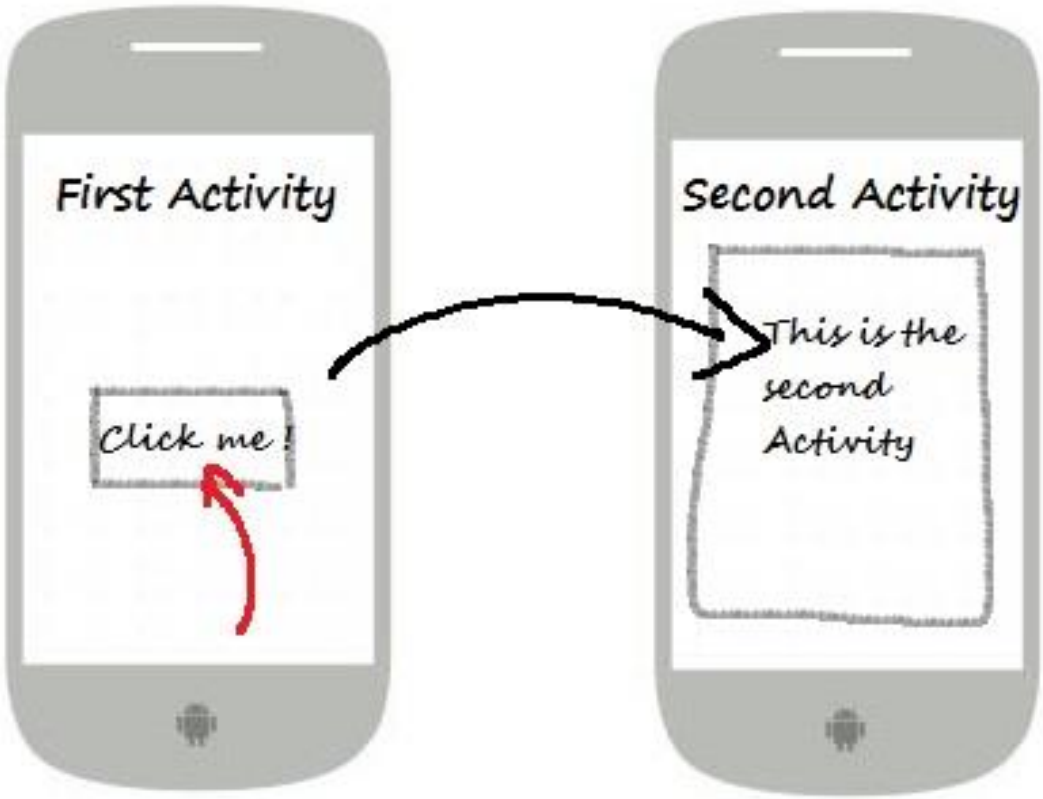
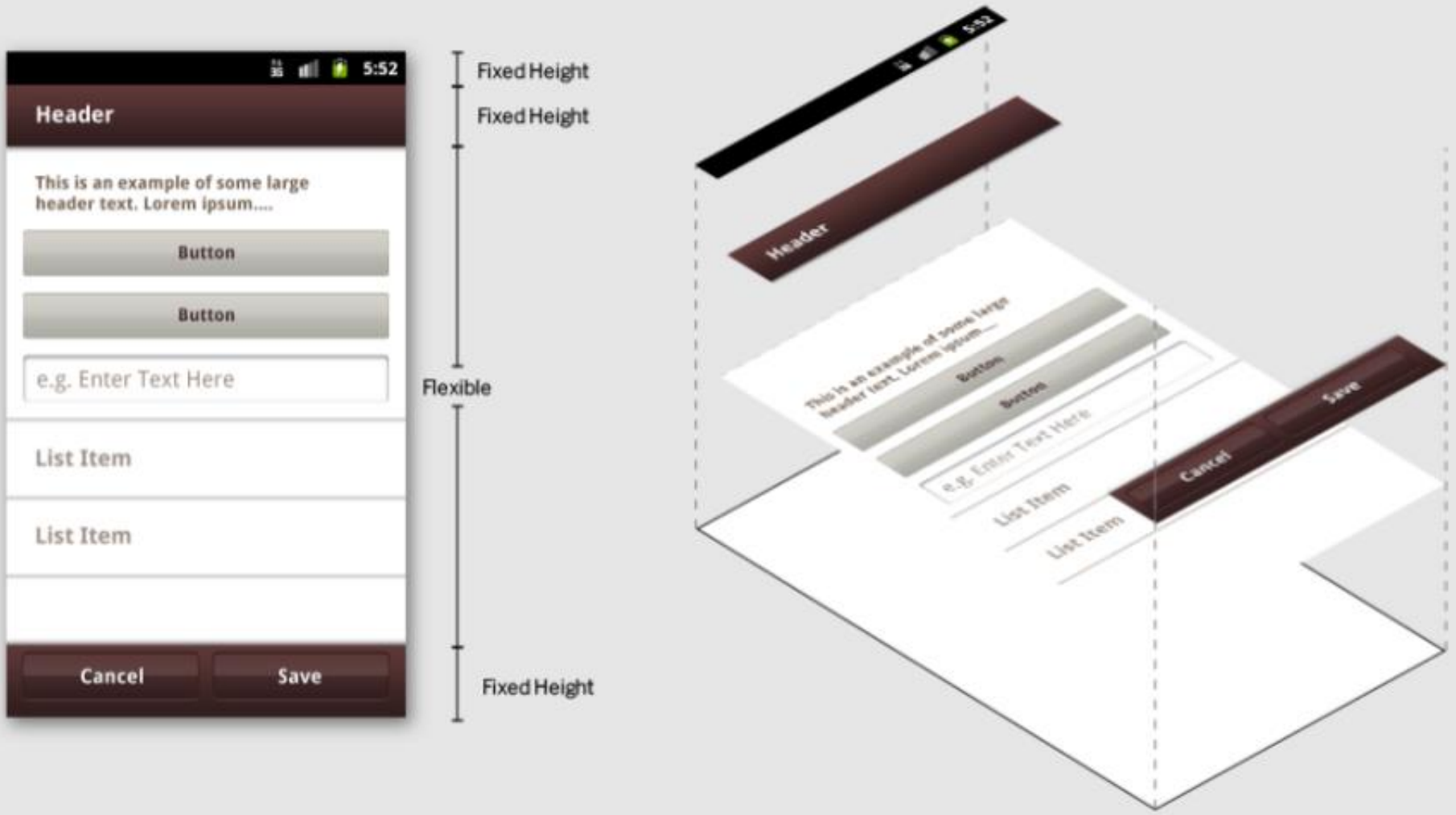
Android Programming 3

Adding new Activity




5:52
Header
This is an example of some large header text. Lorem ipsum....
Button
Button
e.g. Enter Text Here
List Item
List Item
Cancel
Save
Fixed Height
Fixed Height
Flexible
Fixed Height
Header
Cancel
Save
List Item
List Item

Activity: Layout + Java code

Presentation

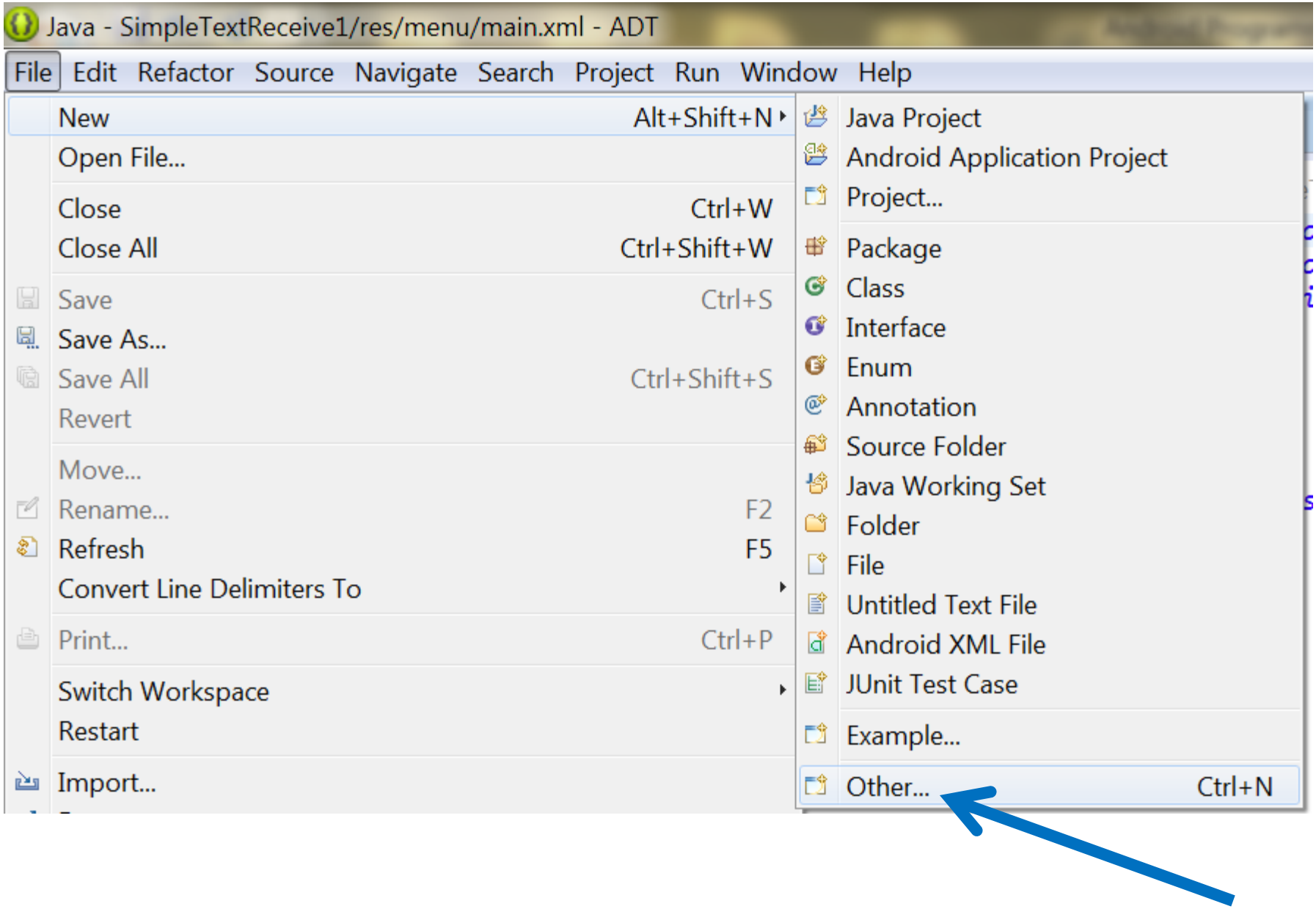
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    >
<TextView
    android:layout_width="fill_parent"
    android:textSize="40px"
    android:gravity="
    android:background=
    />

