Android Developing -Environment Setup

Android Studio

• Download:

http://developer.android.com/sdk/index.html

- Requirement:
 - Java JDK 7 or higher version
 - 2 GB memory
 - Windows / Mac OS X (10.8.5)

Error – Environment Variable

 Find the path of the installed Java JDK and add it as a system environment variable

1



System Properties		Environment Variables	×		
Computer Name Hardware Advanced System Protection Remote You must be logged on as an Administrator to make most of these changes.	User variables for	Gerda			
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Create Your First Android Project



Your Project Name

🕭 Create New Project	:	×
New Android S	Project	
Configure vour	new project	
configure your		
<u>Application name:</u>	My First App	
<u>C</u> ompany Domain:	nmsl.example.com	
Package name:	com.example.nmsl.myfirstapp	dit
Project location:	C:\Users\nmsl\AndroidStudioProjects\MyFirstApp]
	Previous <u>N</u> ext Cancel Finish	

Select the API Level

Create New Project		
Select the form factors your app will ru	un on	
Different platforms require separate SDKs		
☑ Phone and Tablet Minimum SDK	API 19: Android 4.4 (KitKat) Lower API levels target more devices, but have fewer features available. By targeting API 19 and later, your app will run on approximately 24.5% of the devices that are active on the Google Play Store. Help me choose.	
Minimum SDK	API 21: Android 5.0 (Lollipop)	
🗌 Wear		
Minimum SDK	API 21: Android 5.0 (Lollipop)	
Glass (Not Installed)		
Minimum SDK	· · · · · · · · · · · · · · · · · · ·	
	Previous <u>N</u> ext	Cancel Finish

Empty Activity



Your Activity Name

🕭 Create New Project			
Choose options for your new file			
(Creates a new blank activ	vity with an action bar.	
	Activity Name:	MyActivity	
	Layout Name:	activity_my	
	Title:	MyActivity	
	Menu Resource Name:	menu_my	
Blank Activity			
	The name of the activity	class to create	
			Previous Next Cancel <u>Finish</u>

Create Your Emulator

ects\MyFirstApp] -	app]\app\src\main\res\layout\activity_my.xml - Android Studio 1.0.1
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Horizonta /ertical)	Groovy Console Image: Android Image: Open Terminal Image: Open Terminal
	Sync Project with Gradle Files
-	Hello world! ✓ Enable ADB Integration

Cannot See AVD Manager?

 If you cannot see the option of AVD Manager, please change the permission of your android studio folder

Modify Your Permission to Launch AVD Manager

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Launch the Default Emulator

- Please run the default Nexus 5 Emulator using AVD Manager
- If you would like to create your own emulator, you need to update your SDK packages first.

SDK Manager

• Update your SDK package using SDK Manager

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 Compile and run your project and you can see the message on your virtual Nexus 5!

Android Developing - Your First App

Android Activity

- Interact with users
- Visual User interface
- Hierarchy of views
- One or several activities in an application

Hierarchy of View

ViewGroup

View

View

- View Group:
 - Invisible view container
 - How the child views are laid out

ViewGroup

View

- View:
 - Visible
 - E.g., Button, Text ...

View

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Activity Life Cycle

- Activities are managed as an activity stack. When a new activity is started, it is placed on the top of the stack and becomes the running activity
- States:
 - Active / running: activity in the foreground
 - Pause: An activity has lost focus but is still visible
 - Stopped: It's no longer visible but still retains all state member information
 - Finish / Kill

Android Manifest

- The components used in an android application should be declared
 - Activity
 - permission
 - Intent
 - ...

What is Intent

- Intent is like an even sent by user
- Intent should
 - Specify the receiving component
 - Or have a intent-filter to allow your android system to know this intent

Manifest Example

<manifest xmlns:android=http://schemas.android.com/apk/res/android



</manifest>

Your First App

- Edit Text
- Button
 - Listener
 - Send Message
 - Create Second Activity

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Steps

- Create a linear layout
- Add your view objects into the layout
- Create the resources used in the view objects
- Create the second activity
- Create the function to do interaction while we push the button

Linear Layout Edit your activity_my.xml

<?xml version="1.0" encoding="utf-8"?>

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android" xmlns:tools="http://schemas.android.com/tools" android:layout_width="match_parent" android:layout_height="match_parent" android:paddingLeft="@dimen/activity_horizontal_ma android:paddingRight="@dimen/activity_horizontal_margin" android:paddingTop="@dimen/activity_vertical_margin" android:paddingBottom="@dimen/activity_vertical_margin" tools:context=".MainActivity" android:orientation="horizontal">

< <u>EditText</u> android:id="@+id/edit_message android:layout_weight="1"	The default value of weight of each view is 0
android:layout_width="0dp"	
android:layout_height="wrap_content" android:hint="@string/edit_message" />	Missing the String
<button< td=""><td>The width and height can just</td></button<>	The width and height can just
android:layout width="wrap content"	contain the view
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Add String Resources

• Edit string.xml

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
<string name="app_name">My First App</string>
<string name="edit_message">Enter a message</string>
<string name="button_send">Send</string>>
</resources>
```



Create the Second Activity

2	My Application - [C:\Use	ers\yibin\AndroidstudioProjects\My	yApplication2] - [app	o]\app\src\main\java\com\e	ample\nmsl\myapplication\MainActivity.java - Android Stud	dio 1.5.1 🕞 💼	×
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Create the Second Activity

New Android Activity Customize t	he Activity	
÷	Creates a new en	npty activity
	Activity Name:	DisplayMessageActivity Generate Layout File
	Layout Name:	activity_display_message Launcher Activity
	Package name:	com.example.nmsl.myapplication
Empty Activity		
	The name of the	activity class to create
		Previous Next Cancel <u>Finish</u>

Starting Another Activity

- Link your button with a function to do something
- Edit activity_m.xml

<Button

android:layout_width="wrap_content" android:layout_height="wrap_content" android:text="@string/button_send" android:onClick="sendMessage" />

The name of your function

• Edit MyActivity.java to add the function

Create the function

```
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
                                          Press ALT+Enter at un-imported class
import android.widget.EditText;
                                           words (e.g., Intent) can import the
                                              needed classes automatically
public void sendMessage(View view)
    // Do something in response to button
    Intent intent = new Intent(this, DisplayMessageActivity.class);
    EditText editText = (EditText) findViewById(R.id.edit message);
    String message = editText.getText().toString();
    intent.putExtra(EXTRA MESSAGE, message);
    startActivity(intent);
```

Create a Unique Key

public void sendMessage(View view) {

}

}

// Do something in response to button
Intent intent = new Intent(this, DisplayMessageActivity.class);
EditText editText = (EditText) findViewById(R.id.edit_message);
String message = editText.getText().toString();
intent.putExtra(EXTRA_MESSAGE, message);
startActivity(intent);

public class MainActivity extends AppCompatActivity {
 public final static String EXTRA_MESSAGE = "com.mycompany.myfirstapp.MESSAGE";

Create a unique key for the message put by the intent. We then get the message by this key in the second activity (next page)

Receive the Intent

- Edit DisplayMessageActivity.java
 - Get the message from the intent
 - Create a textview to show the message

```
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    Intent intent = getIntent();
    String message = intent.getStringExtra(MyActivity.EXTRA_MESSAGE);
    TextView textView = new TextView(this);
    textView.setTextSize(40);
    textView.setText(message);
    setContentView(textView);
  }
```

