LAB #6 – PROJECT NOTES

THE BUILD PROCESS

Building an application is when Unity exports the project that you've made into a file format that can be run by a specific device. More generally speaking, building is part of the process that turns human-written code into computer-readable code.

Unity provides multiple options for building applications: you can choose a variety of platforms. Today we're going to focus on Android and iOS to fit with our use of the Cardboard SDK. Generally, your build process will involve:

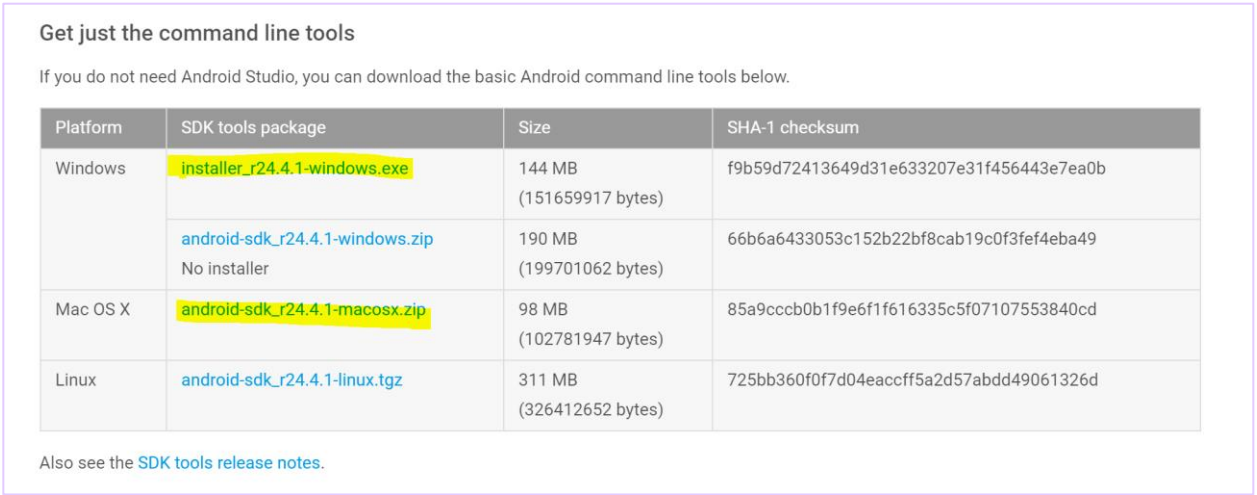
- Switching your Unity player to your desired platform if you haven't already
- Adding your scenes into the build window
- Defining player settings
- Building to an app or a project
- Deploying

ANDROID INSTRUCTIONS

Use these instructions if you are building your VR Space application to use Cardboard on an Android phone.

INSTALL THE ANDROID SDK & JAVA JDK

1. Download and install the Android SDK from http://developer.android.com/sdk/. You do not need to download Android Studio, just the SDK tools package:



Get just the command line tools

If you do not need Android Studio, you can download the basic Android command line tools below.

Platform	SDK tools package	Size	SHA-1 checksum
Windows	installer_r24.4.1-windows.exe	144 MB (151659917 bytes)	f9b59d72413649d31e633207e31f456443e7ea0b
	android-sdk_r24.4.1-windows.zip No installer	190 MB (199701062 bytes)	66b6a6433053c152b22bf8cab19c0f3fef4eba49
Mac OS X	android-sdk_r24.4.1-macosx.zip	98 MB (102781947 bytes)	85a9cccb0b1f9e6f1f616335c5f07107553840cd
Linux	android-sdk_r24.4.1-linux.tgz	311 MB (326412652 bytes)	725bb360f0f7d04eaccff5a2d57abdd49061326d

Also see the SDK tools release notes.

2. You may need to install the Java development kit as part of the installation process for the Android SDK. You can download the Java JDK at the following link, or from the link in the Android installer: http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html

   Select the radio button for **Accept License Agreement**, and then download the file associated with the **Product/File Description** that matches your system.