<ImageView
    android:src="@drawable/australia"
    android:id="@+id/ImageView1"
    android:layout_height="wrap_content"
    android:scaleType="centerInside"
    android:layout_width="match_parent"
    android:layout_weight="1"
    android:background="#0021f00"
    />
```

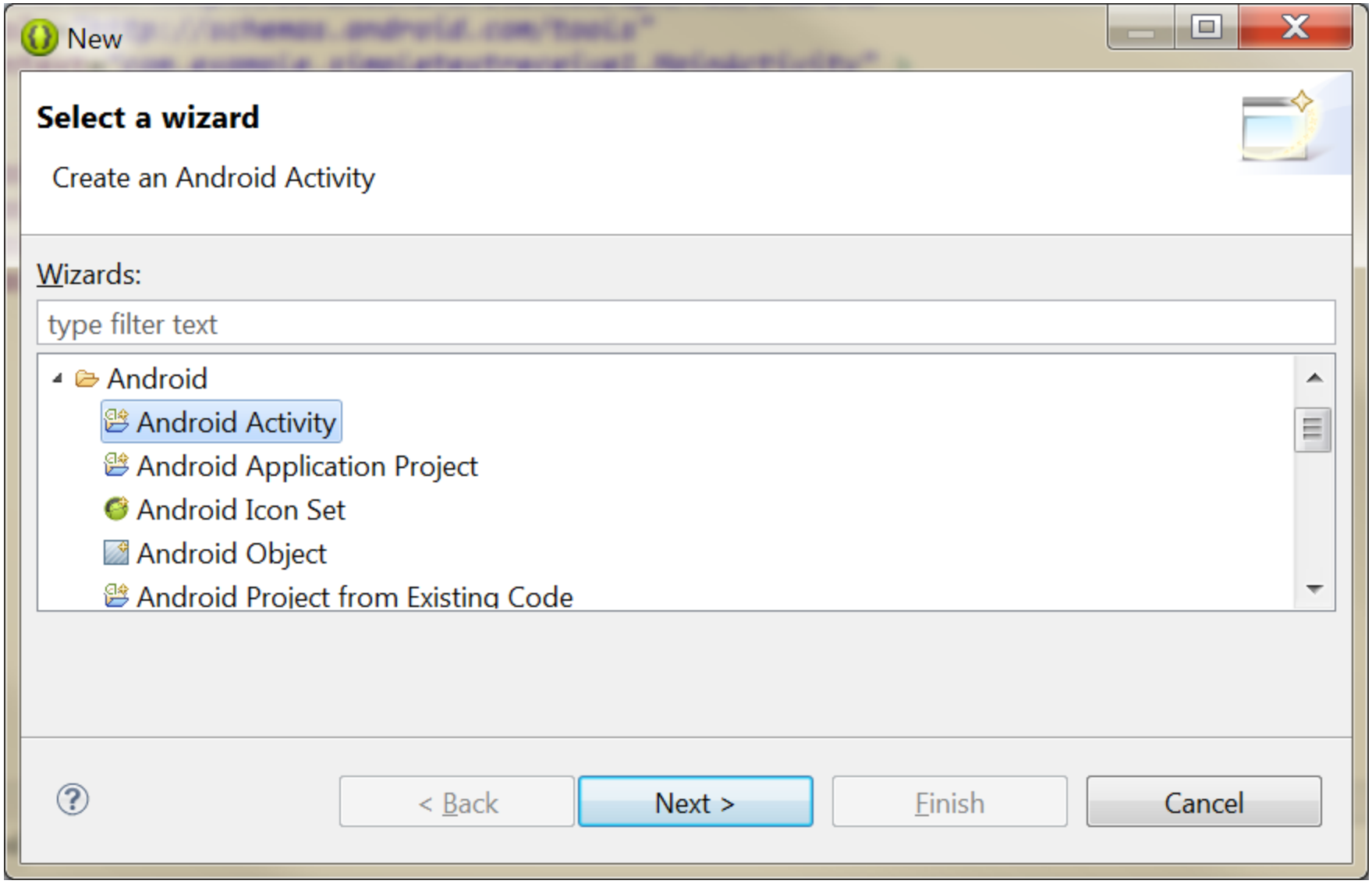
UI Layout Definition (XML File)

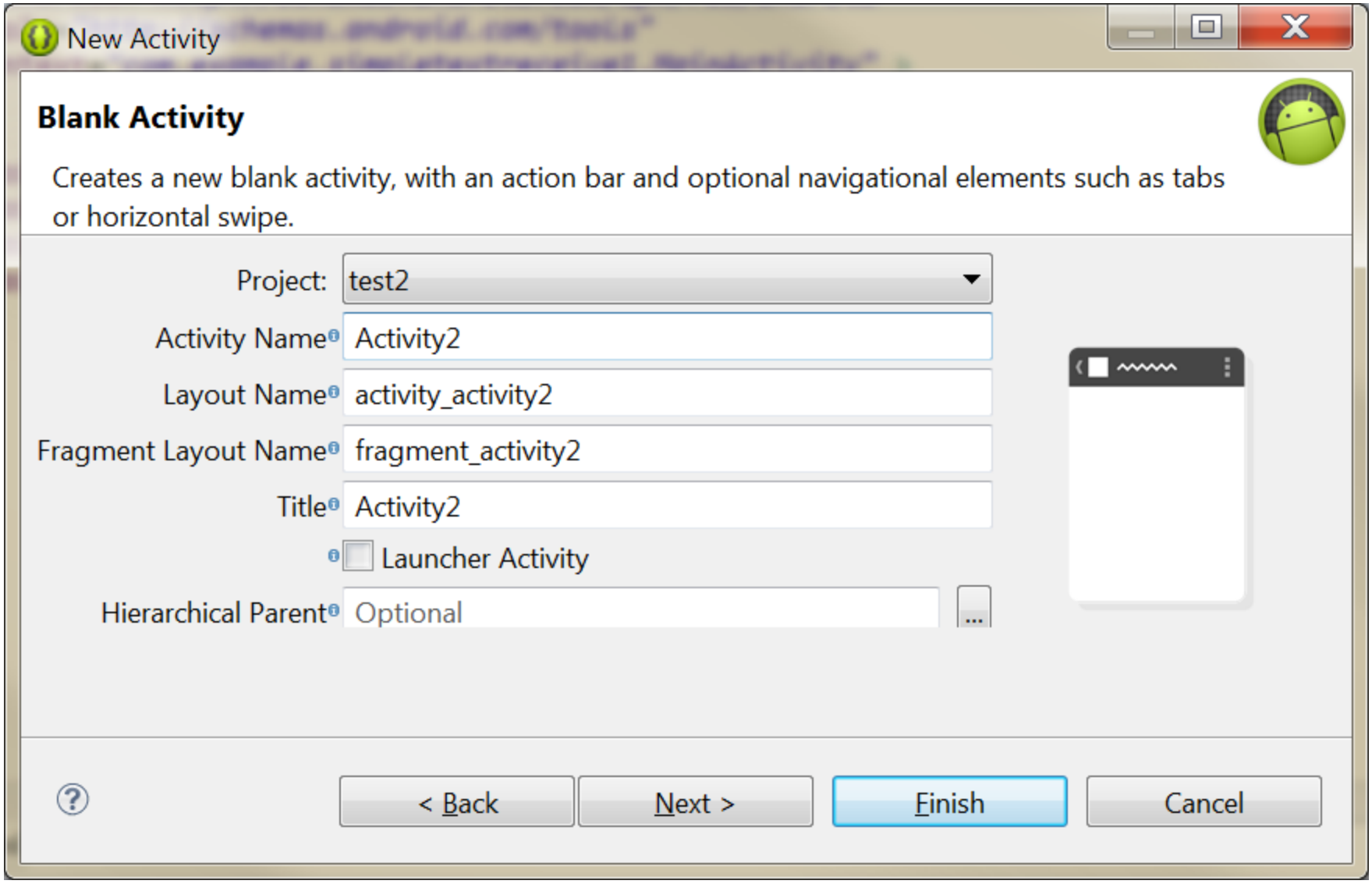
Functionality

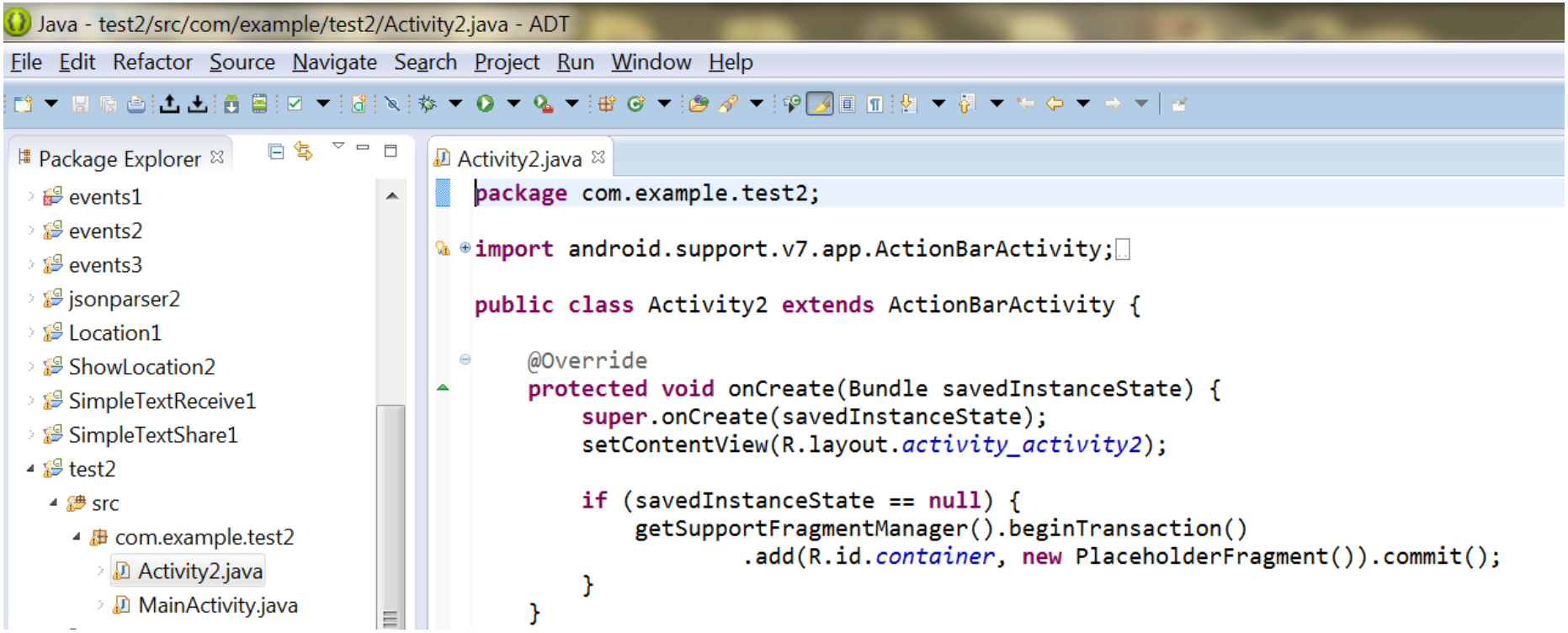
```
public class ImageActivity extends Activity
{
    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.main);
    }
}
```

Java Code


Java - SimpleTextReceive1/res/menu/main.xml - ADT
File Edit Refactor Source Navigate Search Project Run Window Help
New Alt+Shift+N
Open File...
Close Ctrl+W
Close All Ctrl+Shift+W
Save Ctrl+S
Save As...
Save All Ctrl+Shift+S
Revert
Move...
Rename... F2
Refresh F5
Convert Line Delimiters To
Print... Ctrl+P
Switch Workspace
Restart
Import...
Java Project
Android Application Project
Project...
Package
Class
Interface
Enum
Annotation
Source Folder
Java Working Set
Folder
File
Untitled Text File
Android XML File
JUnit Test Case
Example...
Other... Ctrl+N

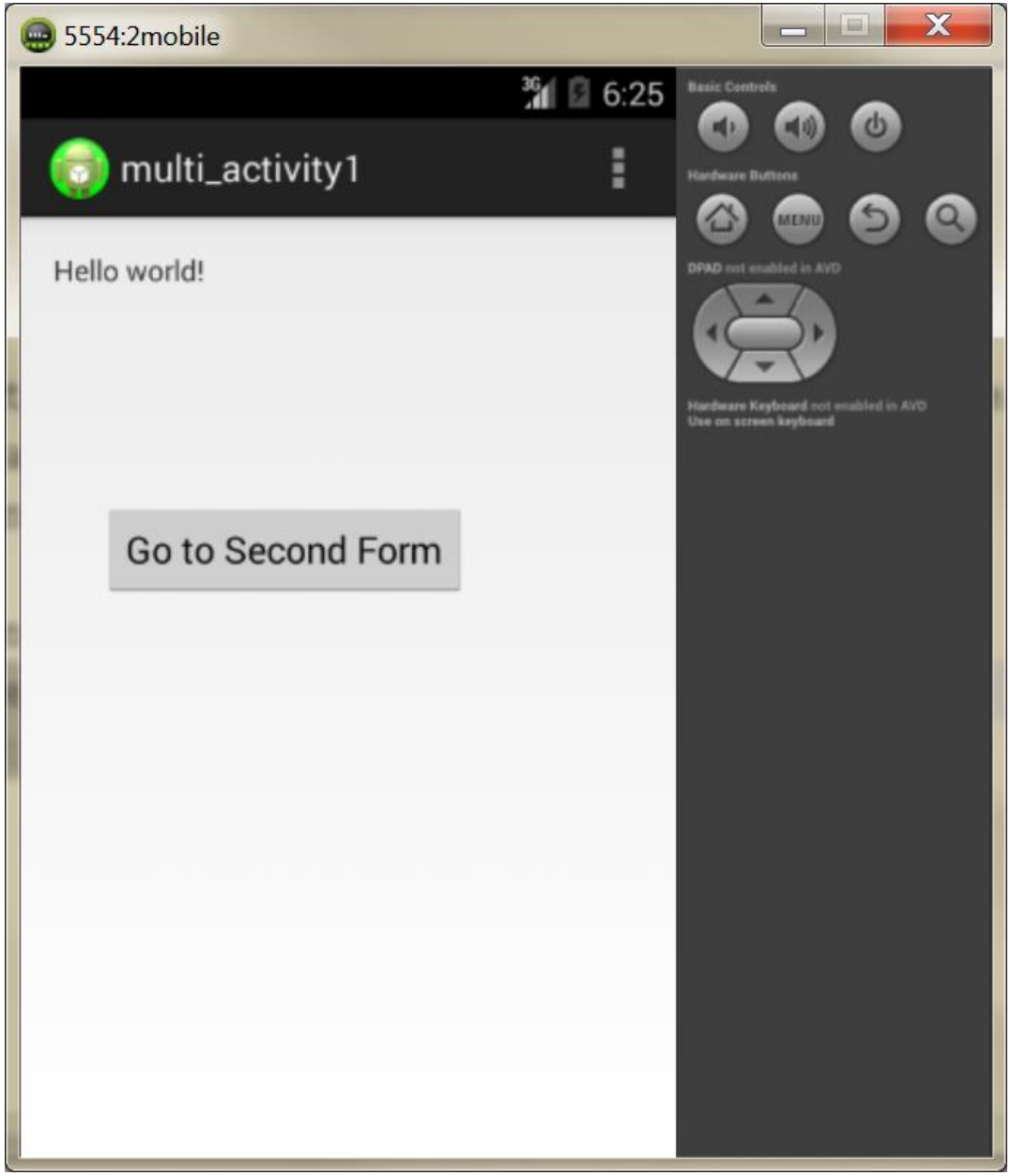

New
Select a wizard
Create an Android Activity
Wizards:
type filter text
Android
Android Activity
Android Application Project
Android Icon Set
Android Object
Android Project from Existing Code
< Back
Next >
Finish
Cancel

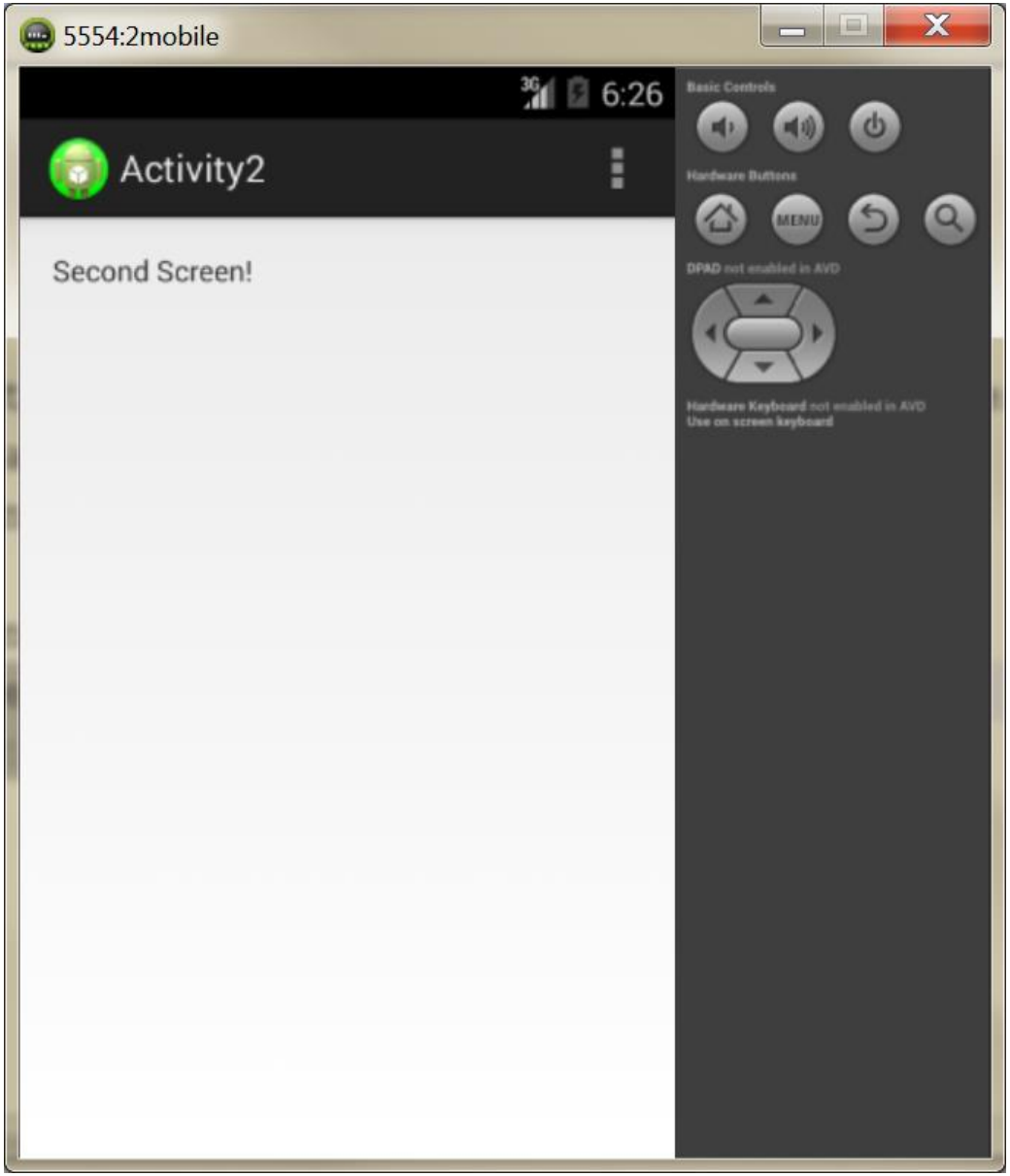

New Activity
Blank Activity
Creates a new blank activity, with an action bar and optional navigational elements such as tabs or horizontal swipe.
Project:
test2
Activity Name
Activity2
Layout Name
activity_activity2
Fragment Layout Name
fragment_activity2
Title
Activity2
Launcher Activity
Hierarchical Parent
Optional
...
< Back
Next >
Finish
Cancel


Java - test2/src/com/example/test2/Activity2.java - ADT
File Edit Refactor Source Navigate Search Project Run Window Help
Package Explorer
events1
events2
events3
jsonparser2
Location1
ShowLocation2
SimpleTextReceive1
SimpleTextShare1
test2
src
com.example.test2
Activity2.java
MainActivity.java
Activity2.java
package com.example.test2;
import android.support.v7.app.ActionBarActivity;
public class Activity2 extends ActionBarActivity {
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_activity2);
if (savedInstanceState == null) {
getSupportFragmentManager().beginTransaction()
.add(R.id.container, new PlaceholderFragment()).commit();
}
}

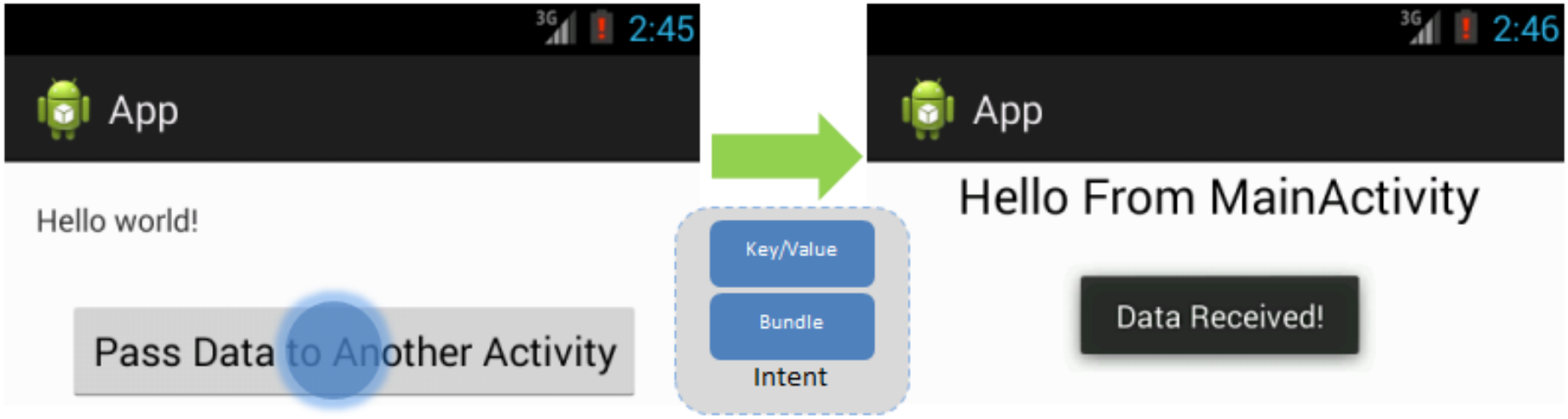
Java snippet to start new Activity

