PhoneGap

Lesson 1

Thomas Mak

makzan@42games.net

Source Codes

https://github.com/makzan/PhoneGap-Course-Examples

The mobile apps

The mobile apps

- Every mobile brand is rolling out their mobile app stores

Difficulties

- Every brand comes with their development toolkit and favorite language.
- XCode for iOS with Objective-C
- Android SDK with Java
- Windows Phone with C#
- BlackBerry SDK with Java
- Palm SDK with HTML and JavaScript

The mobile web

The modern web

- HTML5
- CSS3
- the new JavaScript

CSS3

- Media Query
  - Define styles for different screen dimension
- Transition and Animation
  - GPU accelerated animation
- Color and Gradients

HTML

- HTML, HTML4, HTML5, HTML~~6~~
- Local Storage
- Offline Cache
- Canvas
- New tags and attributes

JavaScript

- Canvas API
- Local Database

JavaScript

- Device API
  - Location
  - Orientation
  - Accelerometer
  - Gyroscope
  - Camera is coming

The current problem of web application

- Lack of device access (yet)
  - No camera, No contact list, No local file access...
- Execution is slower than native application

PhoneGap

- Provides device access for web application.
- Unifies the device access API.
- It is now part of the Apache and renamed to Cordova.

How PhoneGap works

- Able to run a web view inside native app
- Able to communicate between the web and the native app
- PhoneGap fill in the gap that different device uses different approaches for web to communicate with native app.

The mobile web

- Most of the mobile web browsers are based on WebKit
- Webkit is the web rendering engine behind Google Chrome and Safari.
- Webkit is modern that supports latest web standard.
- Webkit executes JavaScript fast.

The mobile web

- CSS media query
  - Define style based on the screen dimension
- Faster JavaScript execution

How mobile web application differs from traditional web?

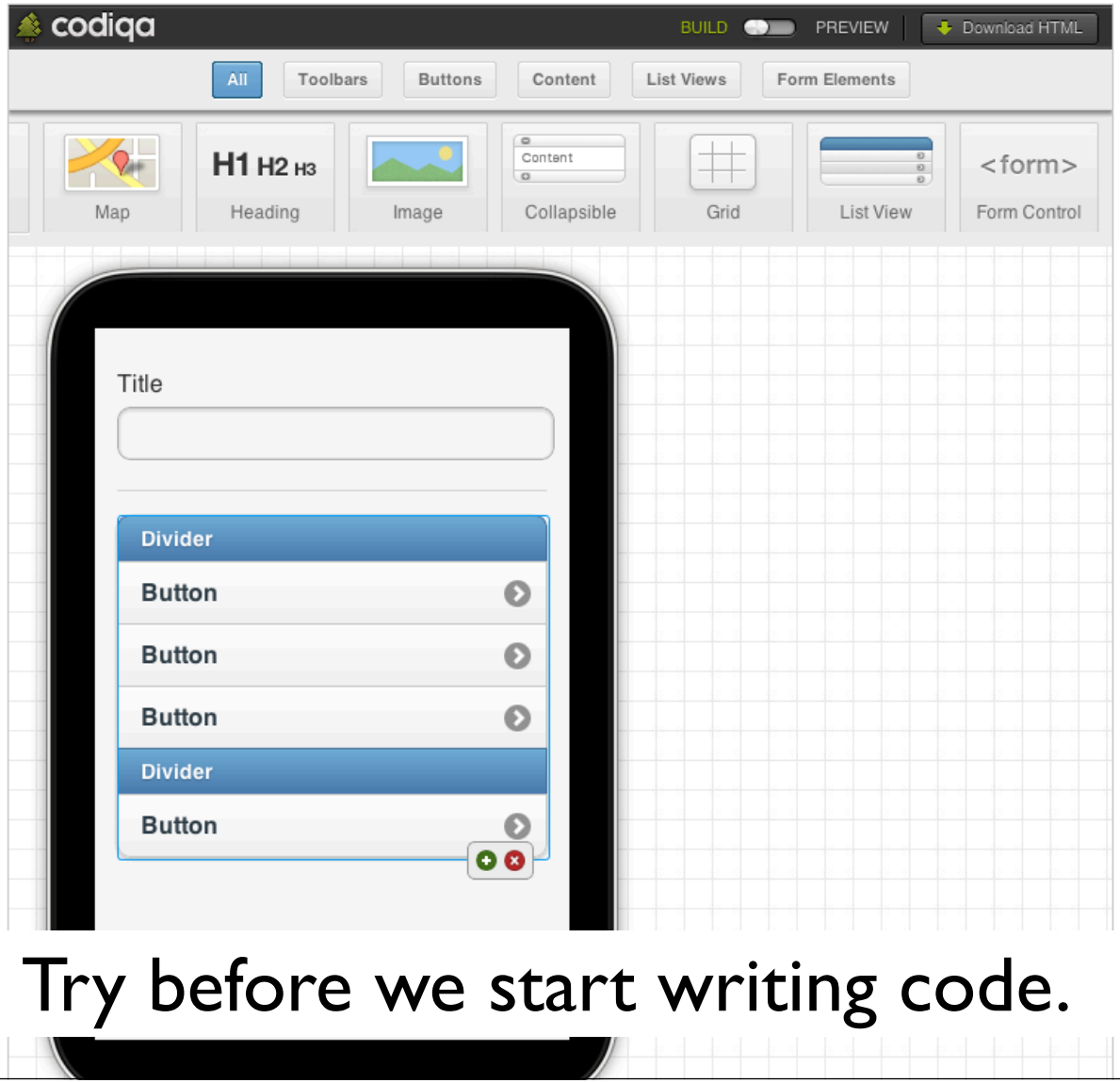
- Tapping area for small screen
- Listing things vertically
- Network not so reliable.
  - We need to put things offline
- Putting content into one page.

