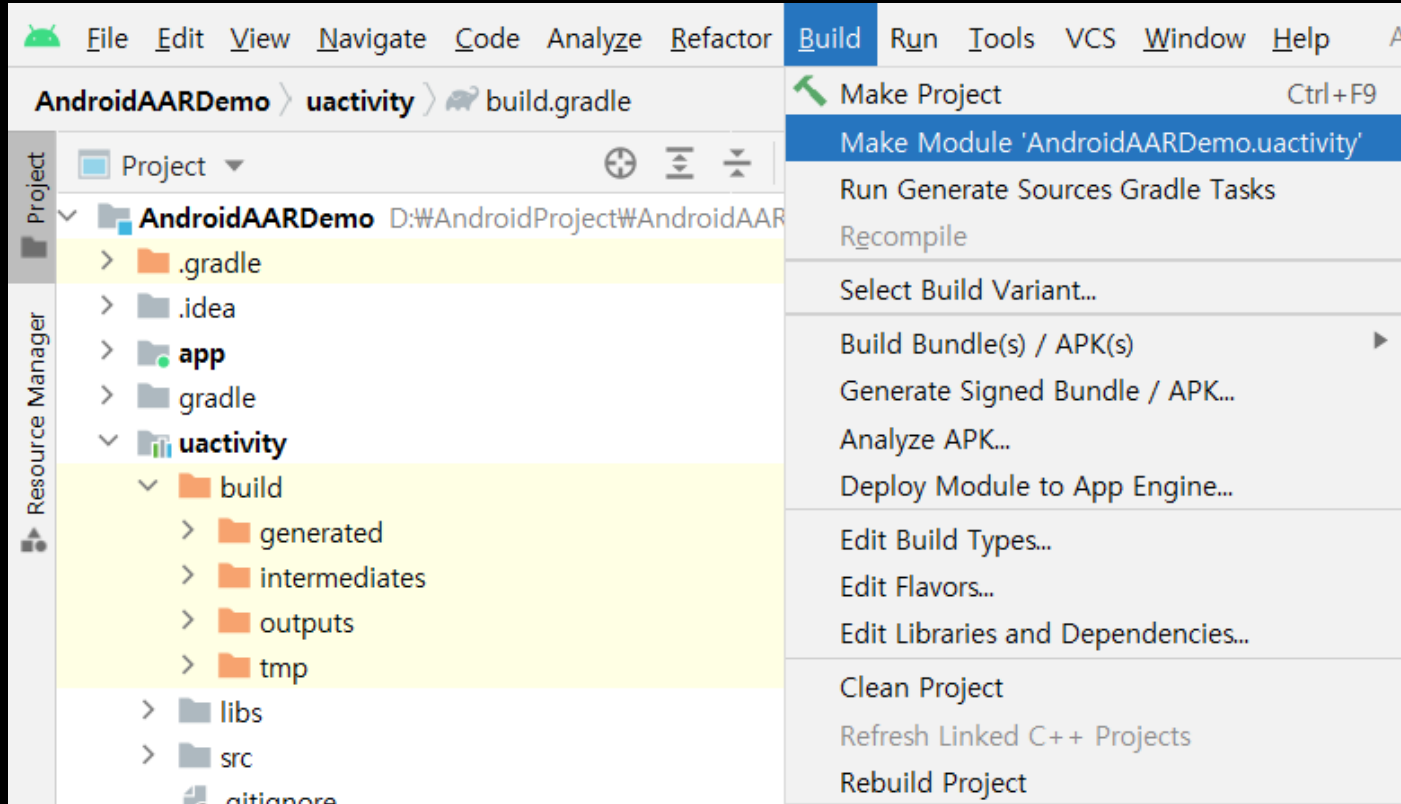
- `compileOnly files('libs\\classes.jar')`를 추가 합니다.
- `compileOnly` : 컴파일만 하고, Build 될 시 추가하지 않음

Android Code 작성

```
PluginActivity.java x
1 package com.eungyukm.uactivity;
2
3 import android.os.Bundle;
4 import android.widget.Toast;
5 import com.unity3d.player.UnityPlayer;
6 import com.unity3d.player.UnityPlayerActivity;
7
8 public class PluginActivity extends UnityPlayerActivity {
9     @Override
10    protected void onCreate(Bundle savedInstanceState) {
11        super.onCreate(savedInstanceState);
12
13        Toast.makeText(UnityPlayer.currentActivity, text: "Called from PluginActivity.", Toast.LENGTH_SHORT).show();
14    }
15
16    public void ShowToast(String msg) {
17        Toast.makeText(UnityPlayer.currentActivity, msg, Toast.LENGTH_SHORT).show();
18    }
19
20    public void ReceiveInput(String input) {
21        if(input != null) {
22            // s1 : UnityGameObject s2 호출할 메서드 이름
23            UnityPlayer.UnitySendMessage(s1: "UnityActivity", s2: "SetText", input);
24        } else {
25            Toast.makeText(UnityPlayer.currentActivity, text: "Input is incorrect", Toast.LENGTH_LONG).show();
26        }
27    }
28 }
29
```

