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[Tutorial][Android] Building Irrlicht Example 01 with Gradle

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[Tutorial][Android] Building Irrlicht Example 01 with Gradle

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📄 by **LunaRebirth** » Mon Jan 29, 2018 10:14 pm

LunaRebirth

Posts: 386
Joined: Sun May 11, 2014 12:13 am

Building Irrlicht Example 01 with Gradle

Requirements:
Irrlicht (OGL-ES):
https://sourceforge.net/p/irrlicht/code ... es/ogl-es/
Cygwin: https://www.cygwin.com/
Android Studio:
https://developer.android.com/studio/index.html
Android NDK & SDK: (available for download in Android Studio)

1. Compile Irrlicht
*Before this step, make sure you have already downloaded Android Studio, the NDK and SDK.

Download the OGL-ES snapshot from the link given above.
Extract it to any location.
Open Cygwin, and cd to your Irrlicht directory.
"cd IrrlichtPath/source/Irrlicht/Android"
In Cygwin, do "ndk-build"
This may take a while to compile Irrlicht for different targets. In the end, you should see these folders in location "IrrlichtPath/source/Irrlicht/Android/obj/local/":
"arm64-v8a", "armeabi", "armeabi-v7a", "mips64", "x86", "x86_64".

*I mention the required targets because the OGL-ES branch I have to try compiling twice before I get the "x86" folder. I'm

unsure why.

2. Create an Android Studio project

In Android Studio, press File > New > New Project.
Give your project any name and location you want. Select
"Include C++ Support" and a minimum SDK (I'm using the
default value -- currently 16).
Press Next, and choose the "Empty Activity". **UNCHECK**
"Generate Layout File" and "Backwards Compatibility
(AppCompat)". Press "Finish" to create the project.

3. Android Studio Project Files

Firstly, in Android Studio, go to app > cpp. Right-click "native-
lib.cpp" and delete it from the project.

In Android Studio's project browser, open app > java > (YOUR
PROJECT) > MainActivity. Edit it to look like this:

CODE: SELECT ALL

```
package <YOUR PROJECT PACKAGE>;

import android.app.NativeActivity;
import android.os.Bundle;

public class MainActivity extends NativeActivit

    public void onCreate(Bundle savedInstanceSt
        super.onCreate(savedInstanceState);
    }
}
```

(Don't forget to change the package name to your project's
package).

Now go to app > manifests. Edit AndroidManifest.xml to look
like this:

CODE: SELECT ALL

```
<?xml version="1.0" encoding="utf-8"?>
<manifest
    xmlns:android="http://schemas.android.com/a
    package="(YOUR PROJECT PACKAGE HERE)" >

    <application
        android:allowBackup="false"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:theme="@android:style/Theme.NoT

        <activity
            android:name=".MainActivity"
            android:screenOrientation="portrait"
```

(You may need to change android:name=".MainActivity" to
android:name="com.yourpackage.MainActivity", though you
probably won't have to).

Press the drop-down for "External Build Files" in Android Studio. Edit CMakeLists.txt to look like this:

CODE: SELECT ALL

```
# Sets the minimum version of CMake required to
# library. You should either keep the default va
# value of 3.4.0 or lower.

cmake_minimum_required(VERSION 3.4.1)

# Creates and names a library, sets it as either
# or SHARED, and provides the relative paths to
# You can define multiple libraries, and CMake
# Gradle automatically packages shared librarie

add_library( # Sets the name of the library.
            app-glue
```

(NOTE: I placed important messages in comments that start with "#>>>". Make sure to read them)

Now we need to make sure that we get the Irrlicht media packaged into the program for the HelloWorld example.
Open app > build.gradle and add this to the **end** of the file.
Do not replace anything in this file.

CODE: SELECT ALL

```
copy {
    from "../../irrlicht"
    into "src/main/assets"
    include 'media/**'
}
```

(Note that you may need to change the irrlicht directory. This is where I placed mine.
In the end, this should create an assets folder with Irrlicht's media files into your Android Studio project path "app/src/main")

4. Use the Irrlicht example code
Inside of your Irrlicht OGL-ES snapshot download, there is a folder "IrrlichtPath/examples/01.HelloWorld_Android".
In this folder, copy these files:
"android_tools.cpp", "android_tools.h", and "main.cpp".
Paste these into your Android Studio project path under directory "app/src/main/cpp"

5. Run your project
At this point, if you haven't synced your project, your project may say it's missing some files (like android_native_app_glue.h). This is fine, Android Studio should fine it once it builds your project.

Open the AVD Manager (press the icon in Android Studio at the top that looks like a phone with the Android symbol on it).
If you don't have any virtual devices, create one and run it.
If you do have a virtual device: in the right-hand side of the AVD Manager window is an "Actions" column with a drop-down arrow. Select it, and press "Cold Boot Now"

*Important NOTE: "Cold Boot Now" is not required, but I've been having a lot of issues restarting Android Studio emulators. While looking around on Google, it appears this is quite common. I was getting error "Client couldn't connect within 7 seconds..." without doing a cold boot.

Once your device starts up and is functional, go to Android Studio and select Run > Run 'app'.
After your project builds, it should automatically open and run the Irrlicht program on the virtual device.

Done!

POSSIBLE ERRORS:
If you get error "undefined symbol: ANativeActivity_onCreate", it's likely that you removed "app_dummy()" from the Irrlicht example. This error is wierd, because Android Studio puts a strike through this function and lists it as "deprecated," but it's still actually needed by Irrlicht.

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Re: [Tutorial][Android] Building Irrlicht Example 01 with Gr

📄 by **jorgerosa** » Tue Dec 03, 2019 12:51 am

This is so great and very well explained !!!
I´m doing a (small) football game in irrlicht, I had in mind to try to port it to android too, this will help me a lot !!!
I´ll try this as soon as I can! **THANKYOU LunaRebirth**! 😃

___

Portfolio:
https://jorgerosa.github.io/angelimoto/ ... -PORTFOLIO

jorgerosa
Competition winner

Posts: 117
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