```
public void secondActivity(View view) {
    Intent intent = new Intent(this, Activity2.class);
    startActivity(intent);
}
```


5554:2mobile
6:25
multi_activity1
Hello world!
Go to Second Form
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard


5554:2mobile
6:26
Activity2
Second Screen!
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard

Start new Activity and pass value!

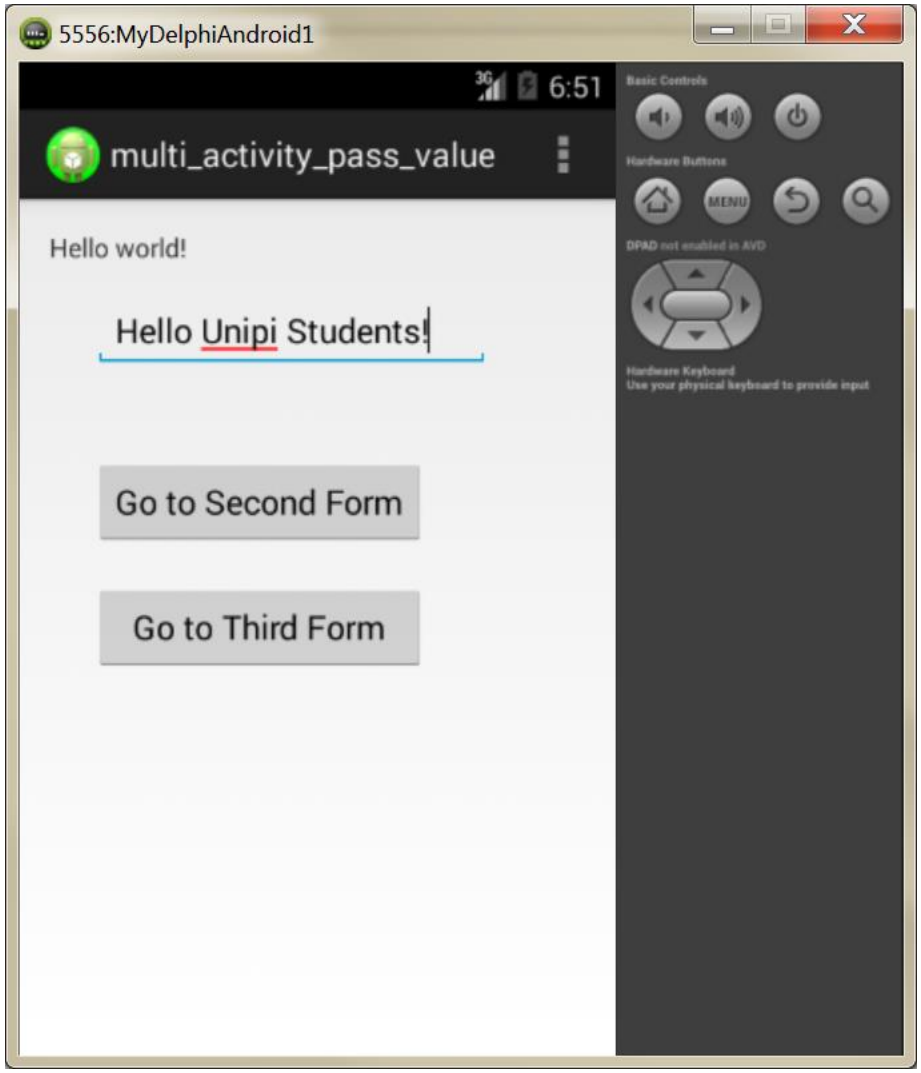


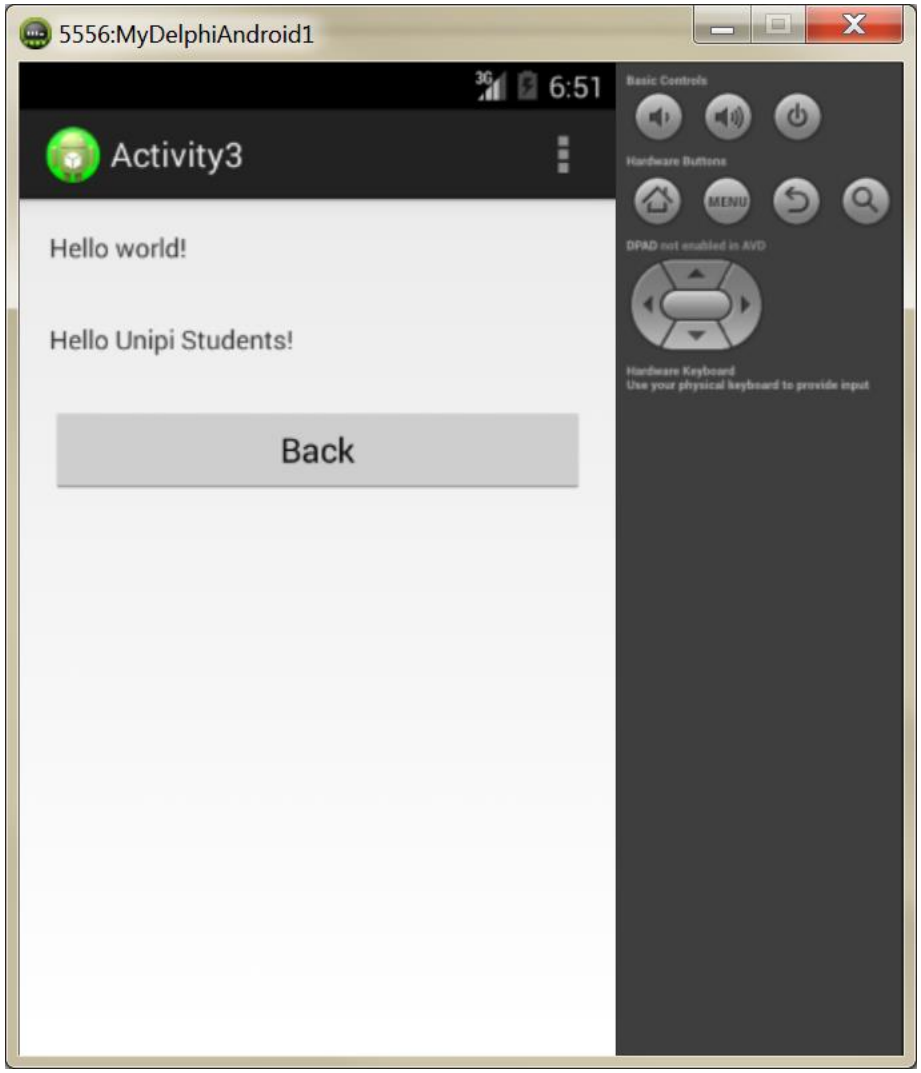
Send a **bundle** with data

