

Set up Android Development Environment

Outline

- System requirements
- Install developing tools
- Create your first android project

System Requirements

- Operating Systems
 - Microsoft Windows XP or later version
 - Mac OS X 10.5.8 or later version with Intel chip
 - Linux including GNU C Library 2.7 or later
- Tools needed before starting developing android program
 - Java JDK
 - Android SDK
 - Eclipse IDE for Java Developers (optional)
 - Android Development Tools (ADT) Eclipse Plugin (optional)

Install Developing Tools

- JDK
- Eclipse IDE
- ADT plugin
- Android SDK

Install JDK 6

1. Download the latest JDK from Sun at <http://java.sun.com/javase/downloads/index.jsp>
2. After installing JDK , remember to modify environment parameters “Path”
 - C:\Programming Files\Java\jdk1.6.0_16\bin
 - C:\Programming Files\Java\jre6\bin

Install JDK 6

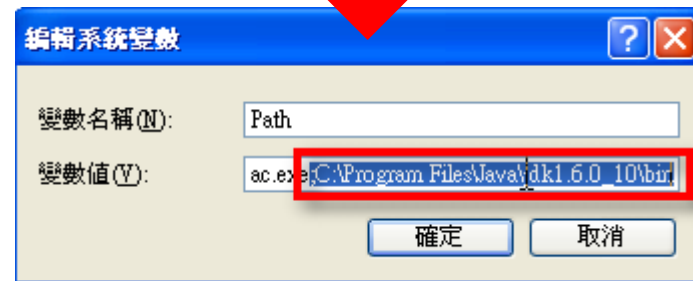
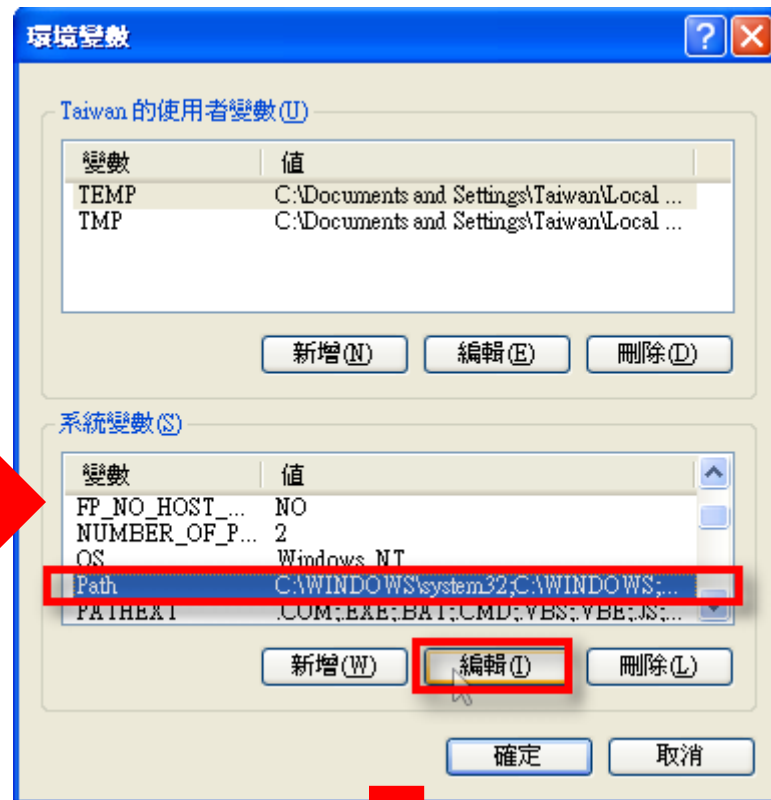
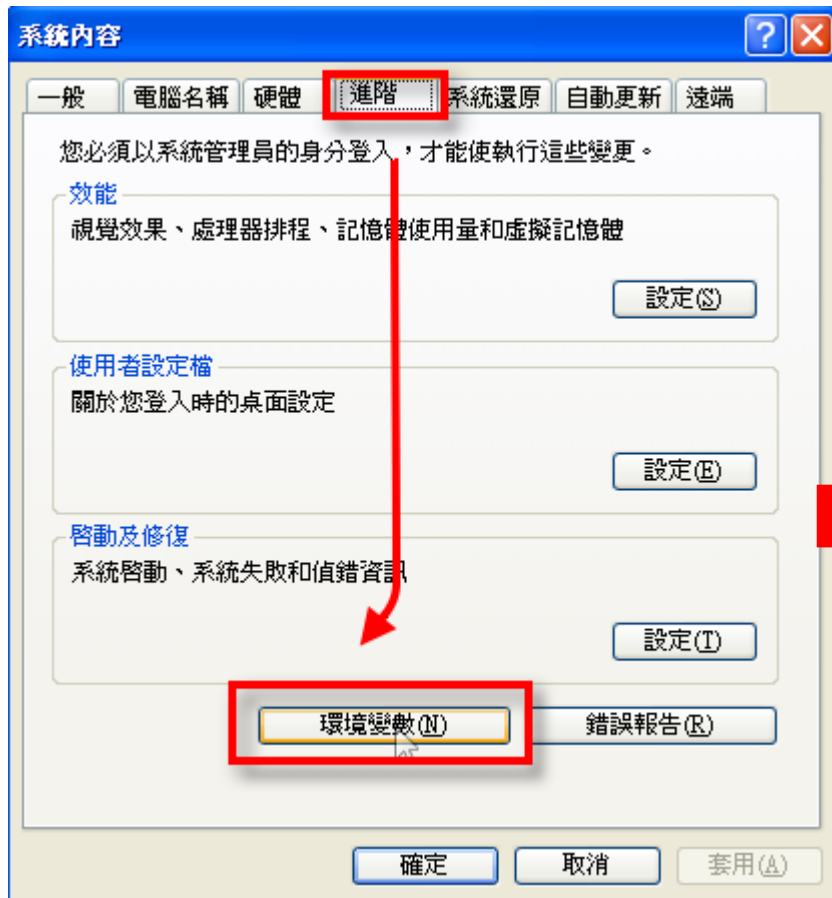
1. Download the latest JDK from Sun at <http://java.sun.com/javase/downloads/index.jsp>

2. After
envir

- C:\
- C:\

Java Platform, Standard Edition		
Java SE 7 This release includes new features such as small language changes for improved developer productivity, a new Filesystem API, support for asynchronous I/O, a new fork/join framework for multicore performance, improved support for dynamic and script languages, updates to security, internationalization and web standards and much more. Learn more ▶ "What Java Do I Need?" You must have a copy of the JRE (Java Runtime Environment) on your system to run Java applications and applets. To develop Java applications and applets, you need the JDK (Java Development Kit), which includes the JRE.	JDK Download JDK 7 Docs <ul style="list-style-type: none">▪ Installation Instructions▪ ReadMe▪ ReleaseNotes▪ Oracle License▪ Java SE Products▪ Third Party Licenses▪ Certified System Configurations	JRE Download JRE 7 Docs <ul style="list-style-type: none">▪ Installation Instructions▪ ReadMe▪ ReleaseNotes▪ Oracle License▪ Java SE Products▪ Third Party Licenses▪ Certified System Configurations

