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 <u>http://java.sun.com/javase/downloads/index.jsp</u>
- 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	Java Platform, Standar	d Edition	
	envir	Java SE 7 This <u>release</u> includes new features such as small language changes for improved developer productivity,	JDK	JRE <u> JRE</u> Download
	• 0:	new fork/join framework for multicore performance,	JDK 7 Docs	JRE 7 Docs
	• C:'	updates to security, internationalization and web standards and much more.	 Installation Instructions 	 Installation Instructions
		<u>Learn more</u> → "What Java Do I Need?" You must have a copy of the	ReadMe	ReadMe
	"What		 <u>ReleaseNotes</u> 	<u>ReleaseNotes</u>
		JRE (Java Runtime Environment) on your system to run Java applications and applets. To develop Java applications and applets, you need the JDK (Java	 <u>Oracle</u> <u>License</u> 	Oracle License
		Development Kit), which includes the JRE.	 Java SE Products 	 Java SE Products
			 <u>Third Party</u> <u>Licenses</u> 	 <u>Third Party</u> <u>Licenses</u>
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Install Eclipse

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

Install ADT Plug-in on Eclipse

- 1. Open Ecilpse
- 2. Select Help > Install New Software
- 3. In the Available Software dialog, click **Add...**.
- 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.



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Download SDK

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

Extract and setup

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Android SDK manager



Android SDK manager

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	SDK Platform Android 1.6, API 4, revision 3
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	Google APIs by Google Inc., Android API 7, revision 1
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	Google APIs by Google Inc., Android API 3, revision 3
	Usb Driver package, revision 3
	Market Licensing package, revision 1
	Description
	Update All We thank cliee for sharing his slides with us

Set up Android SDK

- Now modify your Eclipse preferences to point to the Android SDK directory:
 - 1. Select **Window** \rightarrow **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 \rightarrow OK.

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Update SDK

- 1. select Window \rightarrow 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

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		🐳 SDK Platform Android 1.6, API 4, revision 3				
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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
- Enter a name and select a target →
 Create AVD

Name:	[Virtual Device
Target:	Android 2.0 - API Lev	el 5	_	name
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Create a New Android Project

- From Eclipse, select File
 New > Project.
- Select "Android Project" and click Next.

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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 $\operatorname{Run} \to \operatorname{Run}$ Configurations
- 2. Right-click Android Application on the project type list, and select New.

🖶 Run Configurations		X
Create, manage, and run con Othere is no android project r	figurations amed 'HelloAndroid'	
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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
- AndroidMainifest.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);
 }
}