```
public void thirdActivity(View view) {
    EditText myedittext=(EditText)findViewById(R.id.editText1);
    Intent intent = new Intent(this, Activity3.class);
    intent.putExtra("str1", myedittext.getText().toString());
    startActivity(intent);
}
```

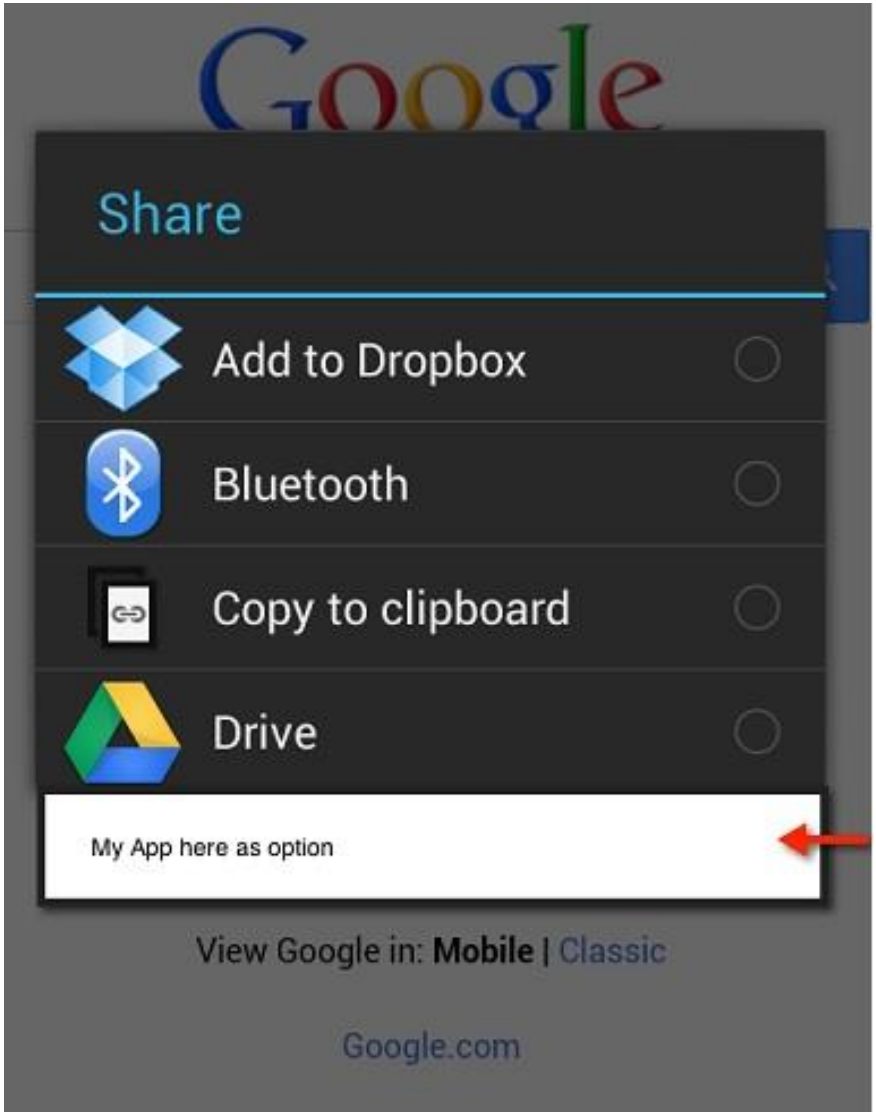
Receive the bundle from the new Activity