jQuery Mobile

- Single Page Application
- Put page into tags
- iOS-like User Interface

http://jquerymobile.com/test/

jQuery Mobile

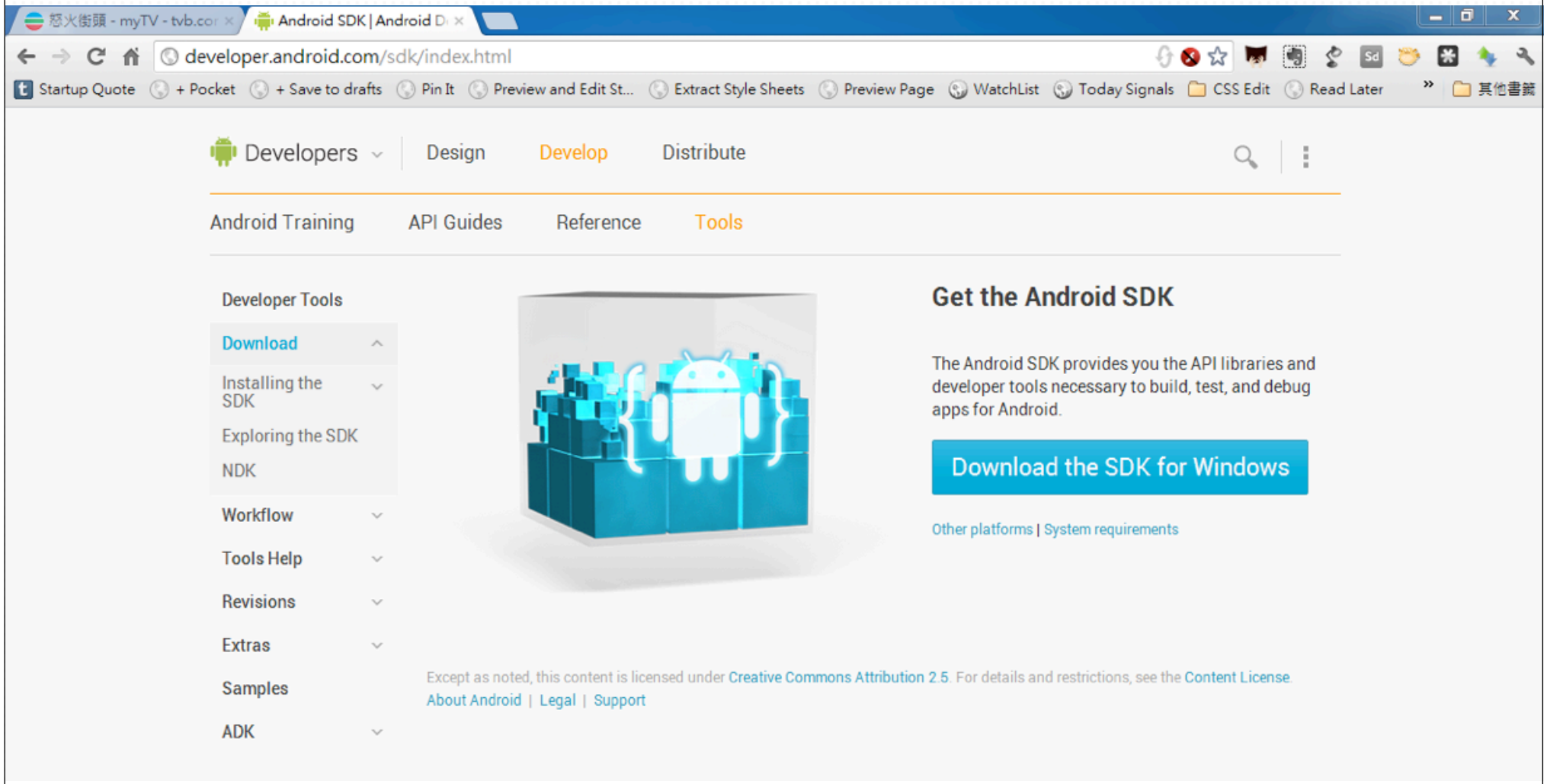


Try before we start writing code.