- Unity -> Android Call 메서드
- ShowToast
- ReceiveInput
- Android -> Unity Call 메서드
- SetText

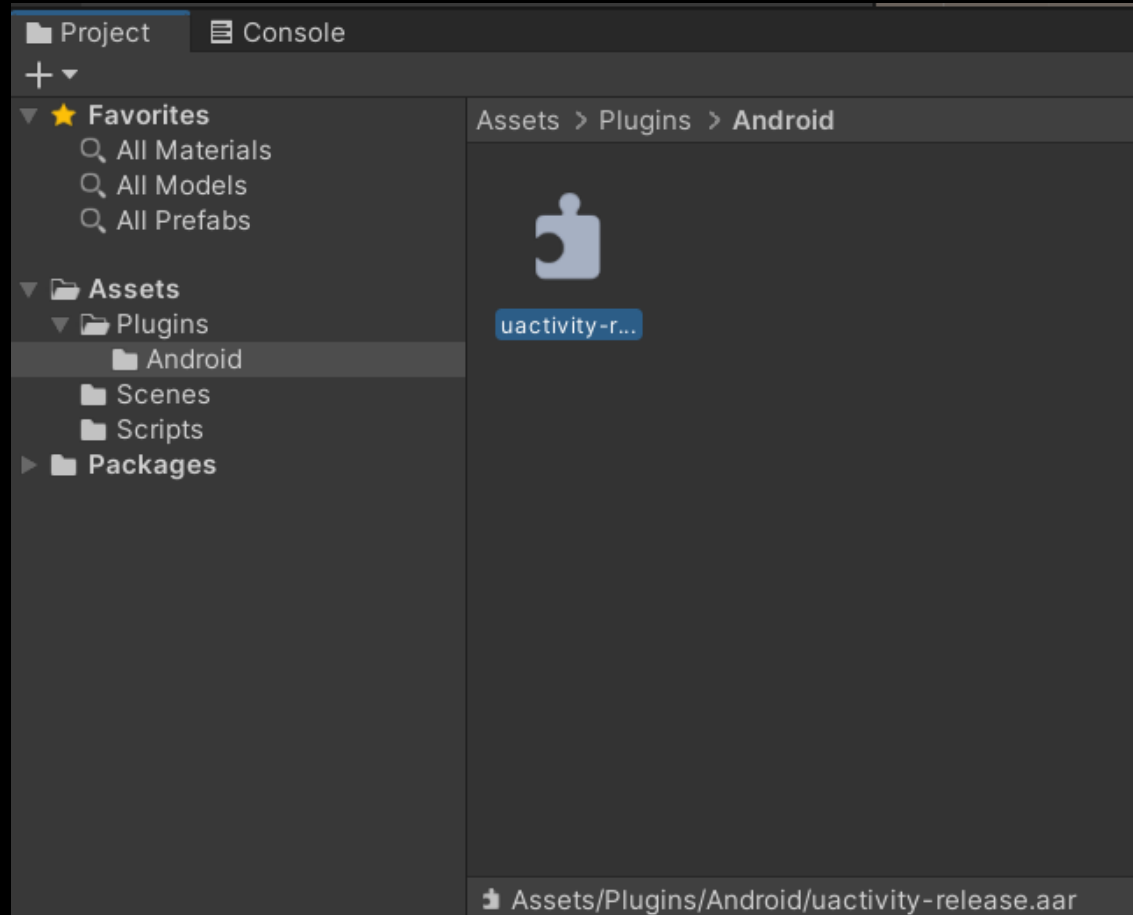
AAR Build



- Build -> Make Module 을 클릭하여 AAR을 빌드합니다.

AAR Unity 추가

- AAR을 Unity에 추가합니다.