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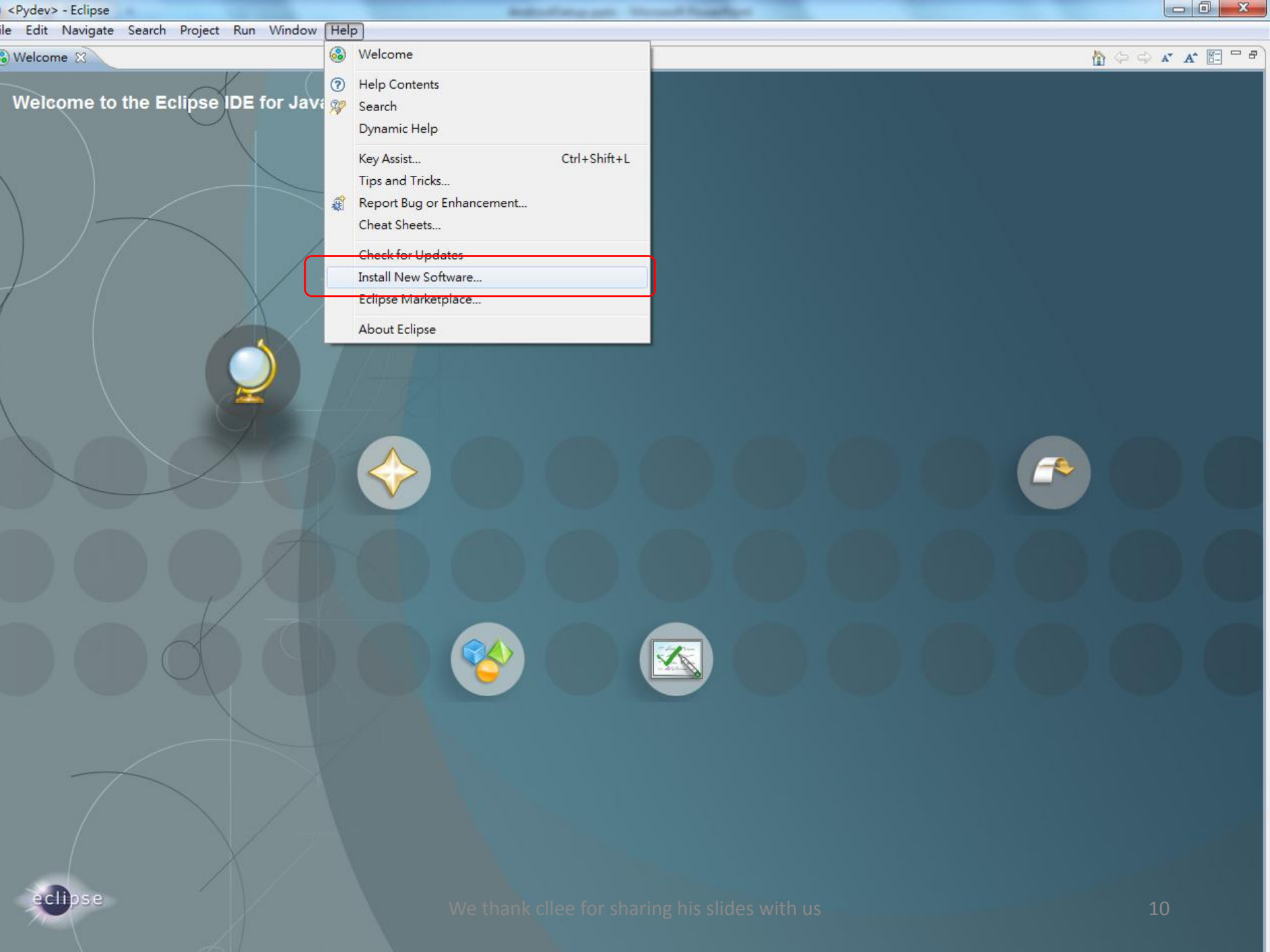


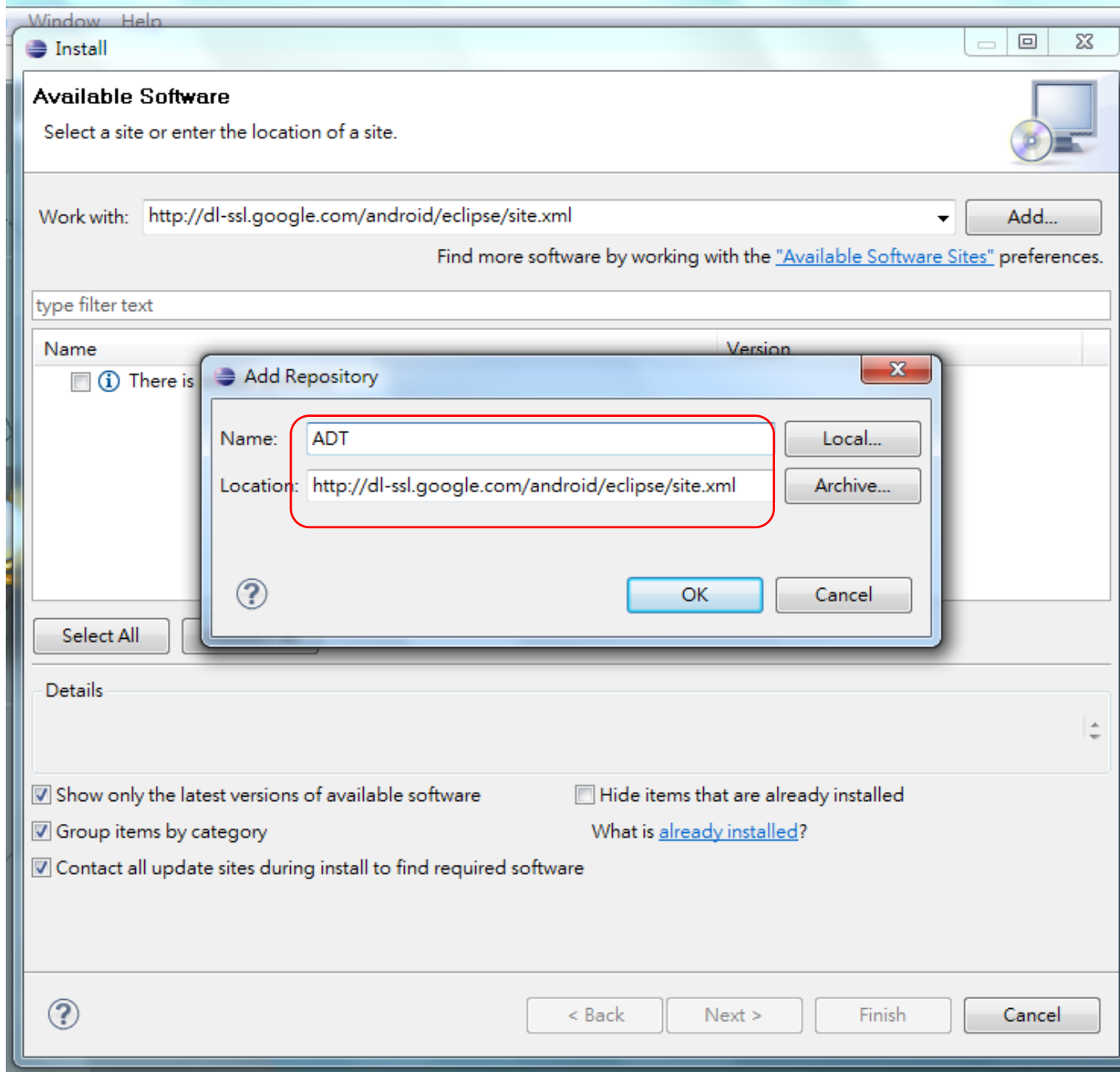
Install Eclipse

1. Download Eclipse at <http://www.eclipse.org/downloads/>
Eclipse 3.6(Helios), 3.7 (Indigo)
2. Uncompress the download file

Install ADT Plug-in on Eclipse

1. Open Eclipse
2. Select **Help > Install New Software**
3. In the Available Software dialog, click **Add....**
4. Enter a name for the remote site (for example, "Android Plugin"), and **Enter the location**
<https://dl-ssl.google.com/android/eclipse/>
Click **OK**.
5. Back in the Available Software view, you should now see "Developer Tools" added to the list. Select the checkbox next to Developer Tools, which will automatically select the nested tools Android DDMS and Android Development Tools. Click **Next**.
6. In the resulting Install Details dialog, the Android DDMS and Android Development Tools features are listed. Click **Next** to read and accept the license agreement and install any dependencies, then click **Finish**.
7. Restart Eclipse.





Available Software




Check the items that you wish to install.