Installing Android SDK

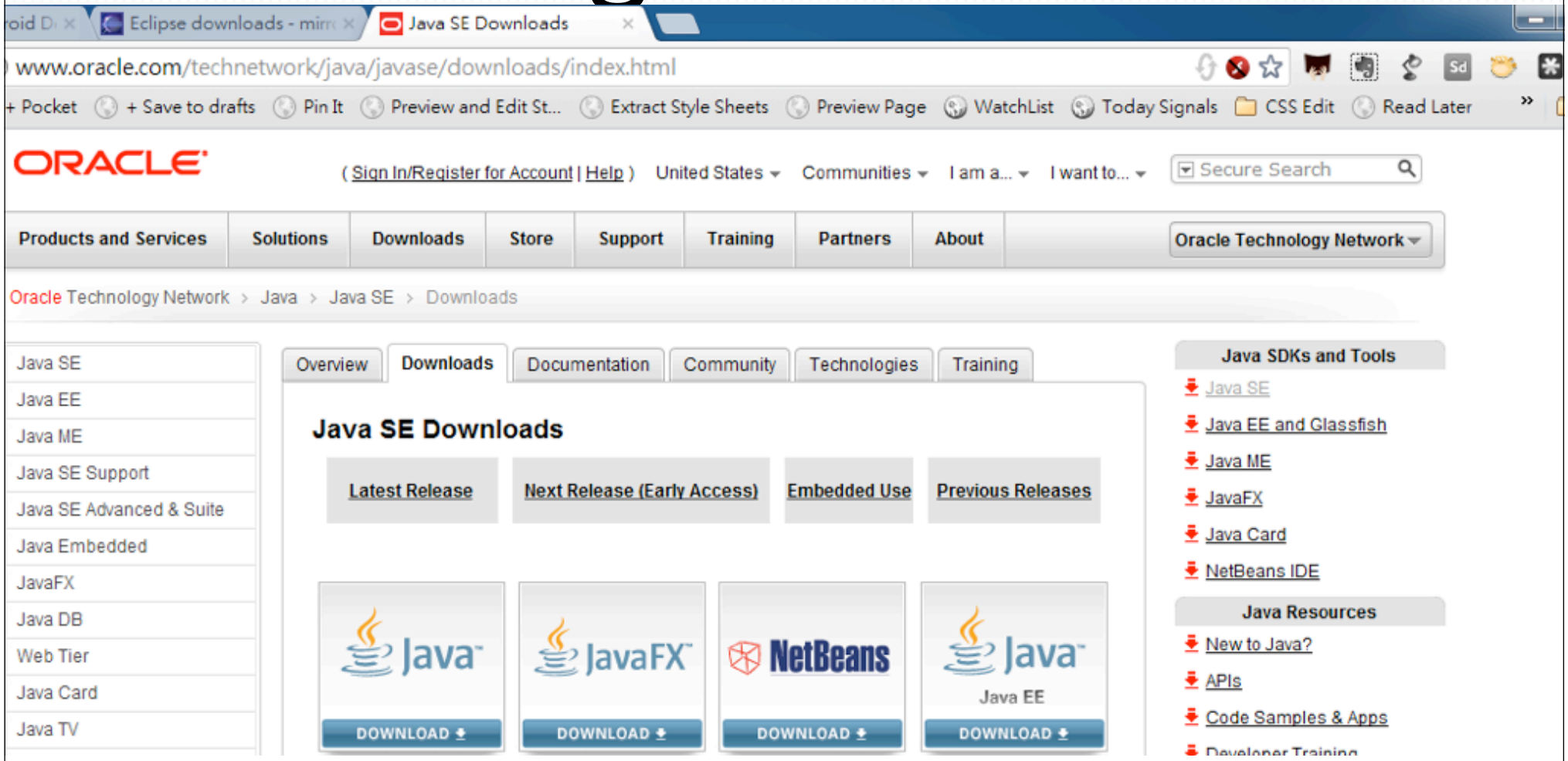
- You need to have JDK installed.
- (Optionally) You can install Android Development Plugin for Eclipse.
- Be sure to install it in place other than C:\ Program Files