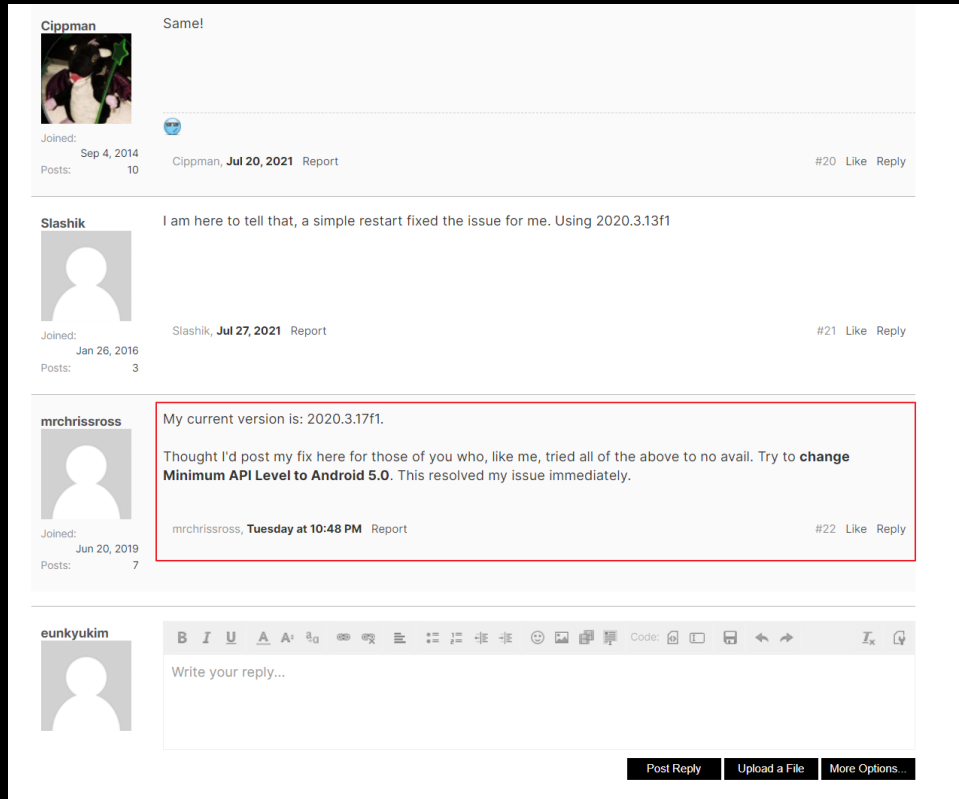


AAR Unity 추가

```
4 public class PluginActivity : MonoBehaviour
5 {
6     AndroidJavaObject pluginActivity;
7     [SerializeField] private Text text;
8
9     @Unity 메시지 참조 0개
10    void Start()
11    {
12        pluginActivity = new AndroidJavaObject("com.eungyukm.uactivity.PluginActivity");
13    }
14
15    참조 0개
16    public void TostMessage()
17    {
18        if (pluginActivity != null)
19        {
20            pluginActivity.Call("ShowToast", "Called from Unity");
21        }
22    }
23
24    참조 0개
25    public void AndroidInputCall()
26    {
27        if (pluginActivity != null)
28        {
29            Debug.Log("AndroidInputCall!!");
30            pluginActivity.Call("ReceiveInput", "Hello");
31        }
32    }
33
34    참조 0개
35    public void SetText(string input)
36    {
37        text.text = input;
38    }
39 }
```

- Unity Code 작성
- Unity → Android Call 메서드
- ShowToast
- ReceiveInput
- Android → Unity Call 메서드
- SetText

Unity Plugin 주의점



The screenshot shows a forum thread with three posts. The first post by Cippman says 'Same!'. The second post by Slashik says 'I am here to tell that, a simple restart fixed the issue for me. Using 2020.3.13f1'. The third post by mrchrissross, which is highlighted with a red border, says 'My current version is: 2020.3.17f1. Thought I'd post my fix here for those of you who, like me, tried all of the above to no avail. Try to **change Minimum API Level to Android 5.0**. This resolved my issue immediately.'

Cippman
Joined: Sep 4, 2014
Posts: 10
Same!
Cippman, Jul 20, 2021 Report #20 Like Reply

Slashik
Joined: Jan 26, 2016
Posts: 3
I am here to tell that, a simple restart fixed the issue for me. Using 2020.3.13f1
Slashik, Jul 27, 2021 Report #21 Like Reply

mrchrissross
Joined: Jun 20, 2019
Posts: 7
My current version is: 2020.3.17f1.
Thought I'd post my fix here for those of you who, like me, tried all of the above to no avail. Try to **change Minimum API Level to Android 5.0**. This resolved my issue immediately.
mrchrissross, Tuesday at 10:48 PM Report #22 Like Reply

eunkyukim
Write your reply...
Post Reply Upload a File More Options...

- Unity Plugin 주의점
- 5.0 (API level 21) 이상을 사용해야 합니다.
- <https://forum.unity.com/threads/unityplayeractivity-java-uses-or-overrides-a-deprecated-api.875770/>

Unity Plugin 결과



- Unity에서 Android Toast 메시지 출력
- Android에서 Unity SetText 메서드 호출