Work with:

Find more software by working with the ["Available Software Sites"](#) preferences.

type filter text

Name	Version
<input checked="" type="checkbox"/>  Developer Tools	
<input checked="" type="checkbox"/>  Android DDMS	0.9.9.v201009221407-60953
<input checked="" type="checkbox"/>  Android Development Tools	0.9.9.v201009221407-60953

2 items selected

Details

Show only the latest versions of available software

Hide items that are already installed

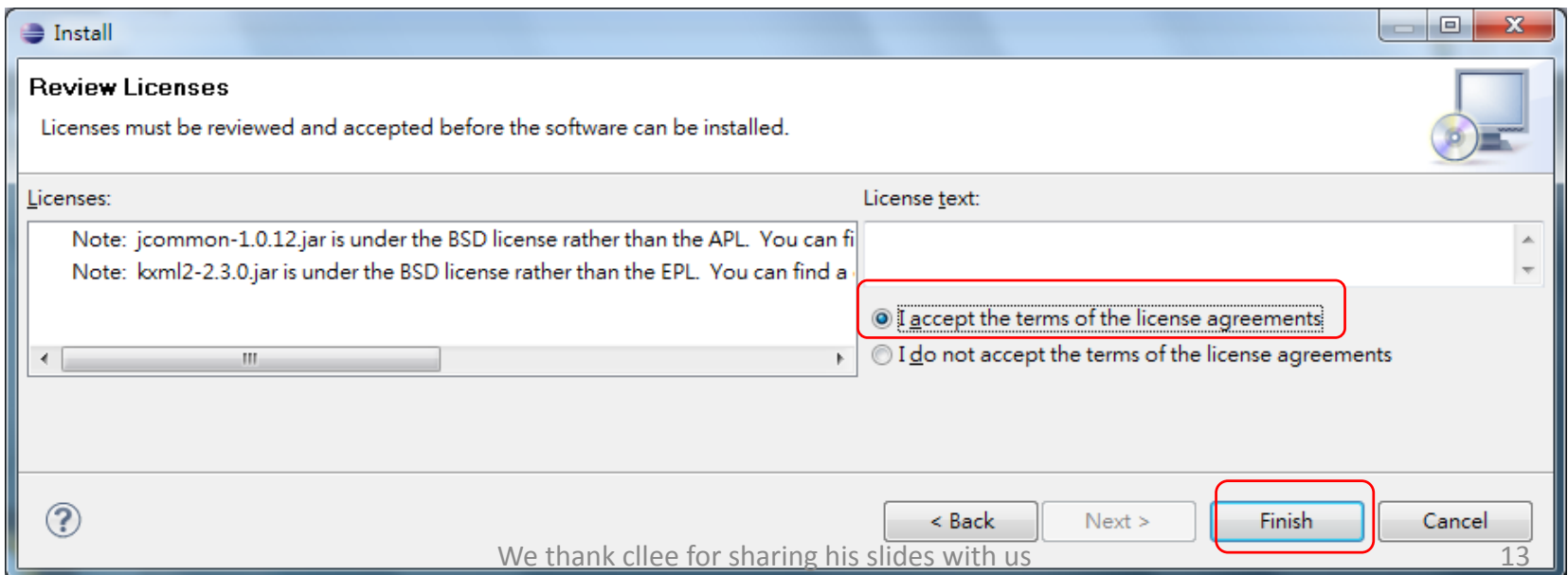
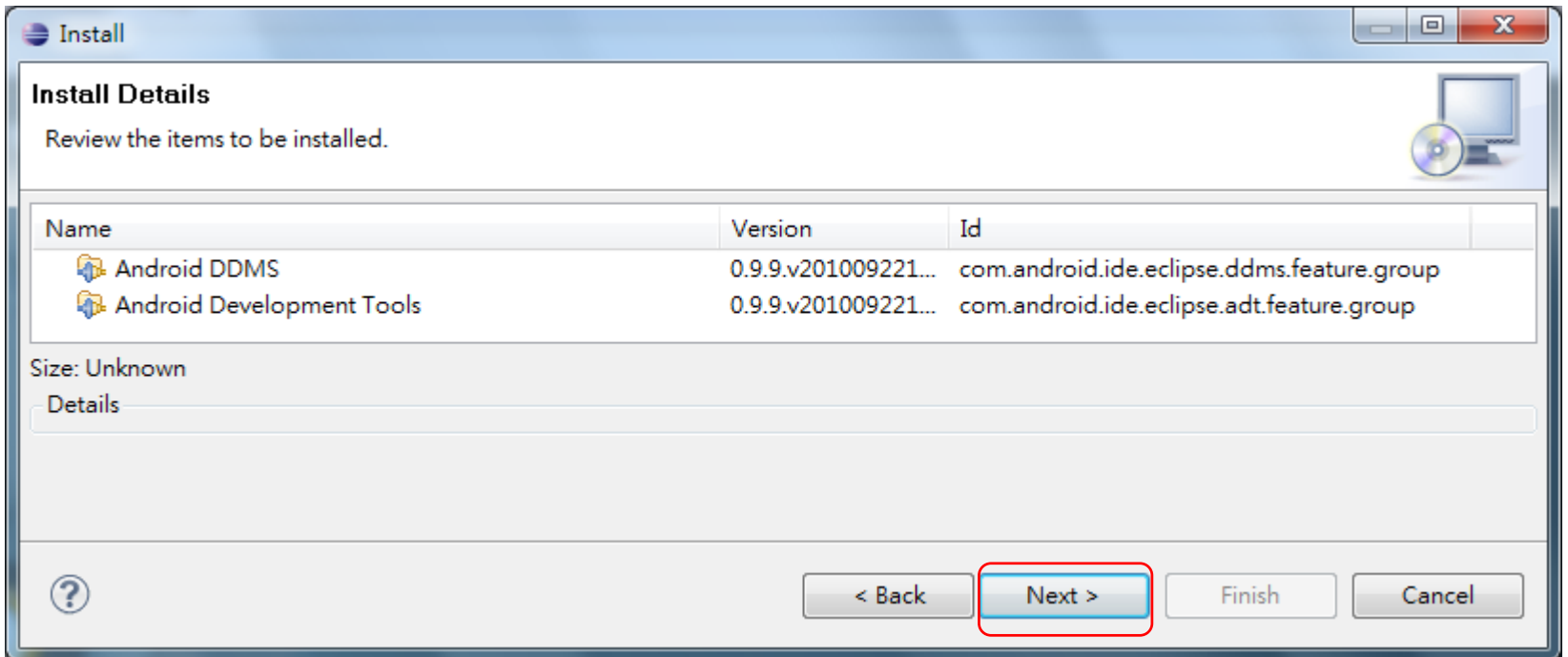
Group items by category

What is [already installed?](#)