Installing Android SDK



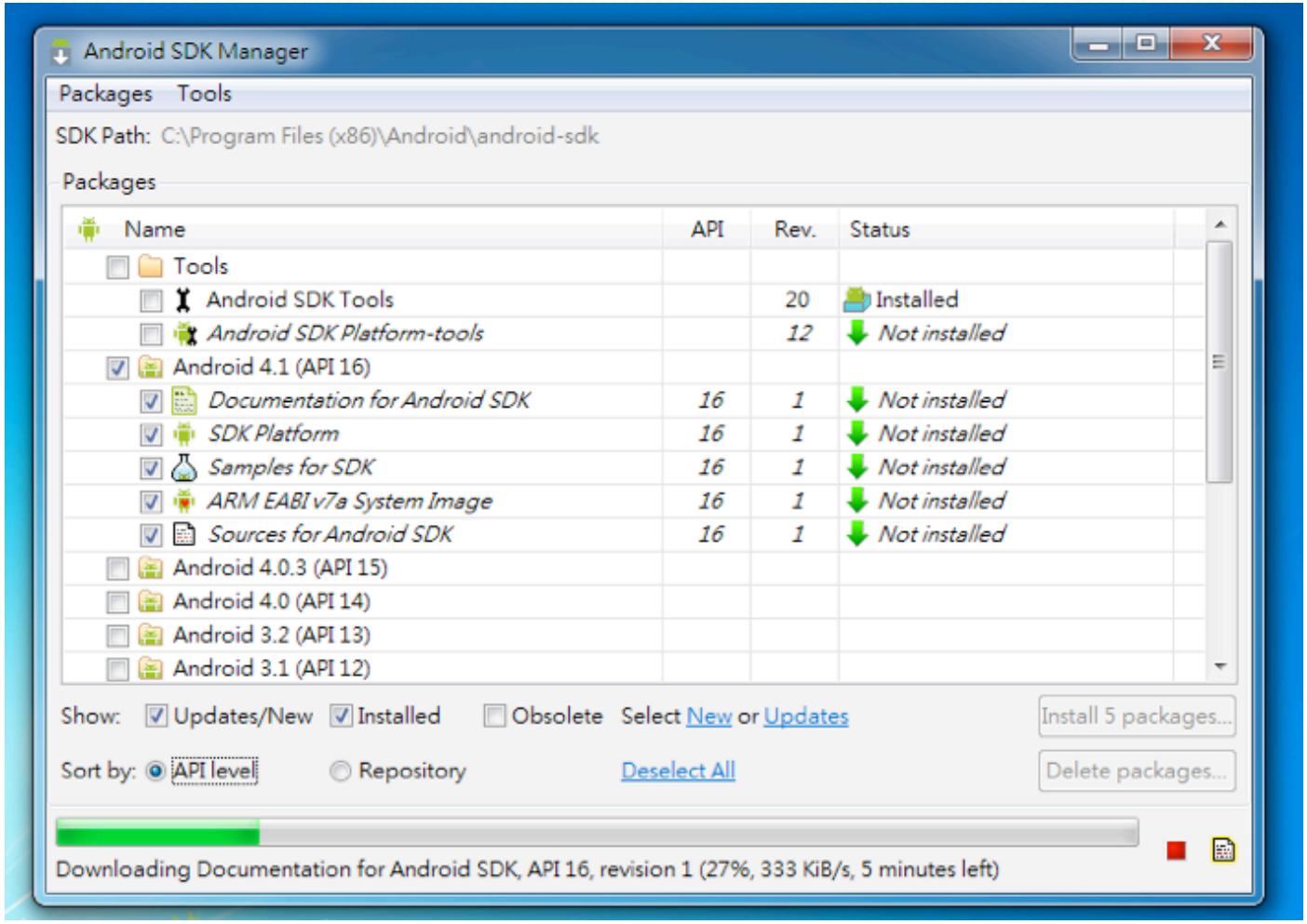
Download the Android SDK

Installing Android SDK



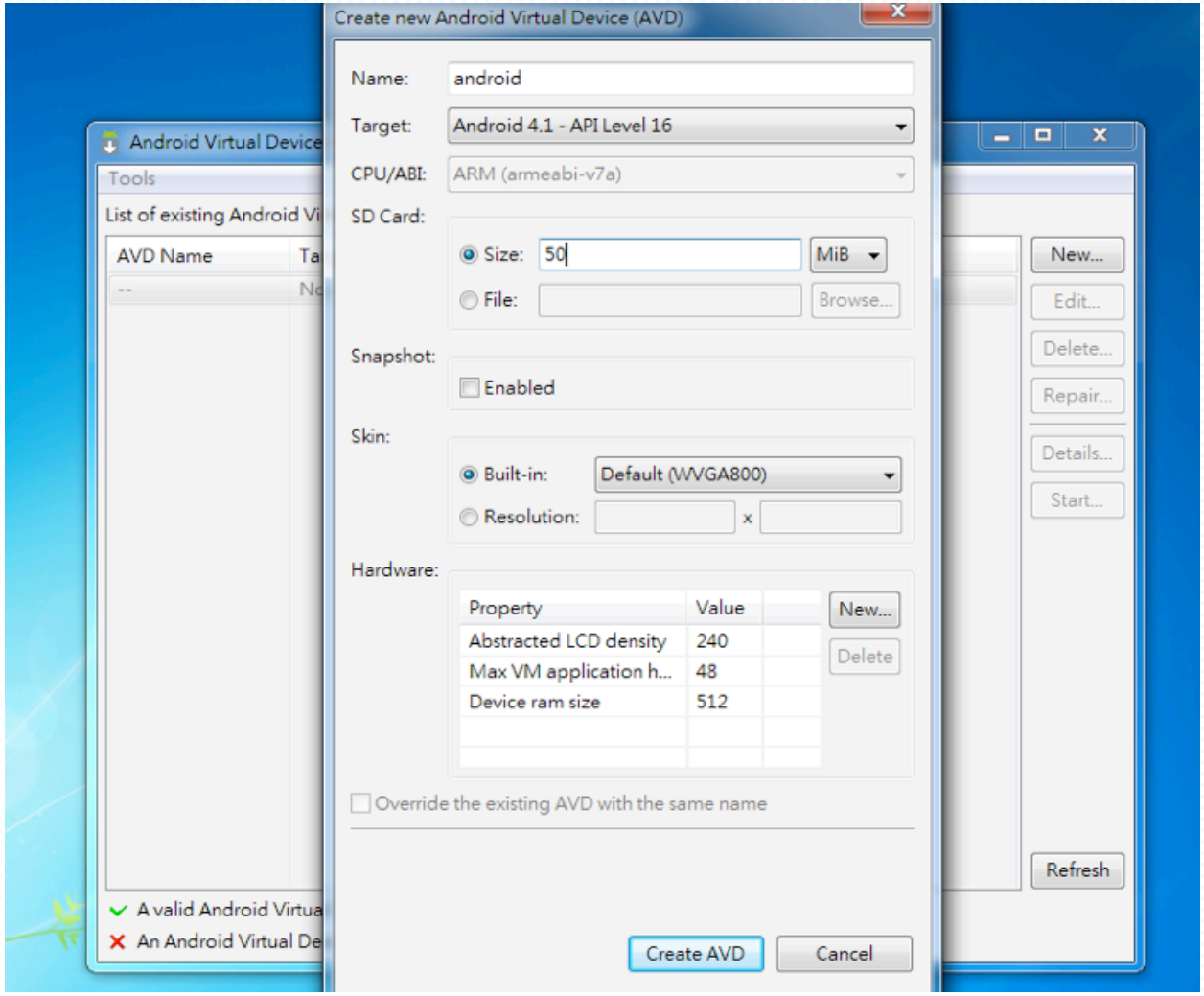
If JDK is not installed, we need it before installing Android SDK.

Installing Android SDK



In the SDK Manager, select android version to install.