   - If you are running on a Macbook, select Mac OS X
   - If you are running a 64-bit version of Windows, choose x64 – for a 32-bit system, choose the x86 version. You can find your system information by going to Settings > System > About and looking at **System Type**

Java SE Development Kit 8 Downloads

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, applets, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

See also:

- Java Developer Newsletter: From your Oracle account, select **Subscriptions**, expand **Technology**, and subscribe to **Java**.
- Java Developer Day hands-on workshops (free) and other events
- Java Magazine

JDK 8u91 Checksum
JDK 8u92 Checksum

Java SE Development Kit 8u91

You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

○ **Accept License Agreement** ◉ **Decline License Agreement**

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	77.72 MB	jdk-8u91-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	74.69 MB	jdk-8u91-linux-arm64-vfp-hflt.tar.gz
Linux x86	154.74 MB	jdk-8u91-linux-i586.rpm
Linux x86	174.92 MB	jdk-8u91-linux-i586.tar.gz
Linux x64	152.74 MB	jdk-8u91-linux-x64.rpm
Linux x64	172.97 MB	jdk-8u91-linux-x64.tar.gz
Mac OS X	227.29 MB	jdk-8u91-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	139.59 MB	jdk-8u91-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	98.95 MB	jdk-8u91-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	140.29 MB	jdk-8u91-solaris-x64.tar.Z
Solaris x64	96.78 MB	jdk-8u91-solaris-x64.tar.gz
Windows x86	182.11 MB	jdk-8u91-windows-i586.exe
Windows x64	187.41 MB	jdk-8u91-windows-x64.exe

3. Once you have installed the Java SDK, you can continue with the Android installation. I recommend installing the SDK into a folder you will remember easily (e.g. Documents\Android or a similar location)

BUILD FROM UNITY

Before we start our Android Build, we must add a few project settings.

1. Open the Player Settings by going to Edit > Project Settings > Player. The Player Settings will open in the Inspector window.
2. Add your scenes to the build using the **Add Open Scene** button
3. Change your "Company Name", "product name", and "Bundle Identifier" (under Other Settings > Identification) to unique names. You'd replace these with your own information in a finalized app:
    a. Company Name: "mycompany"
    b. Product Name: "demoapp"
    c. Bundle Identifier: "com.mycompany.demoapp"
4. Click **Build**.
5. Specify a name and location to save your sample application.

When you first build from Unity, you will need to tell Unity where your Android SDK is located. Open File > Build Settings and choose Android, then click **Build** to start the process.

1. When Unity asks, find the main folder for your Android SDK installation location and click OK.
2. If prompted, allow Unity to install and update additional packages.

Once your application finishes building, you can copy and paste it over to your phone to install it. You may need to enable applications from any source (developer mode) on your phone before you can install your own application.

IOS BUILD INSTRUCTIONS

In order to build for iOS, you MUST have access to a Mac computer with XCode installed. You can download XCode from the Mac App Store. Unlike with Android, Unity will not produce a full runnable application for iOS, and will instead produce a project folder that needs to be compiled with XCode.

You must also create a developer account with Apple and provision this for your device. You can find instructions for this here:
https://developer.apple.com/library/ios/documentation/IDEs/Conceptual/AppDistributionGuide/LaunchingYourApponDevices/LaunchingYourApponDevices.html

Google has additional instructions on their site:
https://developers.google.com/cardboard/unity/get-started-ios

1. Open up the Build window and choose iOS.

2. XCode will build a project folder—enter a name for your folder and click OK to kick off the process.
3. When the build has finished, open XCode and attach your iOS device to your computer.
4. Click the Unity-iPhone project icon at the top of the list in XCode.
5. Under 'Identity', choose a bundle identifier in the form above:
    a. Bundle Identifier: “com.mycompany.demoapp”
6. On your iOS device, go to General > Profile > select the email address used and select it as a trusted device.
7. Back in XCode, play your app to launch it on your device!