```
@Override
public View onCreateView(LayoutInflater inflater, ViewGroup container,
        Bundle savedInstanceState) {
    View rootView = inflater.inflate(R.layout.fragment_activity3,
            container, false);
    tv1=(TextView) rootView.findViewById(R.id.textView11);
    Bundle b = getActivity().getIntent().getExtras();
    tv1.setText(b.getString("str1"));
    return rootView;
}
```


5556:MyDelphiAndroid1
6:51
multi_activity_pass_value
Hello world!
Hello Unipi Students!
Go to Second Form
Go to Third Form
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard
Use your physical keyboard to provide input

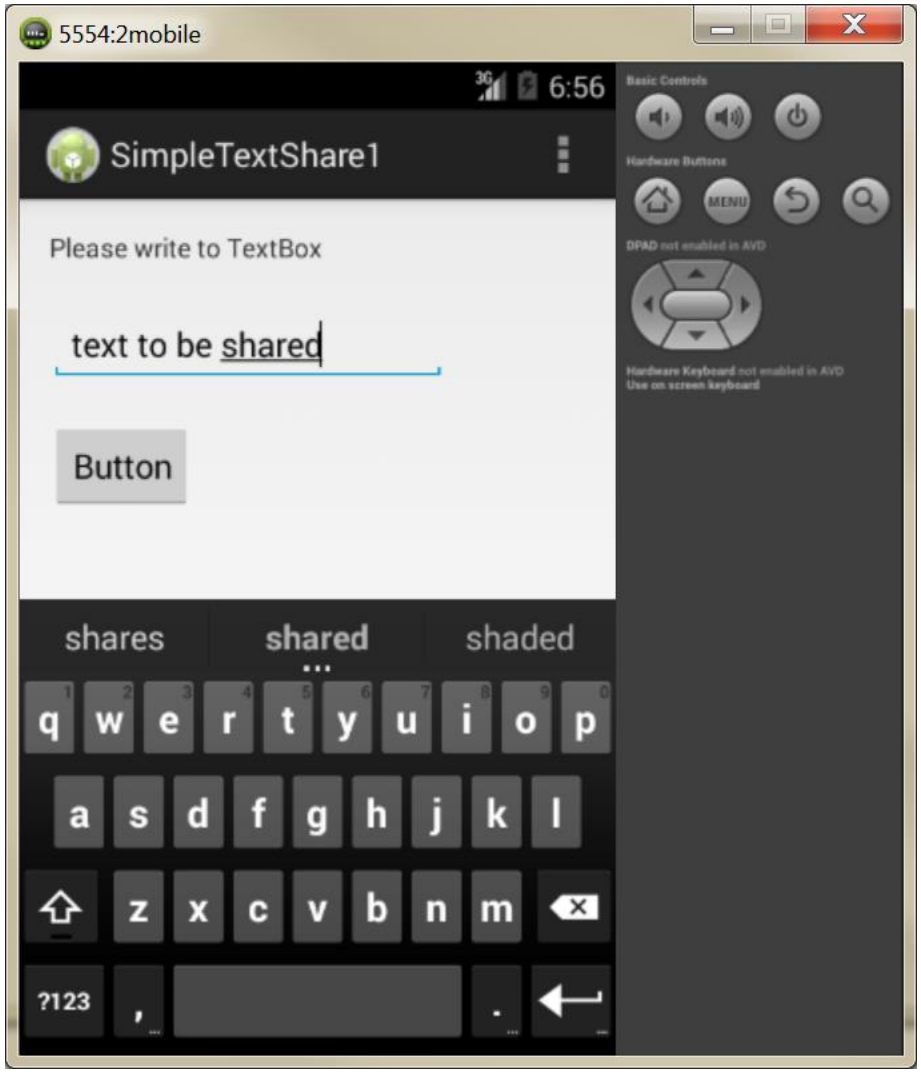

5556:MyDelphiAndroid1
6:51
Activity3
Hello world!
Hello Unipi Students!
Back
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard
Use your physical keyboard to provide input

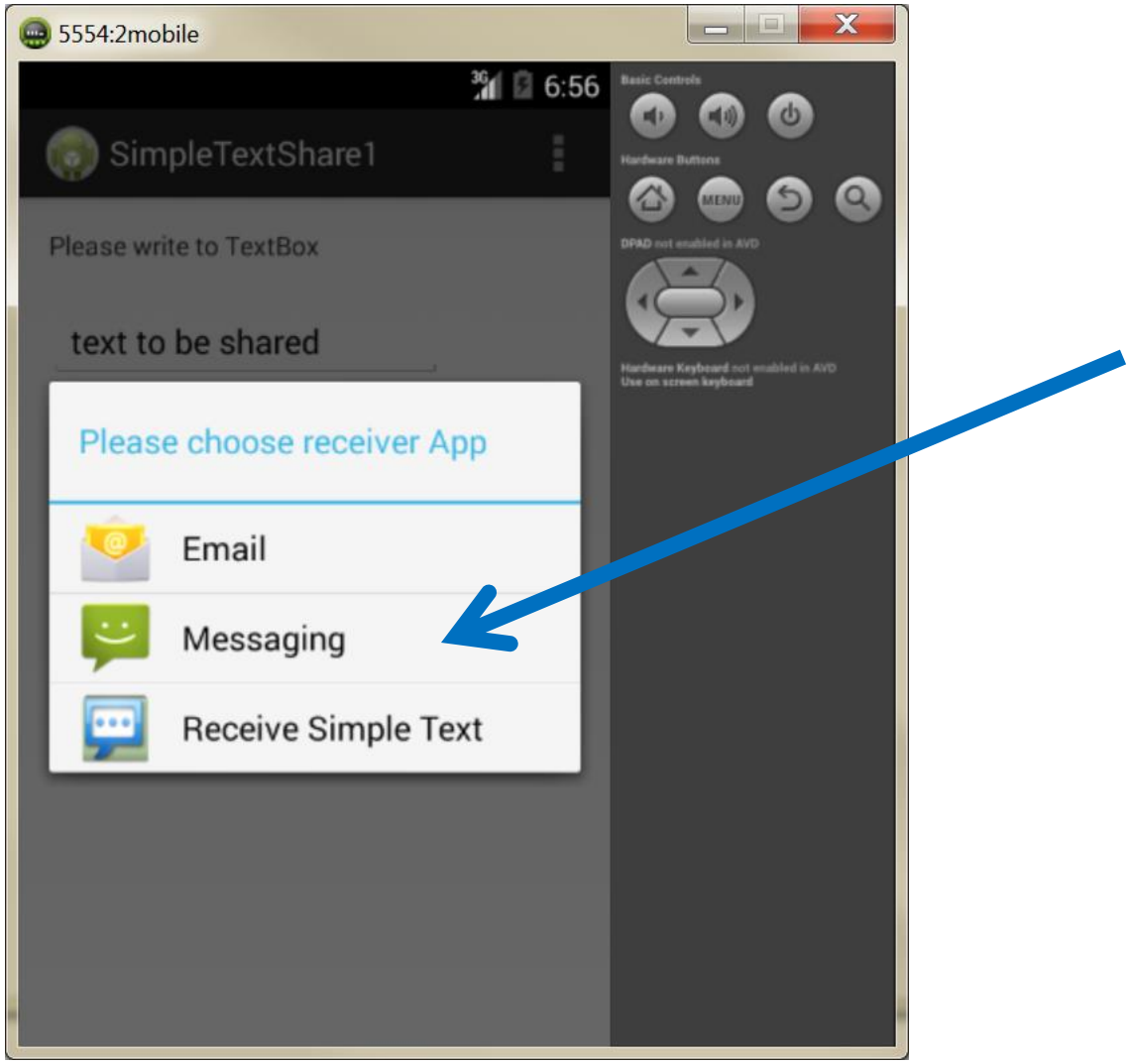
Sharing with other Android Apps (sorry iOS)

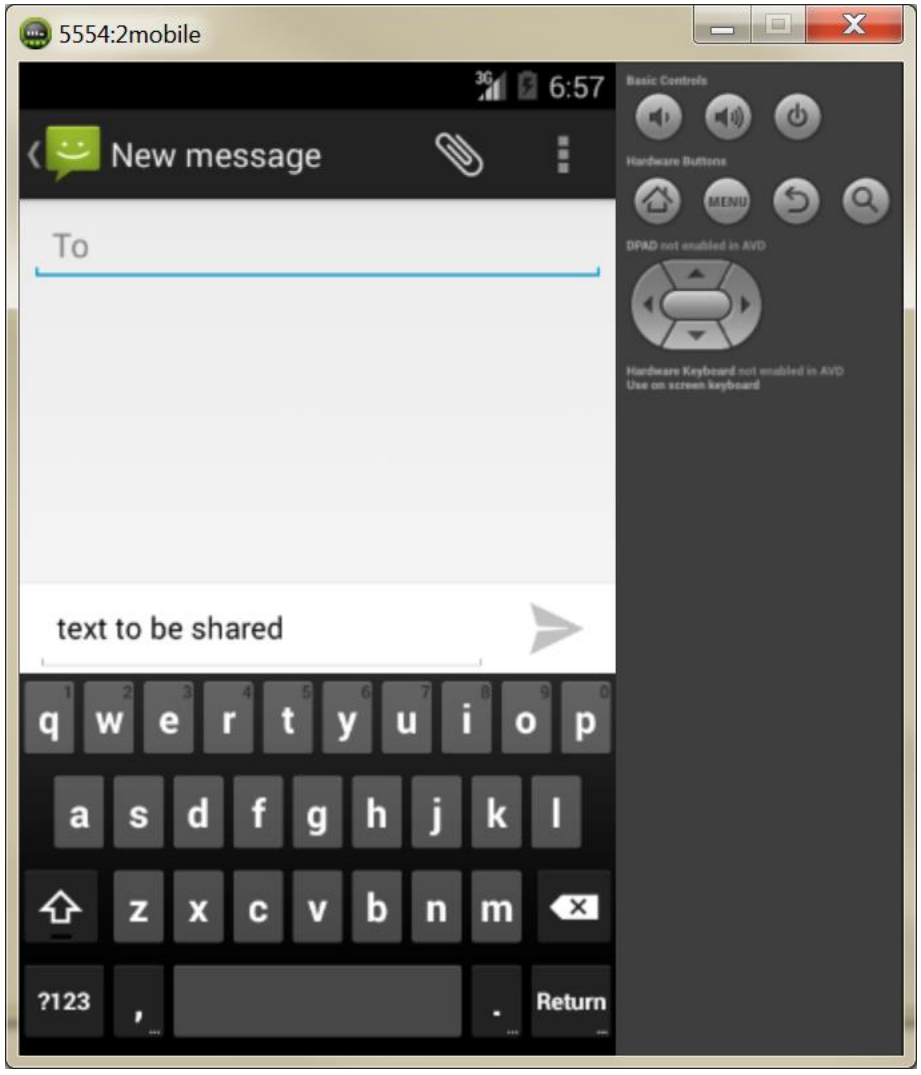


Share Text with other Apps
Source code

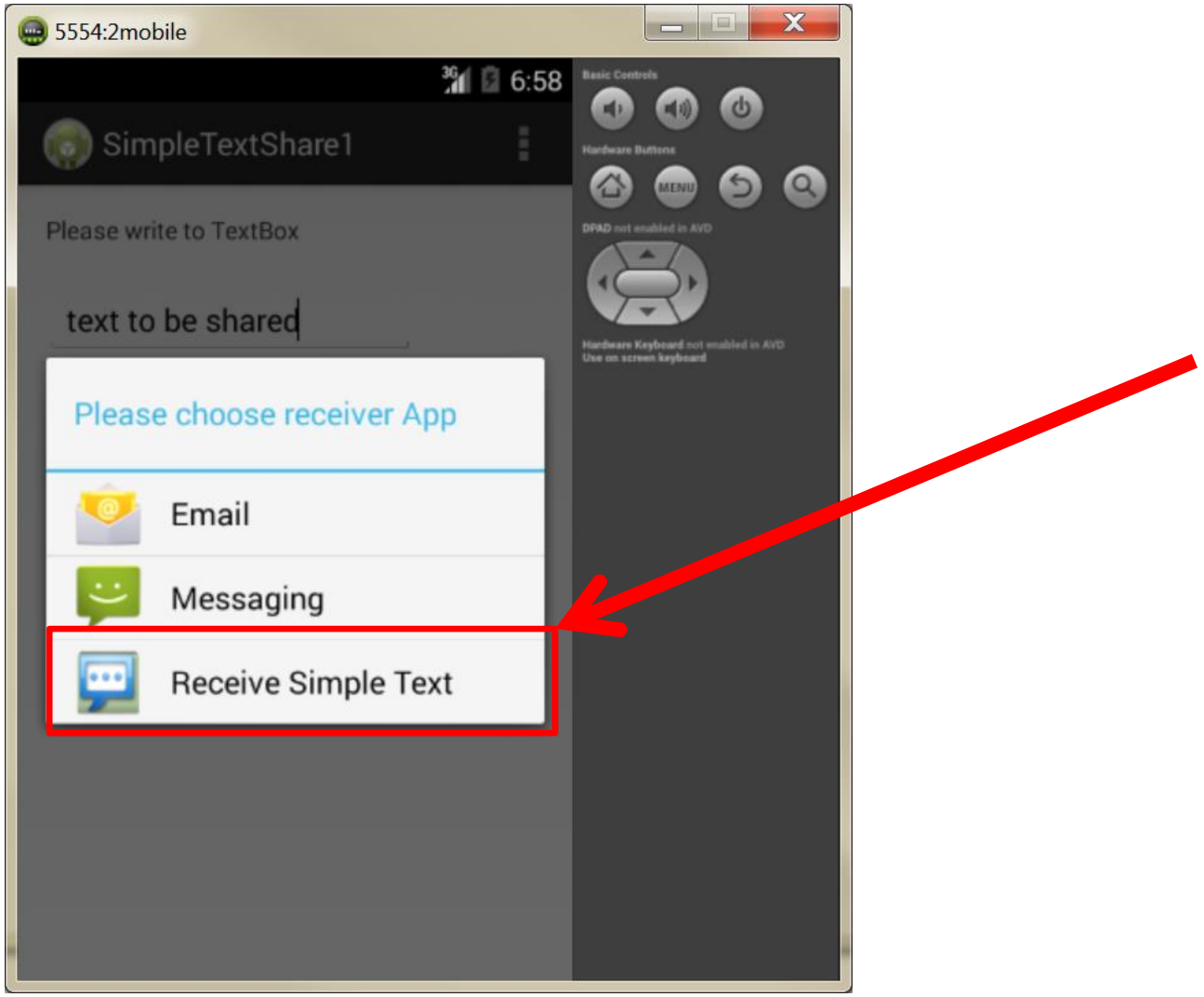
```
public void sendText(View v){
    if (!edit1.getText().toString().matches("")) {
    Intent sendIntent = new Intent();
    sendIntent.setAction(Intent.ACTION_SEND);
    sendIntent.putExtra(Intent.EXTRA_TEXT, edit1.getText().toString());
    sendIntent.setType("text/plain");
    startActivity(Intent.createChooser(sendIntent, getResources().getText(R.string.send_to)));
    }
    else
    {
        Toast.makeText(this, "Please enter some text", Toast.LENGTH_SHORT).show();
    }
}
```


5554:2mobile
6:56
SimpleTextShare1
Please write to TextBox
text to be shared
Button
shares
shared
shaded
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard


5554:2mobile
6:56
SimpleTextShare1
Please write to TextBox
text to be shared
Please choose receiver App
Email
Messaging
Receive Simple Text
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard


5554:2mobile
6:57
New message
To
text to be shared
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123
Return

Create an application that can receive data from other apps?



1st Step
Create an intent filter in Manifest

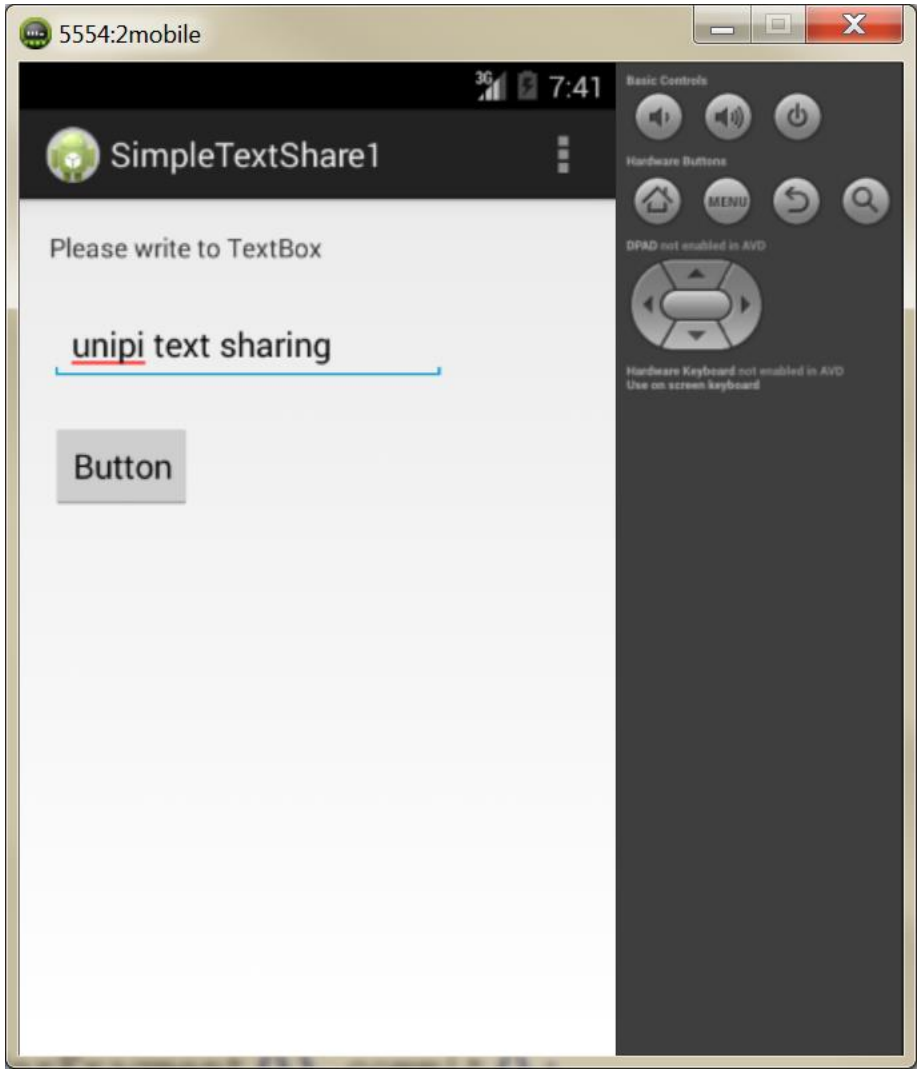
```
<intent-filter>
    <action android:name="android.intent.action.SEND" />
    <category android:name="android.intent.category.DEFAULT" />
    <data android:mimeType="text/plain" />
</intent-filter>
```

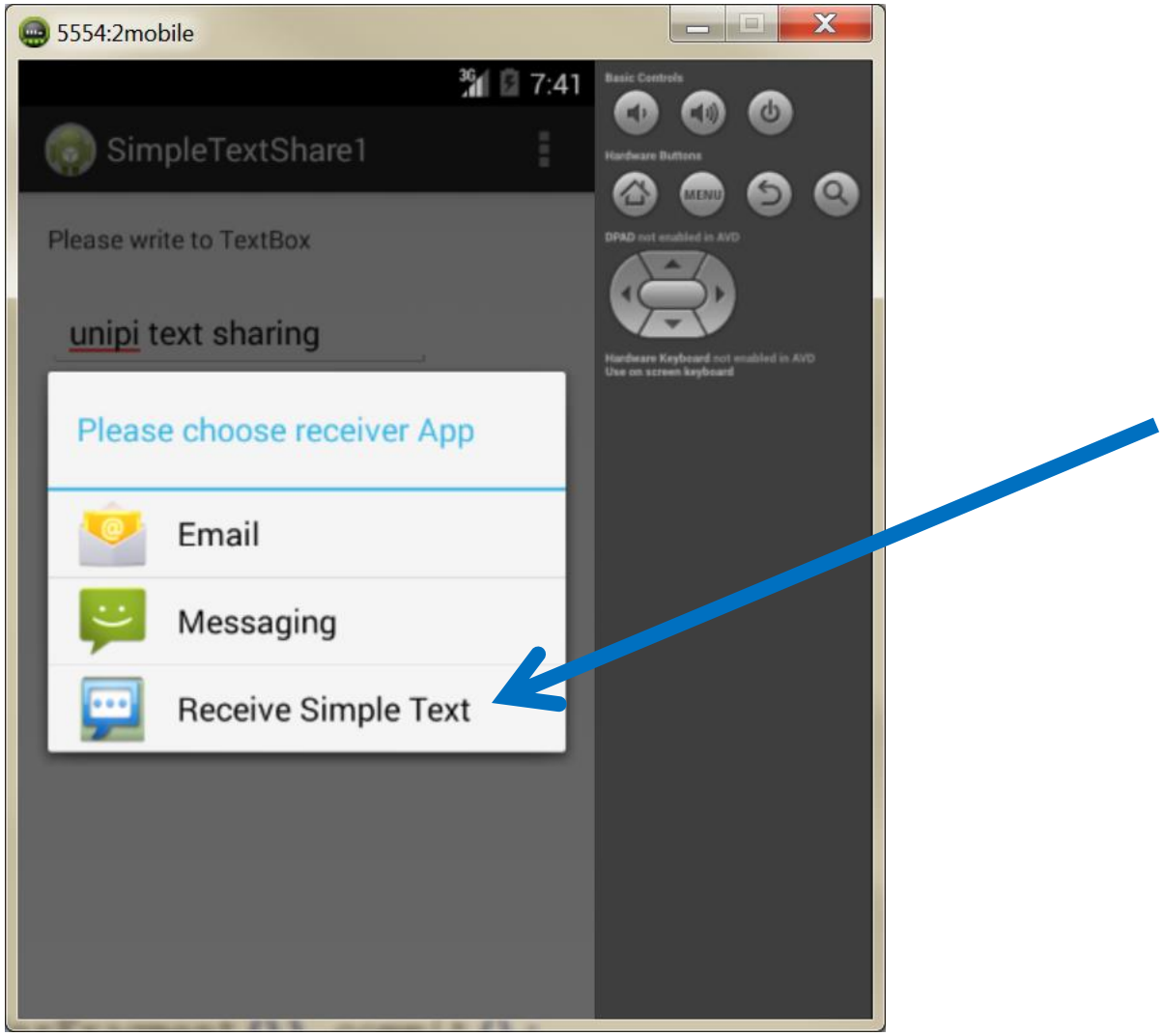
2nd Step
Capture intent in “onCreate” function

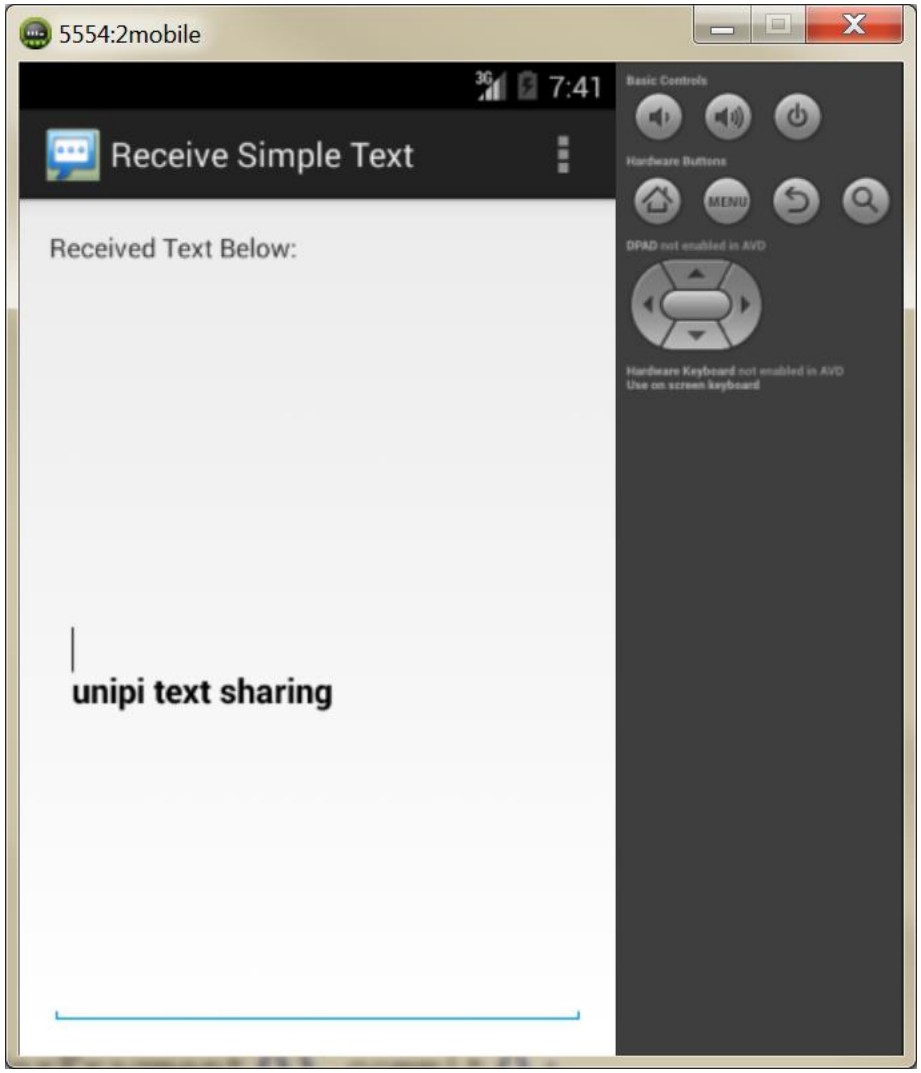
```
protected void onCreate(Bundle savedInstanceState) {
    Intent intent = getIntent();
    String action = intent.getAction();
    String type = intent.getType();