Android Virtual Device

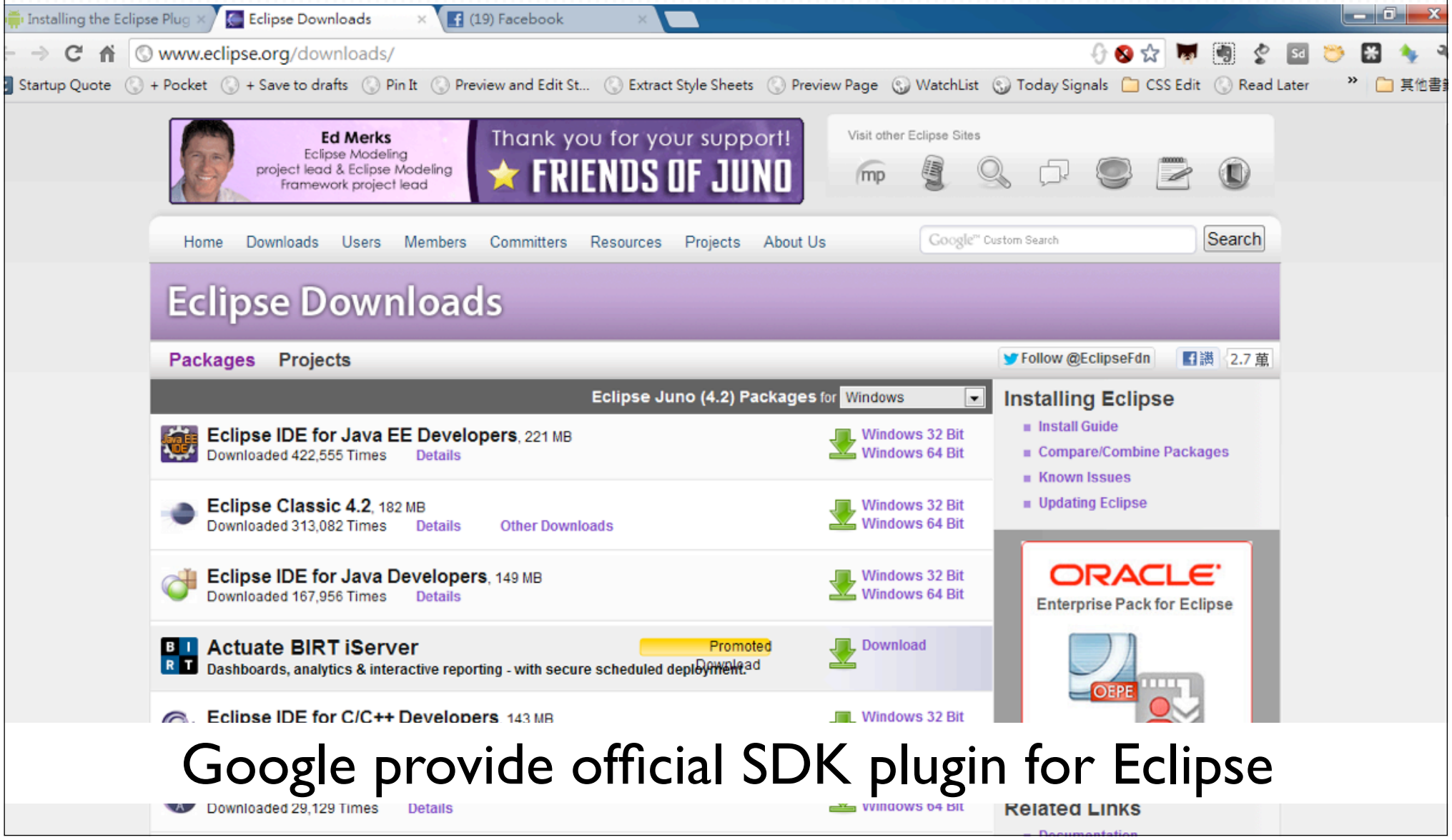


After SDK installation, we need to create a virtual device

Android Virtual Device

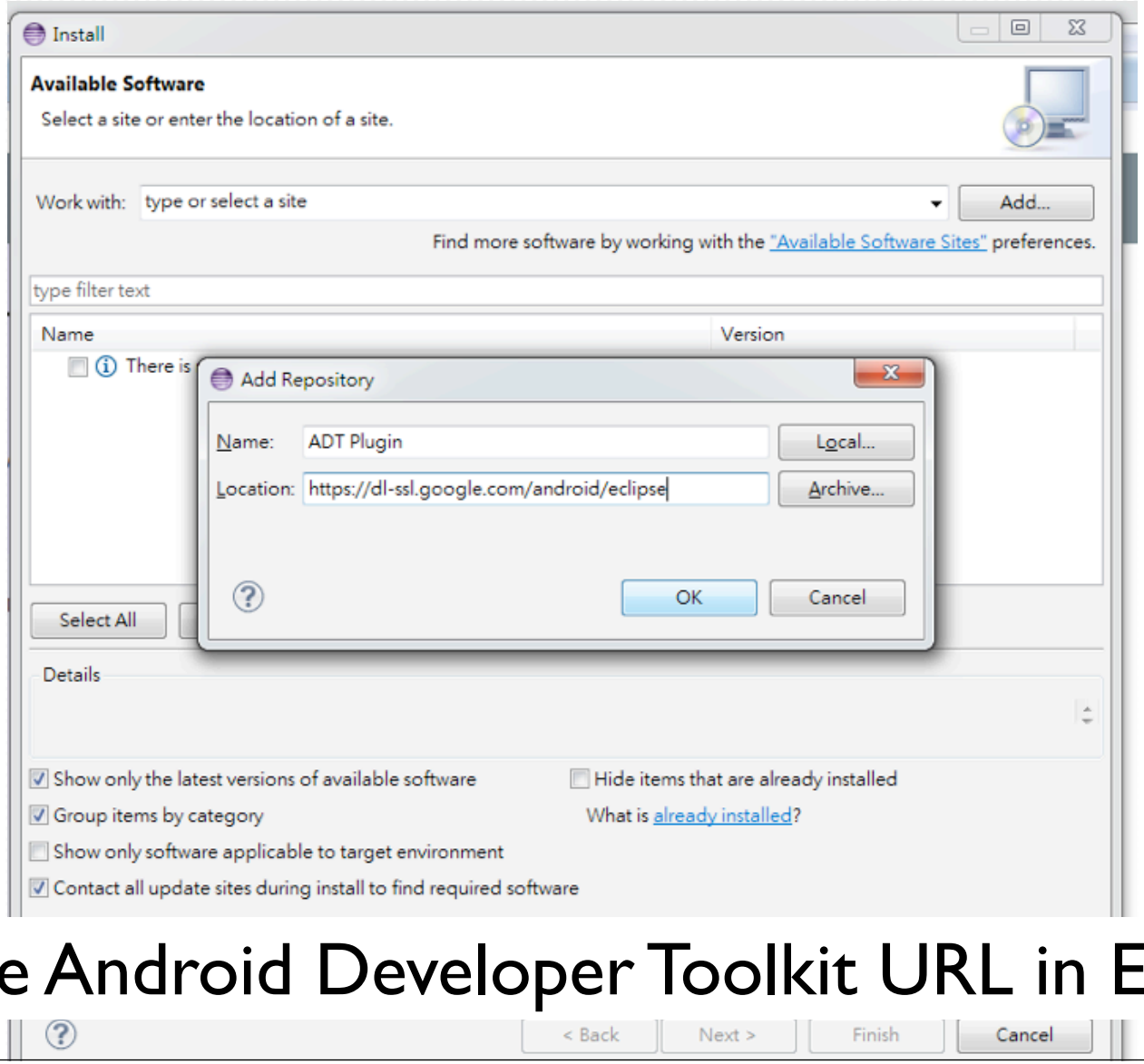