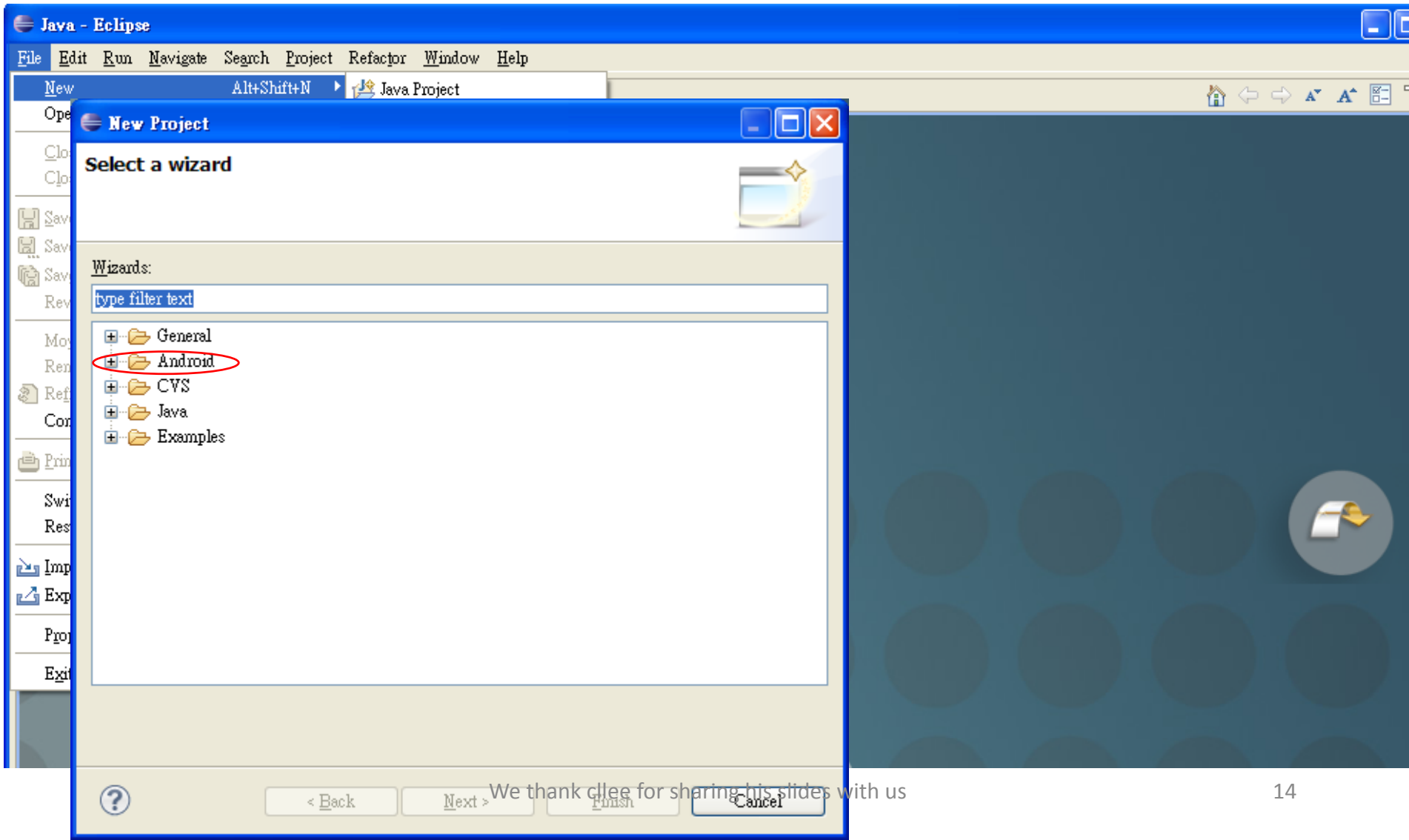
Contact all update sites during install to find required software



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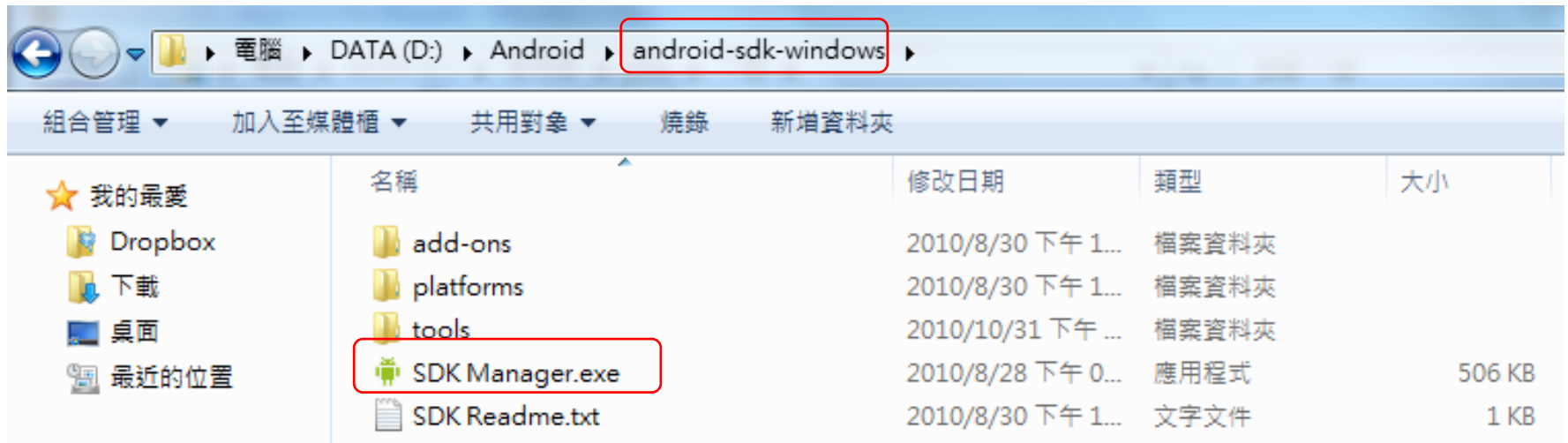
What's been installed?



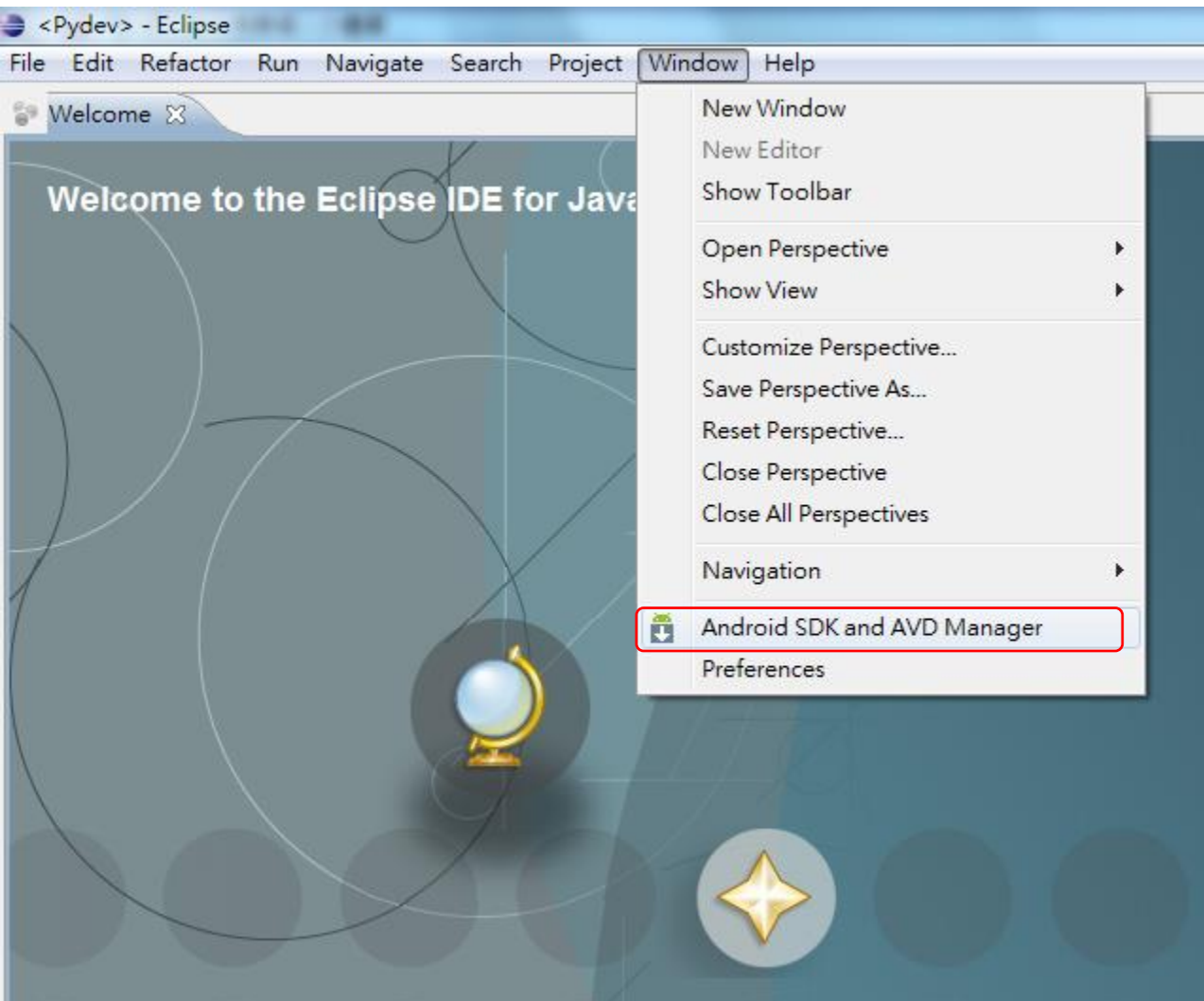
Download SDK

- Download SDK from <http://developer.android.com/sdk/index.html> and uncompress
- Use Android SDK and AVD Manager to manage your SDK versions
 1. Open SDK Manager.exe
 2. Installed Packages → Accept the package(s) you want to install → Install
 3. Close