    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    if (savedInstanceState == null) {
        getFragmentManager().beginTransaction()
                .add(R.id.container, new PlaceholderFragment()).commit();
    }

    if (Intent.ACTION_SEND.equals(action) && type != null) {
        if ("text/plain".equals(type)) {
            handleSendText(intent); // Handle text being sent
        }
    }
}
```

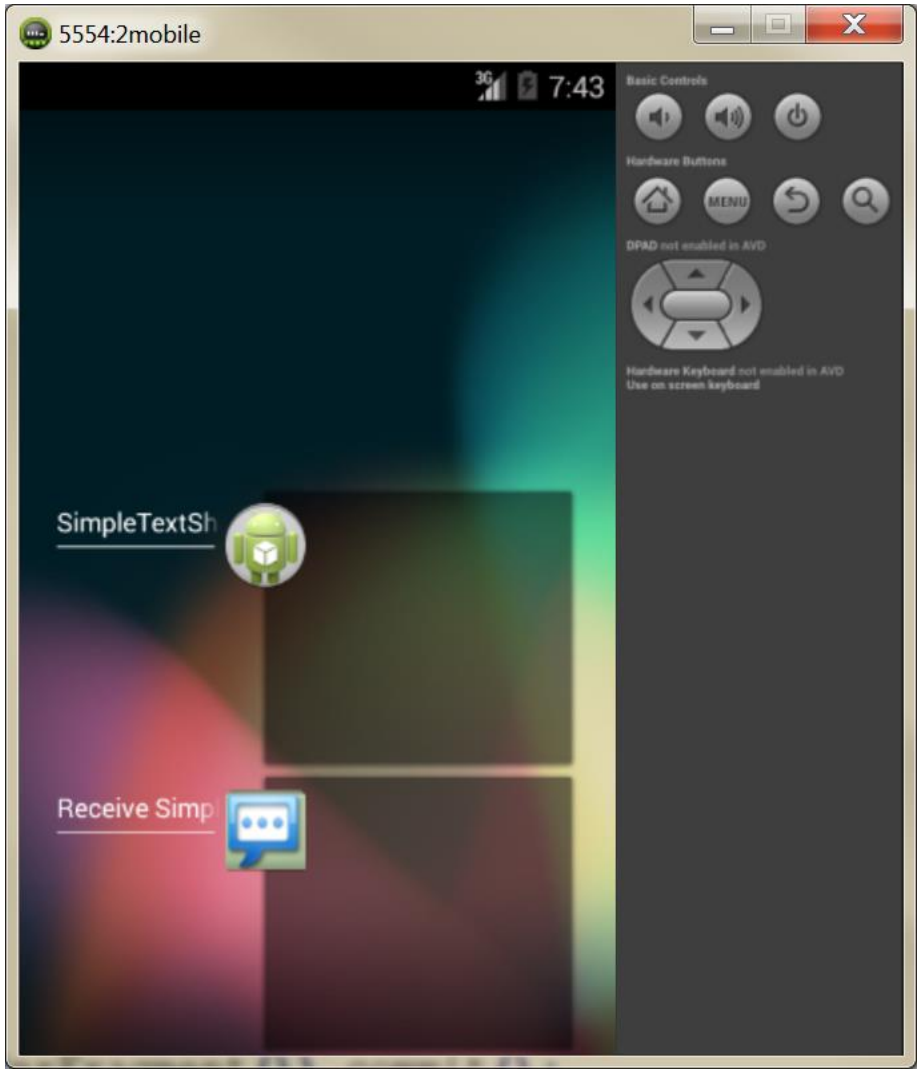
3rd Step
Handle captured data

```
void handleSendText(Intent intent) {
        String sharedText = intent.getStringExtra(Intent.EXTRA_TEXT);
        if (sharedText != null) {
            sent_message=sent_message+"\n"+sharedText;
        }
    }
```


5554:2mobile
7:41
SimpleTextShare1
Please write to TextBox
unipi text sharing
Button
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard


5554:2mobile
7:41
SimpleTextShare1
Please write to TextBox
unipi text sharing
Please choose receiver App
Email
Messaging
Receive Simple Text
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard


5554:2mobile
7:41
Receive Simple Text
Received Text Below:
unipi text sharing
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard


5554:2mobile
7:43
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard
SimpleTextSh
Receive Simp

Android Geolocation

1st Step
Add permissions in Manifest

```
<uses-sdk
    android:minSdkVersion="16"
    android:targetSdkVersion="19" />
<uses-permission android:name="android.permission.INTERNET"/>
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
```

2nd Step
Request Location Updates, Implementing “LocationListener”

```
public class MainActivity extends Activity implements LocationListener {
    private LocationManager locationManager;
```

```
locationManager = (LocationManager) getSystemService(Context.LOCATION_SERVICE);
```