This is the android emulator running.

Setup Eclipse for Android



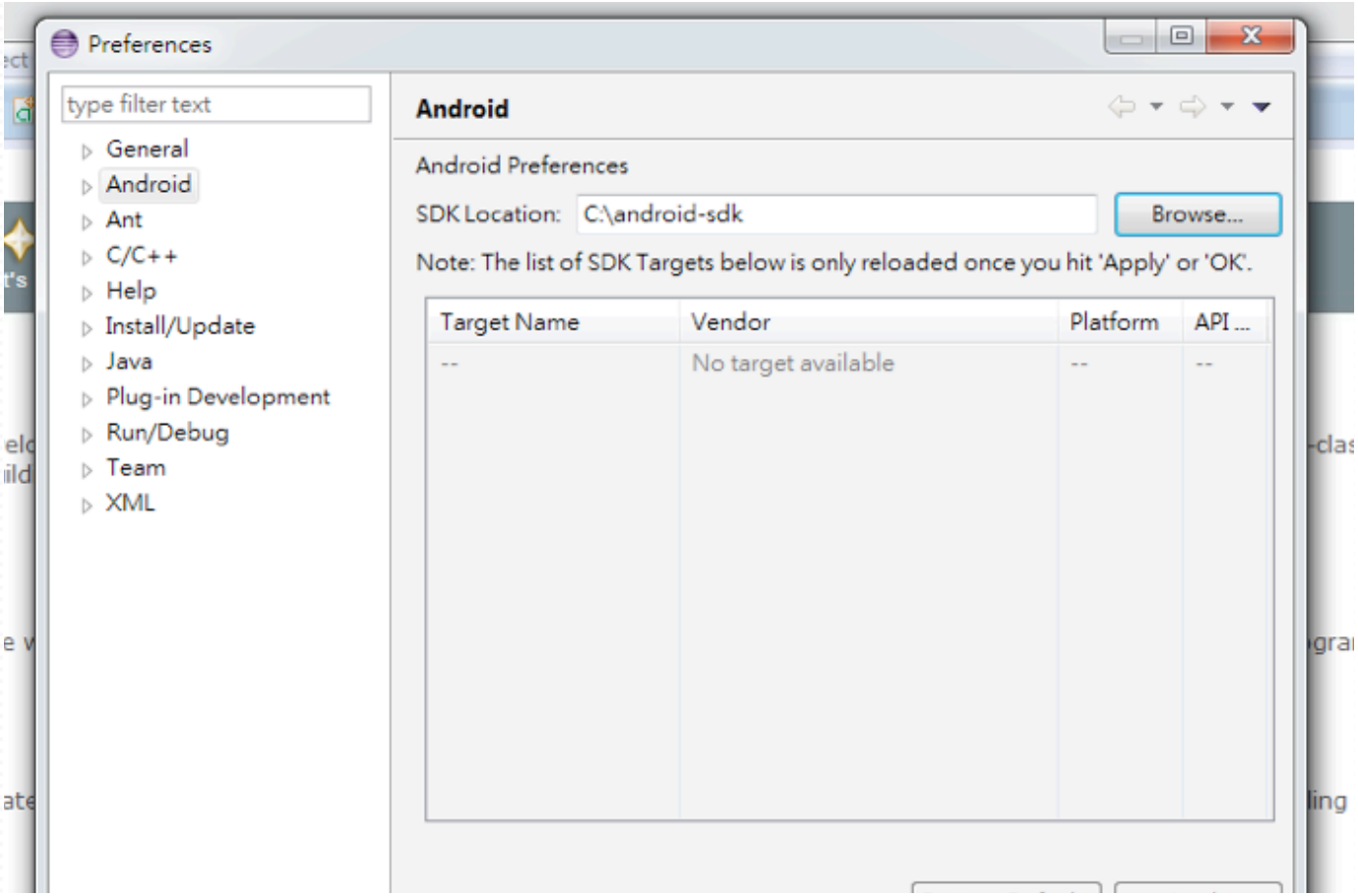
Google provide official SDK plugin for Eclipse