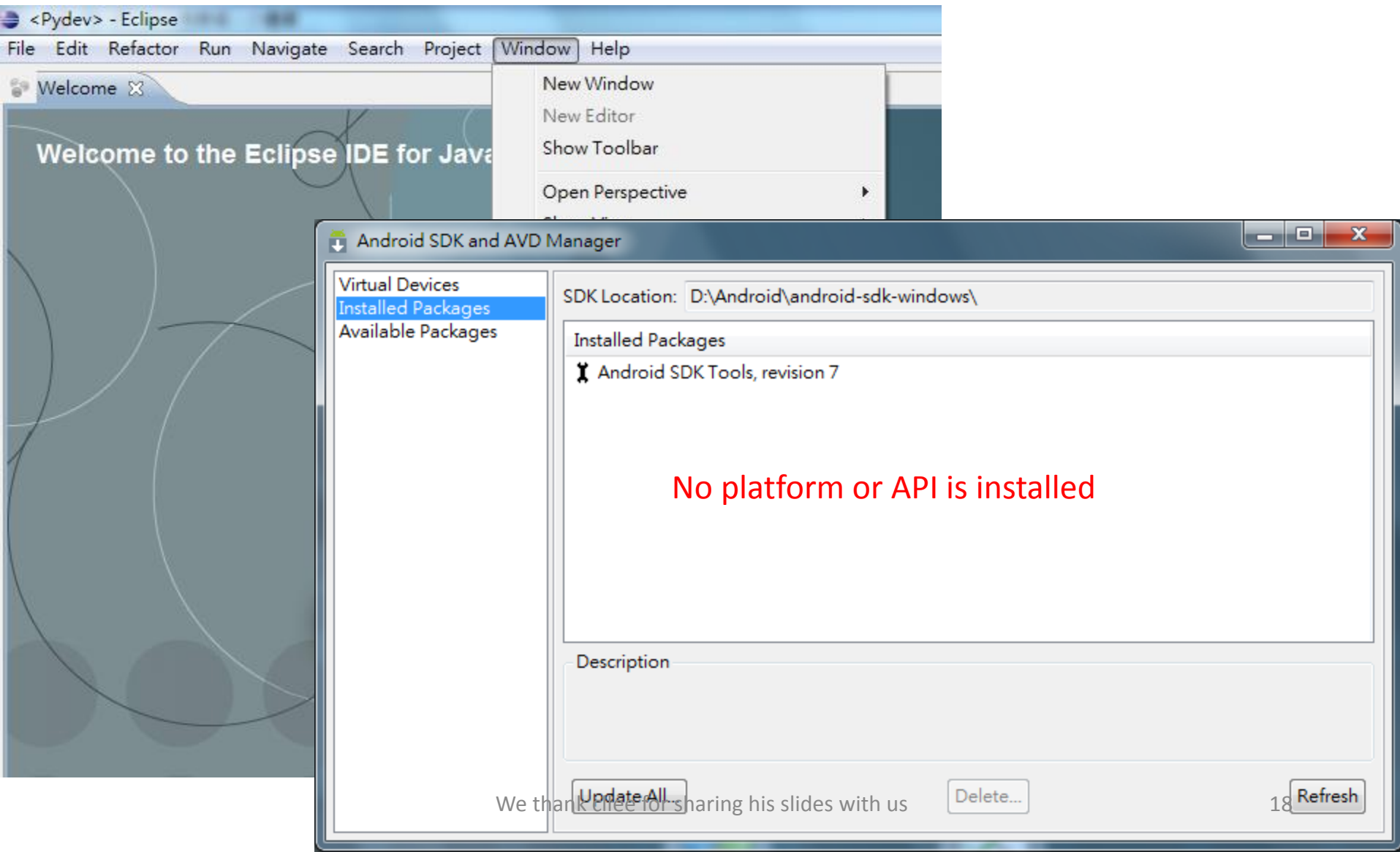
Extract and setup



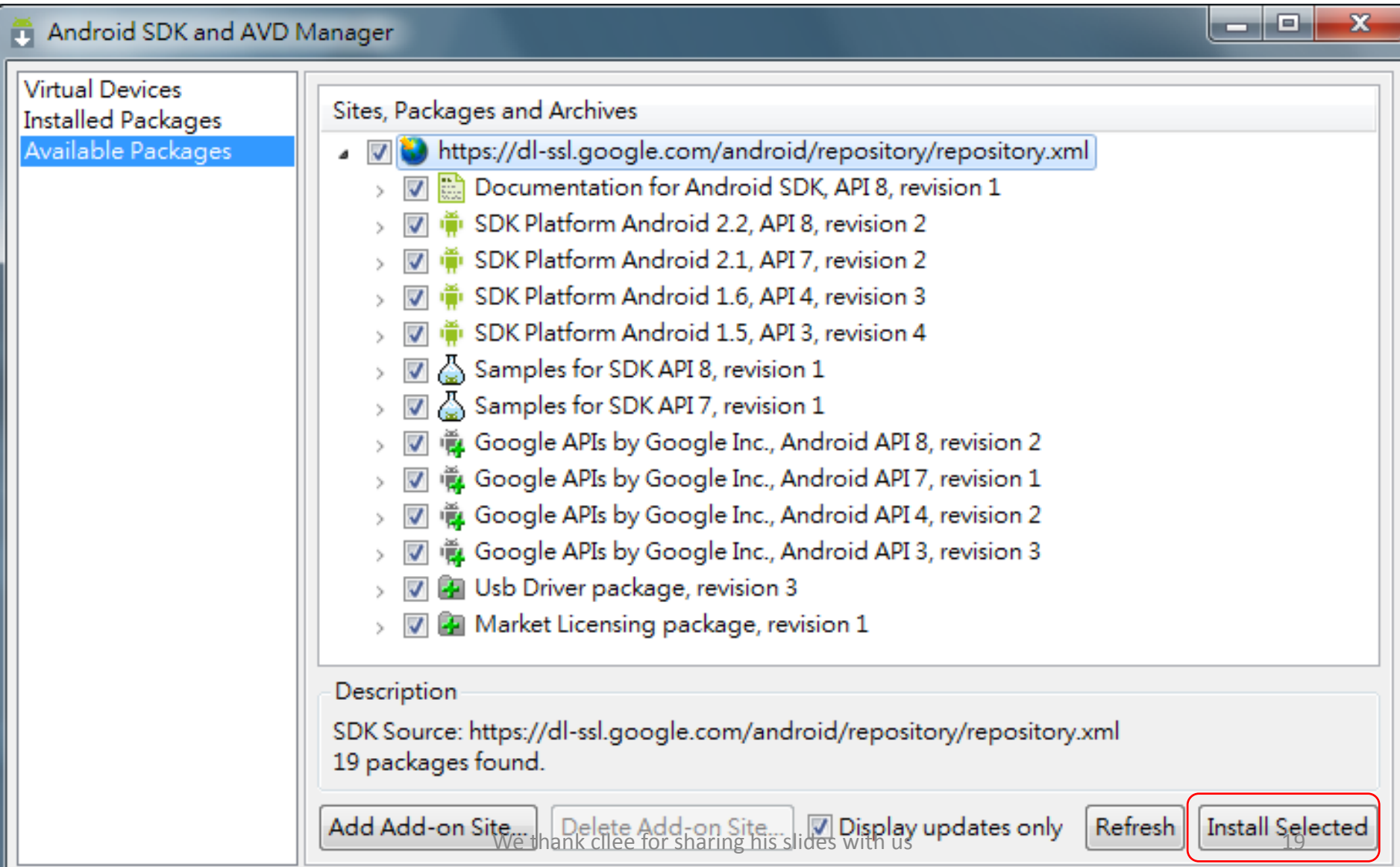
Android SDK manager



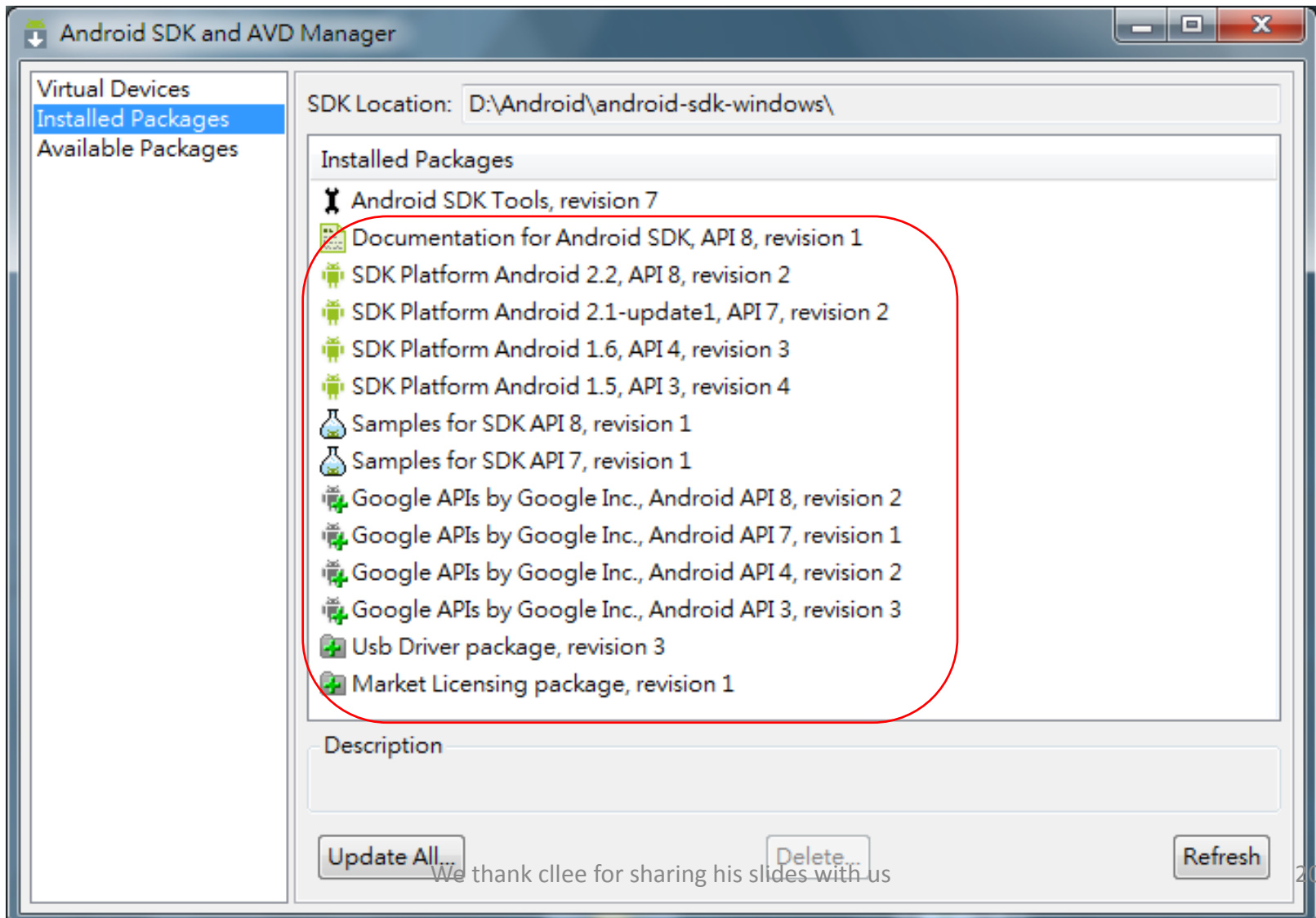
Android SDK manager



Select package to install



What's been installed?



Set up Android SDK

- Now modify your Eclipse preferences to point to the Android SDK directory:
 1. Select **Window** → **Preferences...** to open the Preferences panel
 2. Select **Android** from the left panel.
 3. For the *SDK Location* in the main panel, click **Browse...** and locate your downloaded SDK directory.
 4. **Apply** → **OK**.



Welcome to the Eclipse IDE for Java