```
locationManager.requestLocationUpdates( LocationManager.GPS_PROVIDER,3000,10, this);
```

Public Interface LocationListener

Public Methods	
abstract void	onLocationChanged (Location location) Called when the location has changed.
abstract void	onProviderDisabled (String provider) Called when the provider is disabled by the user.
abstract void	onProviderEnabled (String provider) Called when the provider is enabled by the user.
abstract void	onStatusChanged (String provider, int status, Bundle extras) Called when the provider status changes.

void android.location.LocationManager.requestLocationUpdates(String provider, long minTime, float minDistance, LocationListener listener)

public void requestLocationUpdates (String provider, long minTime, float minDistance, LocationListener listener)

Added in API level 1

Register for location updates using the named provider, and a pending intent.

See `requestLocationUpdates(long, float, Criteria, PendingIntent)` for more detail on how to use this method.

3rd Step
Override “onLocationChanged” function

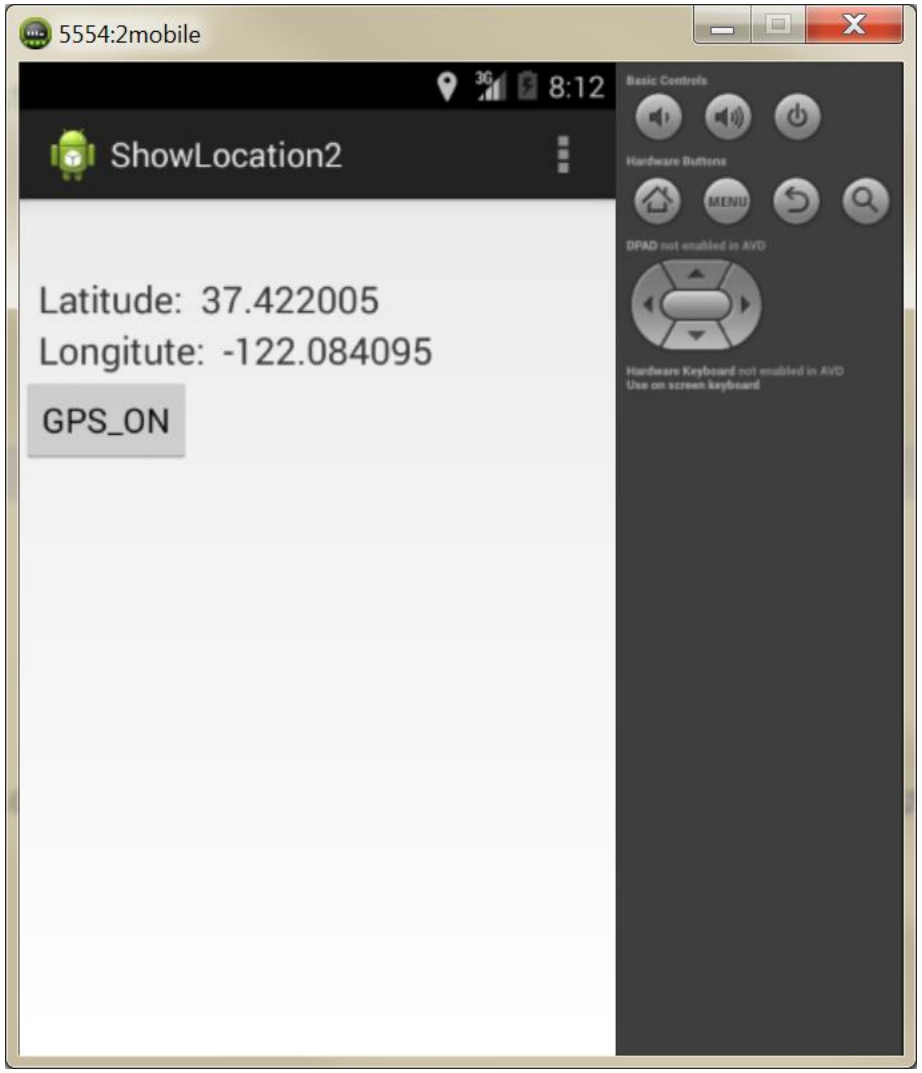
```
@Override
  public void onLocationChanged(Location location) {
    double lat = (double) (location.getLatitude());
    double lng = (double) (location.getLongitude());
    latituteField.setText(String.valueOf(lat));
    longitudeField.setText(String.valueOf(lng));
  }
```

How to stop location tracking?

```
locationManager.removeUpdates(this);
```

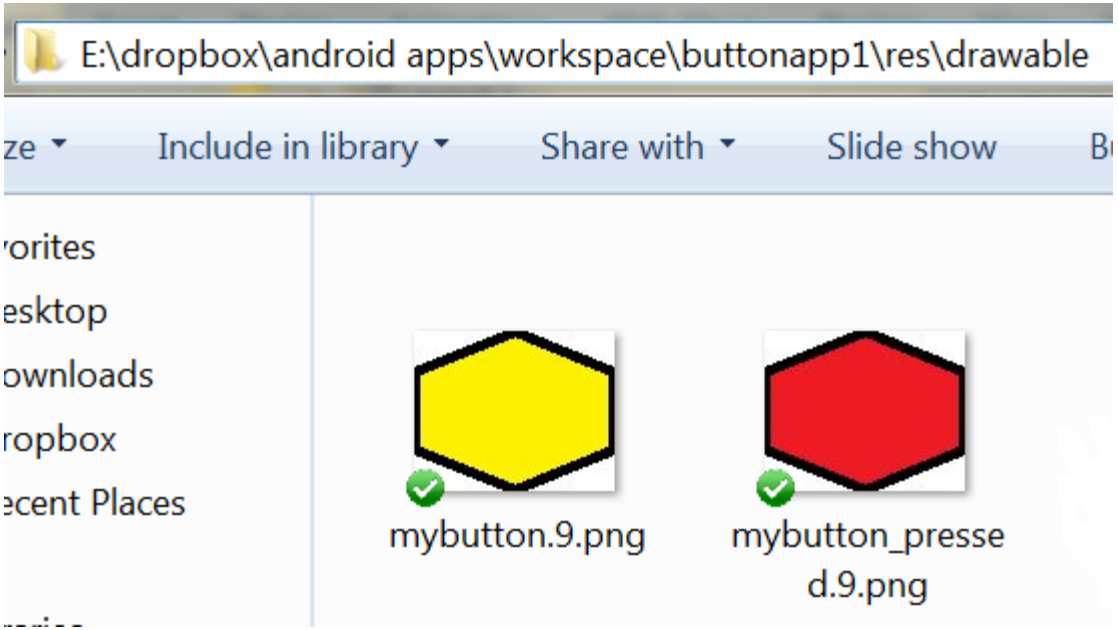

5554:2mobile
8:09
ShowLocation2
Latitude: unknown
Longitude: unknown
GPS OFF
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard


5554:2mobile
8:11
ShowLocation2
Latitude: unknown
Longitude: unknown
GPS_ON
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard


5554:2mobile
8:12
ShowLocation2
Latitude: 37.422005
Longitude: -122.084095
GPS_ON
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard

Custom Views

1st Step
Create graphics and save them in your “res” folder



2nd Step

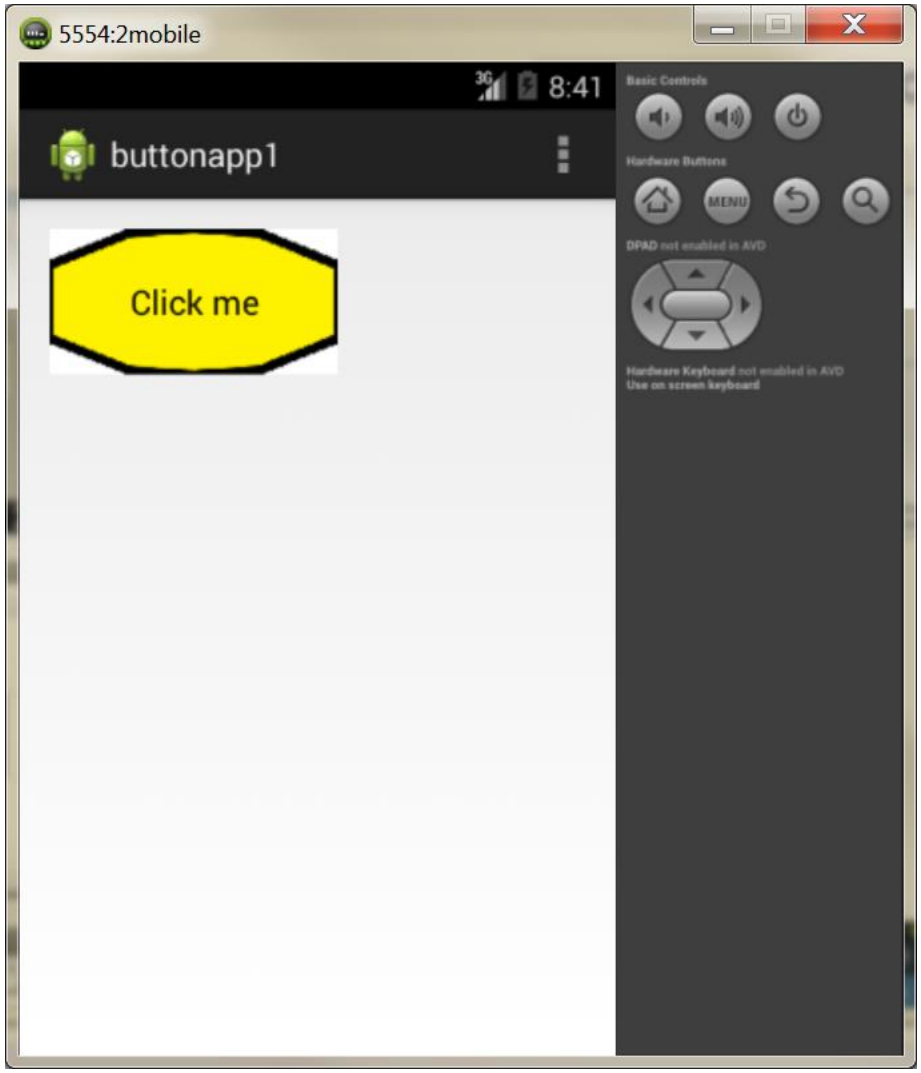
Create the appropriate xml resource file and place it in “res” folder

mycustbutton.xml

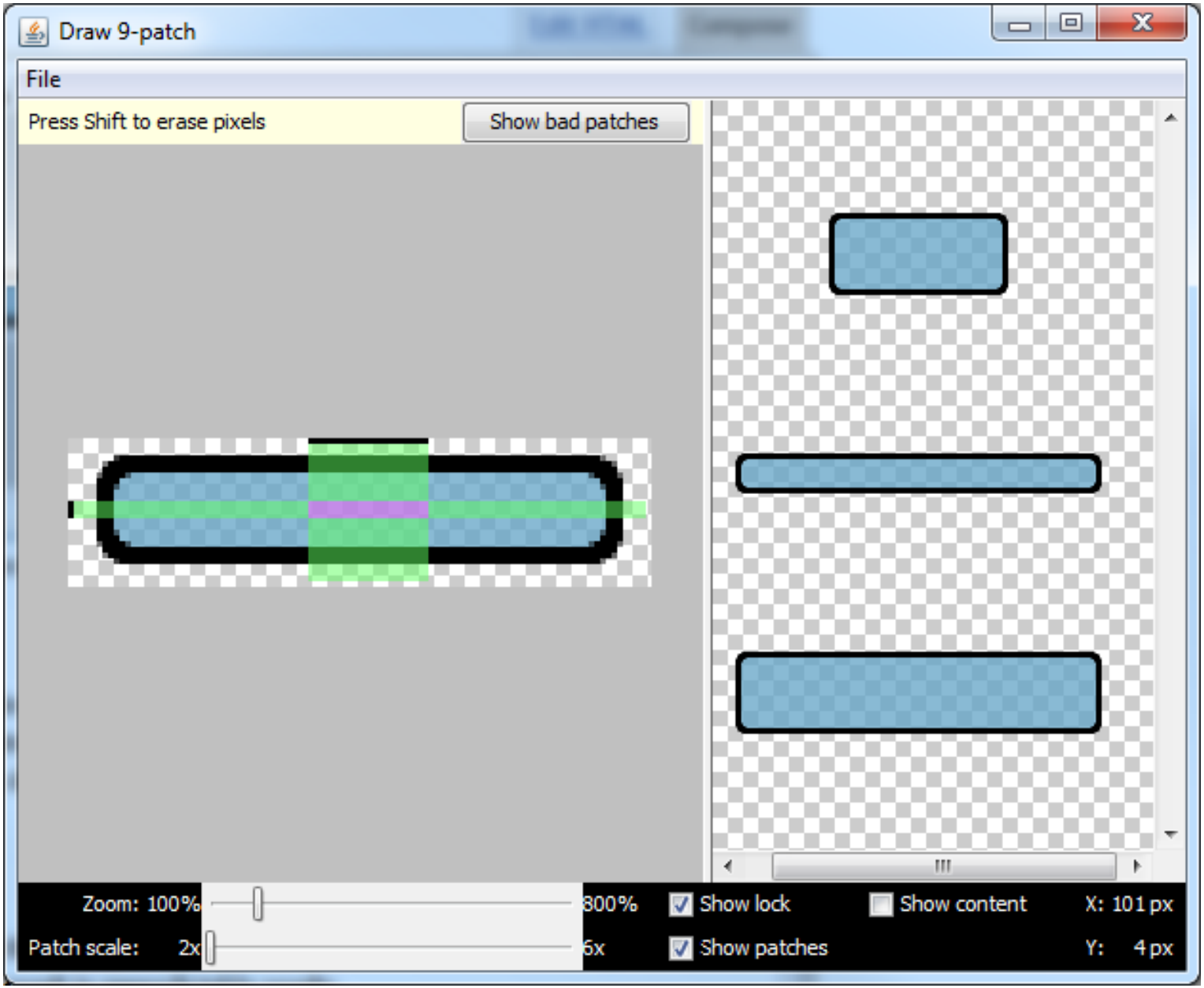
```xml
<?xml version="1.0" encoding="utf-8"?>
<selector xmlns:android="http://schemas.android.com/apk/res/android">
    <item android:drawable="@drawable/mybutton_pressed"
          android:state_pressed="true" />
    <item android:drawable="@drawable/mybutton" />
</selector>
```

3rd Step
In your main layout file insert the xml file as the button's "background" attribute