Setup Eclipse for Android



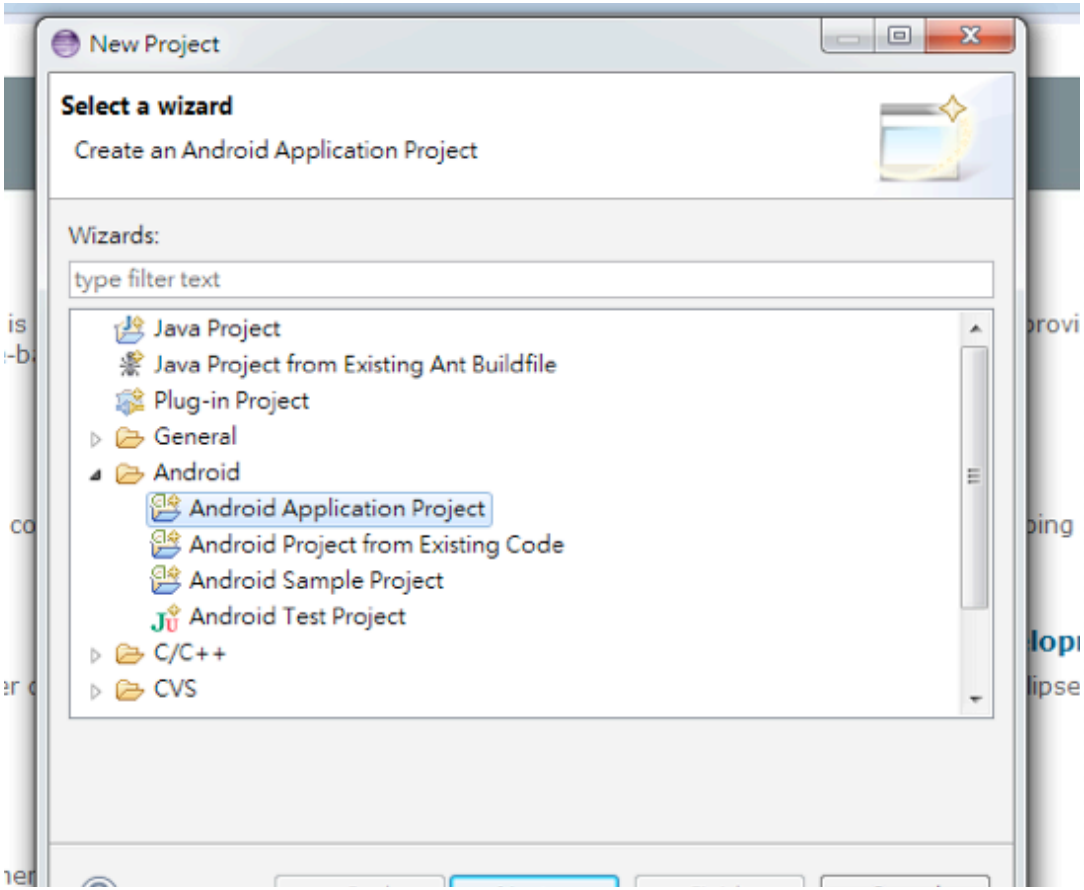
Add the Android Developer Toolkit URL in Eclipse.

Setup Eclipse for Android



There is an issue that Google installs android SDK inside Program Files directory. It is suggested to move it outside the Program Files. Then we need to configure the SDK location in Eclipse.

Creating Android Project



Now we should be able to create new Android project in Eclipse.