- New Window
- New Editor
- Show Toolbar
- Open Perspective
- Show View
- Customize Perspective...
- Save Perspective As...
- Reset Perspective...
- Close Perspective
- Close All Perspectives

Preferences

type filter text

- General
- Android**
- Ant
- Help
- Install/Update
- Java
- Run/Debug
- Tasks
- Team
- Usage Data Collector
- Validation
- XML

Android

Android Preferences

SDK Location:

Note: The list of SDK Targets below is only reloaded once you hit 'Apply' or 'OK'.

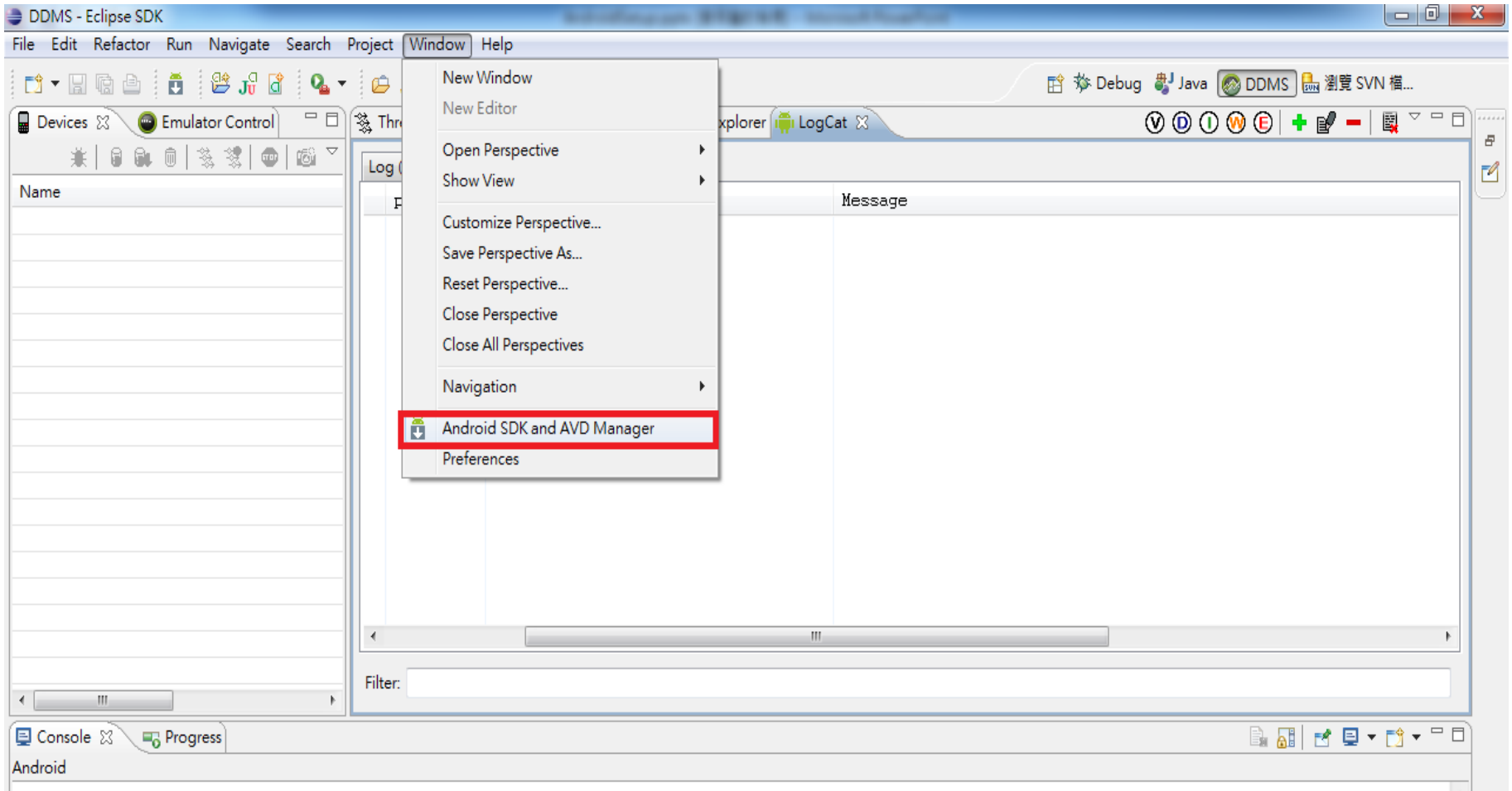
Target Name	Vendor	Platform	API Le...
Android 2.2	Android Open Source Project	2.2	8
Google APIs	Google Inc.	2.2	8