```
<Button
android:id="@+id/button_send"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/button_send"
android:background="@drawable/mycustbutton"   />
```


5554:2mobile
8:41
buttonapp1
Click me
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard

draw9patch


Draw 9-patch
File
Press Shift to erase pixels
Show bad patches
Zoom: 100%
800%
Show lock
Show content
X: 101 px
Patch scale:
2x
6x
Show patches
Y: 4 px

How to beep and vibrate

Only for vibration: Request permission

```
<uses-sdk
    android:minSdkVersion="15"
    android:targetSdkVersion="19" />
<uses-permission android:name="android.permission.VIBRATE"/>
```

Beep through ToneGenerator

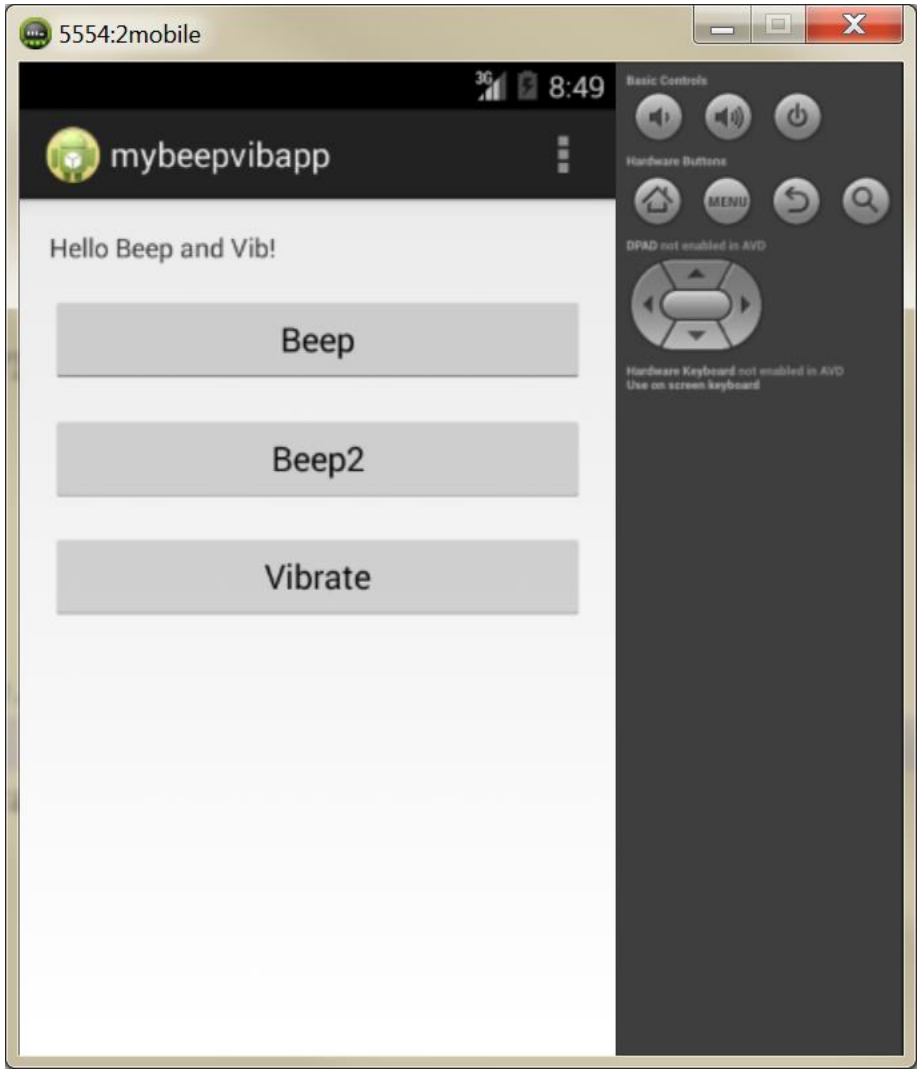
```
public void doBeep(View view){
    final ToneGenerator tg = new ToneGenerator(AudioManager.STREAM_NOTIFICATION, 100);
     tg.startTone(ToneGenerator.TONE_PROP_BEEP);
}
```

Beep through RingtoneManager

```
public void doBeep2(View view){
    try {
        Uri notification = RingtoneManager.getDefaultUri(RingtoneManager.TYPE_NOTIFICATION);
        Ringtone r = RingtoneManager.getRingtone(getApplicationContext(), notification);
        r.play();
    } catch (Exception e) {
        e.printStackTrace();
    }
}
```

Vibrate!

```
public void doVib(View view){
Vibrator v = (Vibrator) getSystemService(Context.VIBRATOR_SERVICE);
 // Vibrate for 500 milliseconds
 v.vibrate(500);
}
```


5554:2mobile
8:49
mybeepvibapp
Hello Beep and Vib!
Beep
Beep2
Vibrate
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard

Android Play a video!

1st Step
Create a VideoView in your layout file

```
<VideoView
    android:id="@+id/videoView1"
    android:layout_width="match_parent"
    android:layout_height="250dp"
    android:layout_alignParentLeft="true"
    android:layout_below="@+id/textView1"
    android:layout_marginTop="15dp" />
```

2nd Step

If the video is a network resource, request the appropriate permission

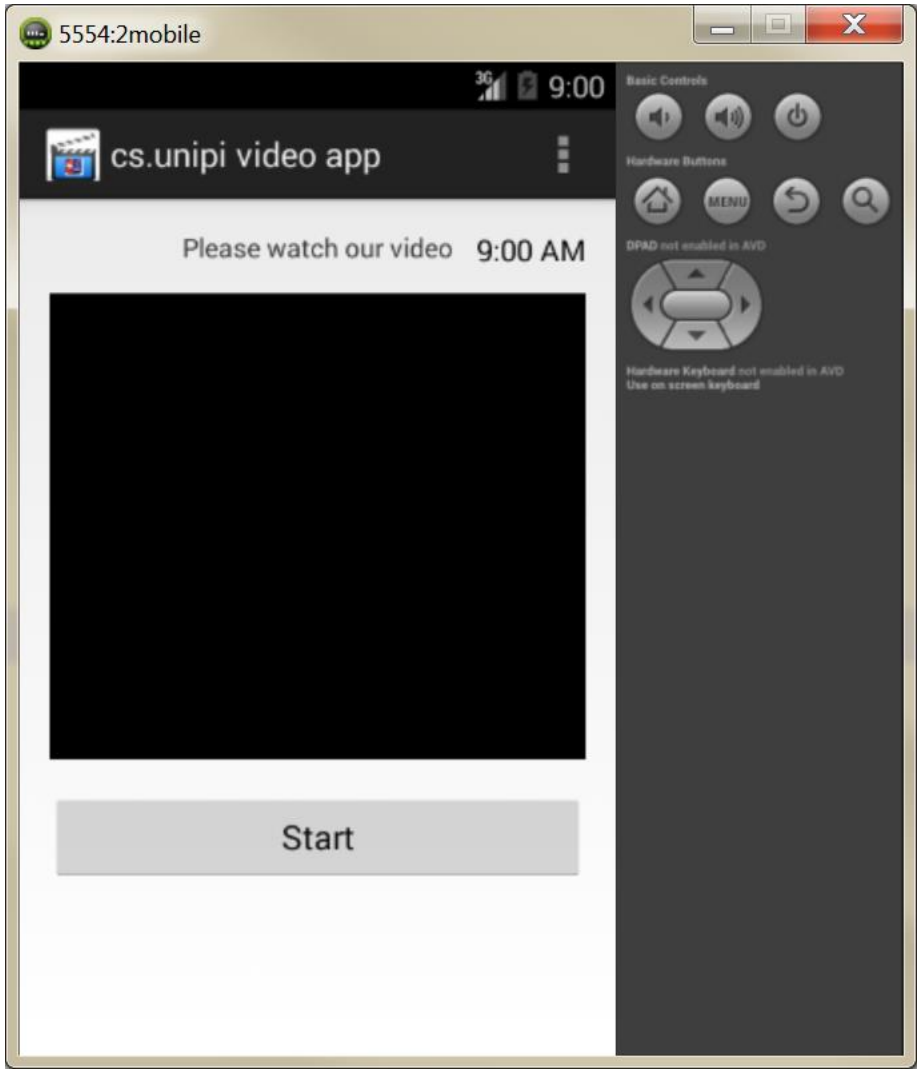
```
<uses-sdk
    android:minSdkVersion="17"
    android:targetSdkVersion="19" />
<uses-permission android:name="android.permission.INTERNET" />
```

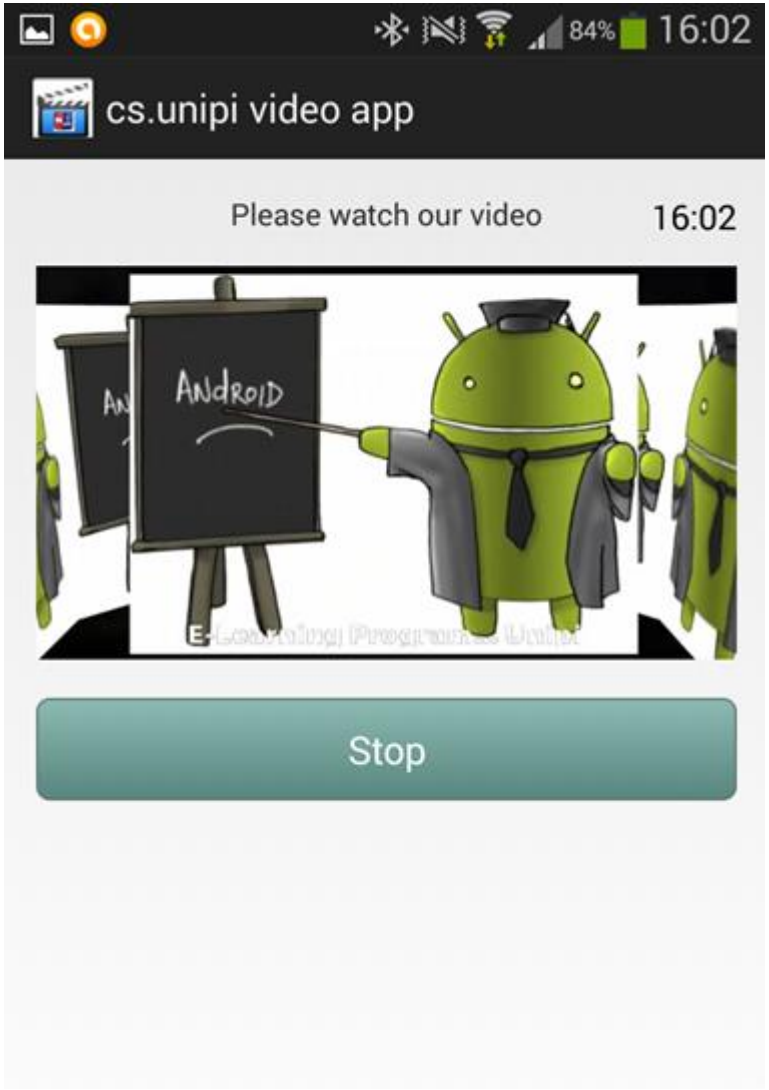
3rd Step
Play the video file inside the VideoView

```
public void startVideo(View v){
    VideoView videoView = (VideoView)findViewById(R.id.videoView1);
    MediaController mc = new MediaController(this);
    videoView.setMediaController(mc);
    String str = "http://www.yoururl.com/yourvideo.mp4";
    Uri uri = Uri.parse(str);
    videoView.setVideoURI(uri);
    videoView.requestFocus();
    videoView.start();
    }
```

Stop the video?

```
videoView.stopPlayback();
```


5554:2mobile
9:00
cs.unipi video app
Please watch our video
9:00 AM
Start
Basic Controls
Hardware Buttons
MENU
DPAD not enabled in AVD
Hardware Keyboard not enabled in AVD
Use on screen keyboard


84%
16:02
cs.unipi video app
Please watch our video
16:02
ANDROID
Stop

Play from a local resource?

```
String SrcPath = "/sdcard/Video/myvideo.mp4";
```


That's all Folks!