Creating Android Project

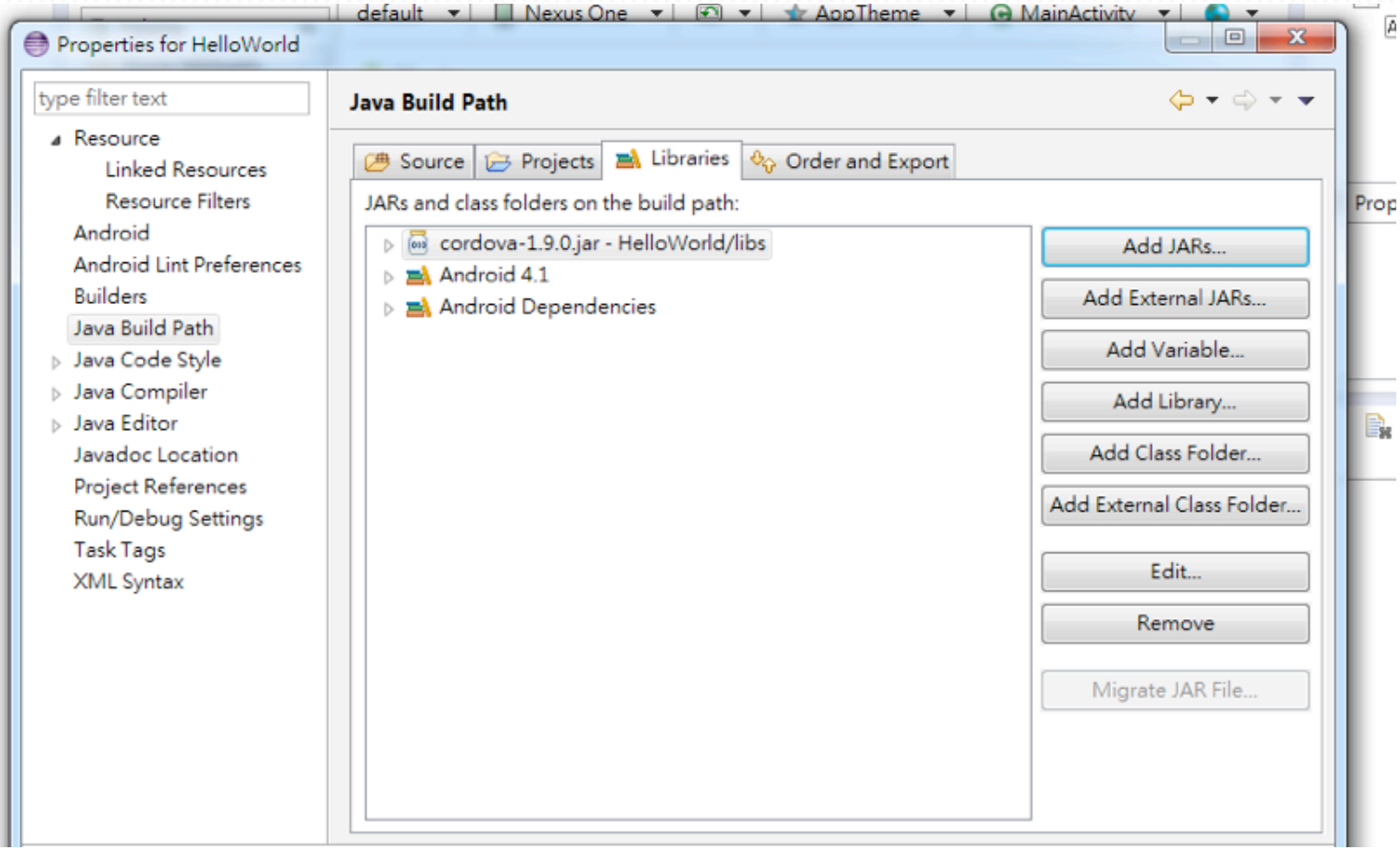
- Create new Android project in Eclipse
- Once the project is created, ensure the following folders are there. Or create them.

  /libs

  /assets/www

- copy cordova-1.9.0.js to assets/www
- copy cordova-1.9.0.jar to libs
- create a file named index.html inside assets/www

Creating Android Project



After import the cordova.jar, we need to ensure it is presented in the Java Build Path.

Creating Android Project

activity_main... | MainActivity.j... | C:\Users\makz... | index.html | HelloWorld Ma...

```java
package com.example.helloworld;

import android.os.Bundle;
import org.apache.cordova.*;

public class MainActivity extends DroidGap {

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        super.loadUrl("file:///android_asset/www/index.html");
    }


}
```

In the MainActivity.java, we modify the original code to the above one.

PhoneGap on iPhone

- You need a Mac.
- XCode can be found on App Store.
- It's free to run app on iOS simulator.
- You need to enroll into the iOS developer program to run the app on actual device.

Installing XCode

Featured | Top Charts | Categories | Purchases | Updates

Xcode

Installed

Xcode

Xcode provides everything developers need to create great applications for Mac, iPhone, and iPad. Xcode 4 has been streamlined to help you write better apps. It has unified user interface design, coding, testing, and debugging all within a single window. The Xcode IDE analyzes the details of your project to identify mistakes in both syntax and logic, it can even help fix your code for you.

...

...More

What's New in Version 4.3.3

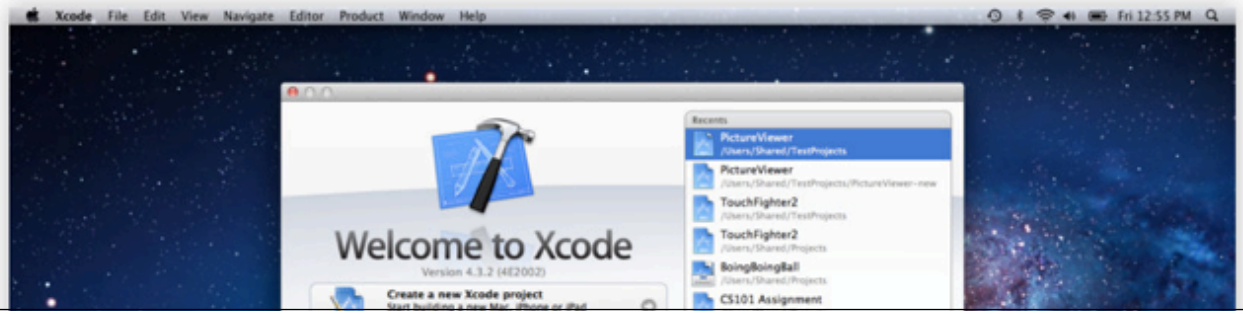
- Includes iOS 5.1 SDK and an updated SDK for OS X Lion.
- Provides additional bug fixes and stability improvements....

...More

Apple Web Site

Xcode Support

App License Agreement



Information

Category: Developer Tools
Updated: 11 June 2012
Version: 4.3.3
Price: Free
Size: 1.43 GB
Language: English
Developer: iTunes S.a.r.l.
© 2012 Apple Inc.

Rated 4+
Requirements:
OS X 10.7.3 or later

The Project

- You are going to work on a project after the course.
- Plan earlier.