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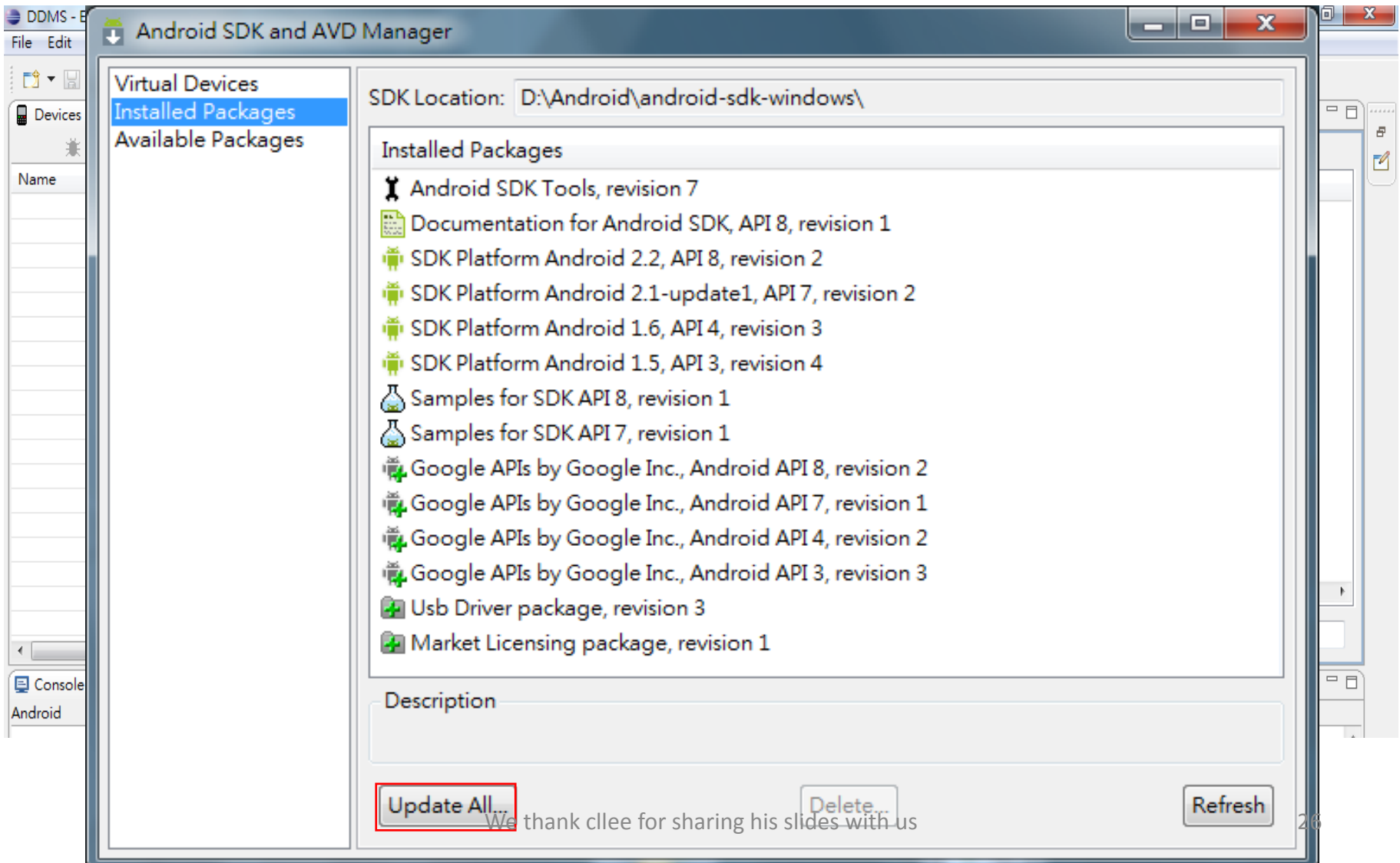
Update SDK

1. select Window → Android SDK and AVD Manager
2. Select **Available Packages** in the left panel. This will reveal all components currently available for download.
3. Select the components you'd like to install and click **Install Selected** .
4. Verify and accept the components you want and click **Install Accepted**.

Update SDK



Update SDK



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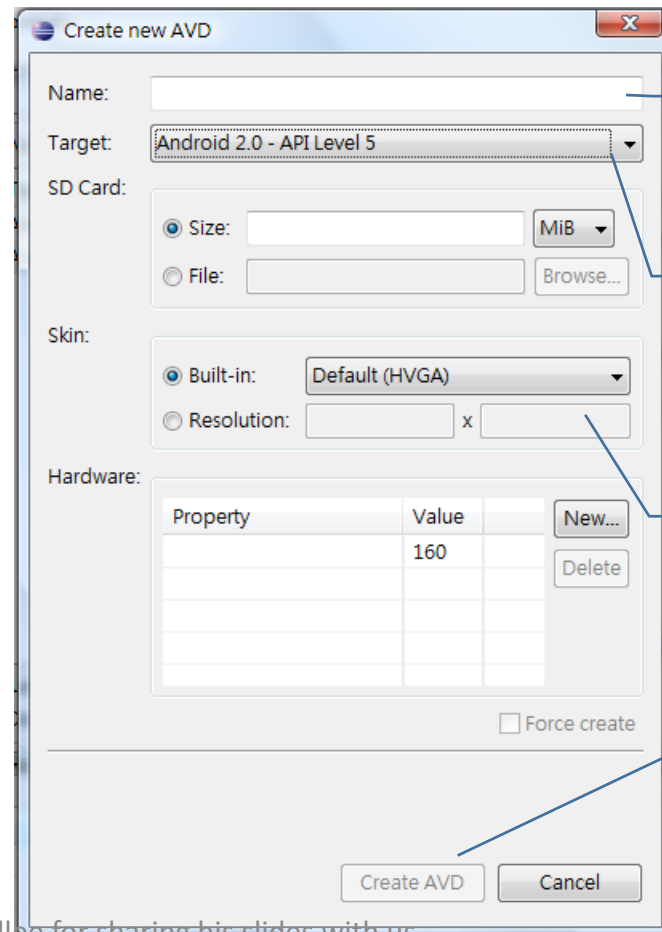
Hello Android

Creating Your First Android Activity

- Create an AVD
- Create a New Android Project
- Creating a Launch Configuration
- Running and Debugging Your Android Applications

Create an AVD

1. Create a virtual device
2. select Window → Android SDK and AVD Manager → Virtual Device → New
3. Enter a name and select a target → Create AVD



Virtual Device name

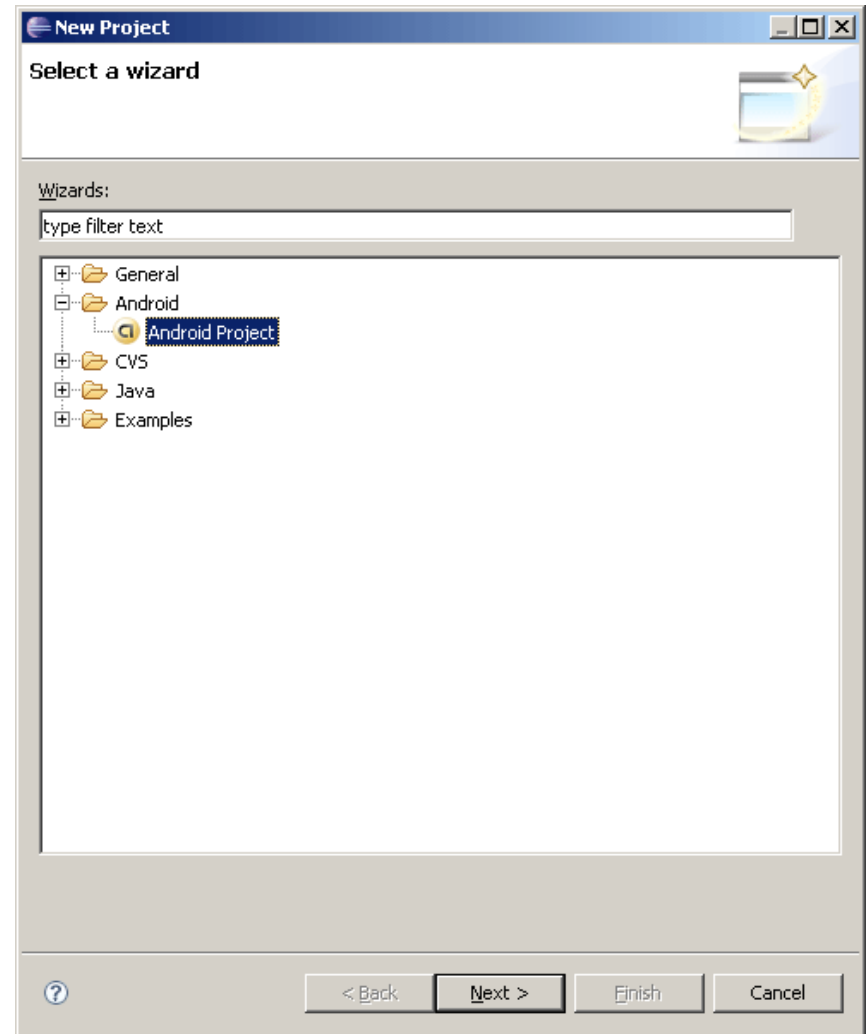
Select target

Select skin

Create → Finish

Create a New Android Project

1. From Eclipse, select **File > New > Project**.
2. Select "Android Project" and click **Next**.

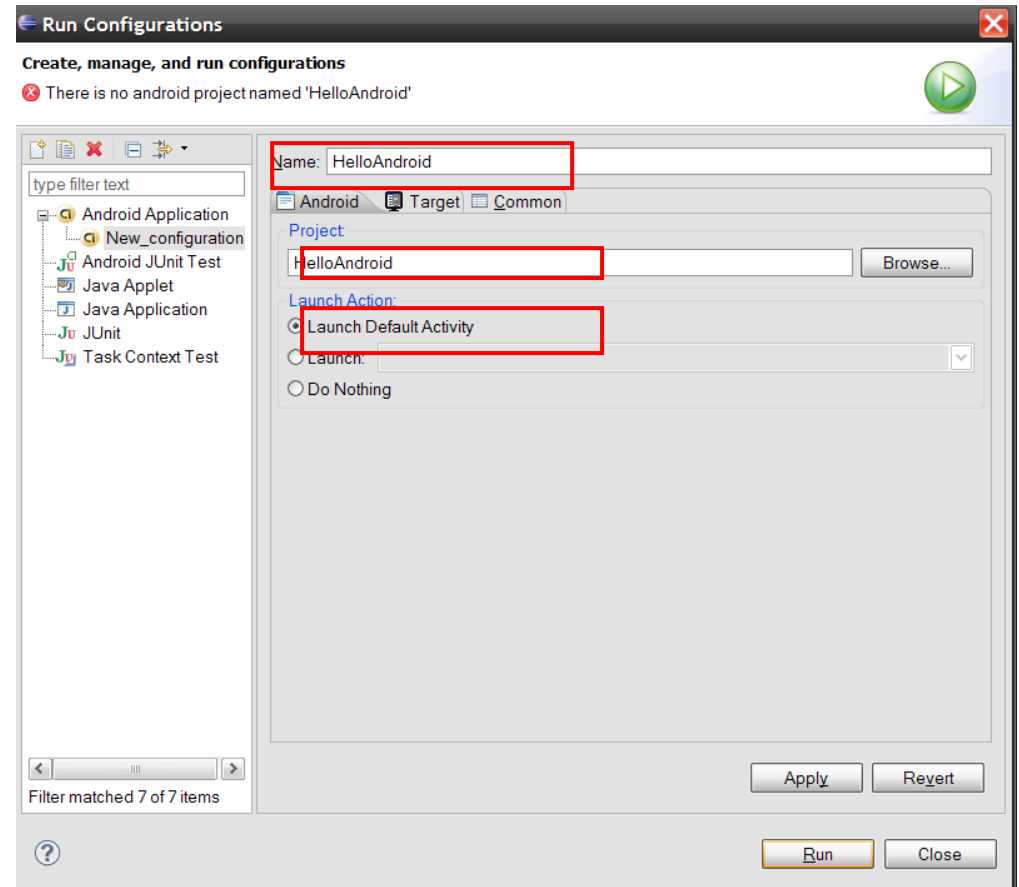


Create a New Android Project(Con't)

3. Fill in the project details with the following values: *Project name:* HelloAndroid
4. Build Target : Android 2.3
5. *Application name:* Hello, Android
6. *Package name:* tw.nthu.cs241001.helloandroid
7. *Create Activity:* HelloAndroid
8. Click **Finish**

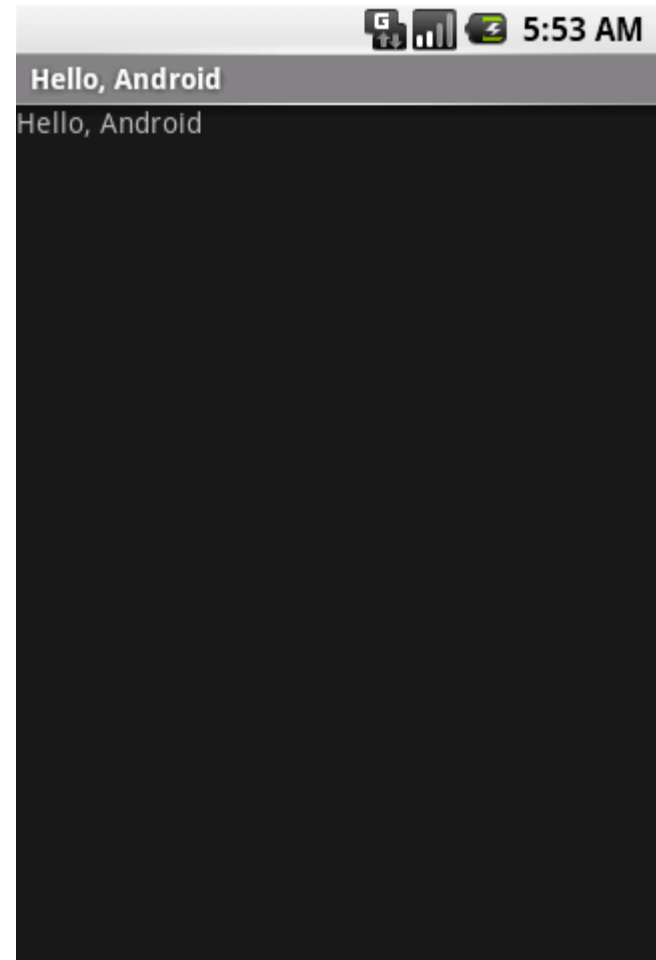
Creating a Launch Configuration

1. Select **Run** → **Run Configurations**
2. Right-click **Android Application** on the project type list, and select **New**.



Run

1. Select **Run As...** →
Android Application



List of Files for an Android Application

- **src** : This folder holds all the source code files for your application, inside the appropriate package subfolders.
- **gen** : This file holds all the automatic generation files

NO NEED TO MODIFY ANY FILE IN THIS DIRECTORY BY YOURSELF

- **res** : This folder holds all the *resources* for your application.
 - layout: describe the layout of this application interface
- **AndroidManifest.xml** : list the application provide functions

Hello World-HelloAndroid.java

```
package tw.nthu.cs241001.helloandroid;
import android.app.Activity;
import android.os.Bundle;

public class HelloAndroid extends Activity {
    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState){
        super.onCreate(savedInstanceState);
        setContentView(R.layout.main);
    }
}
```