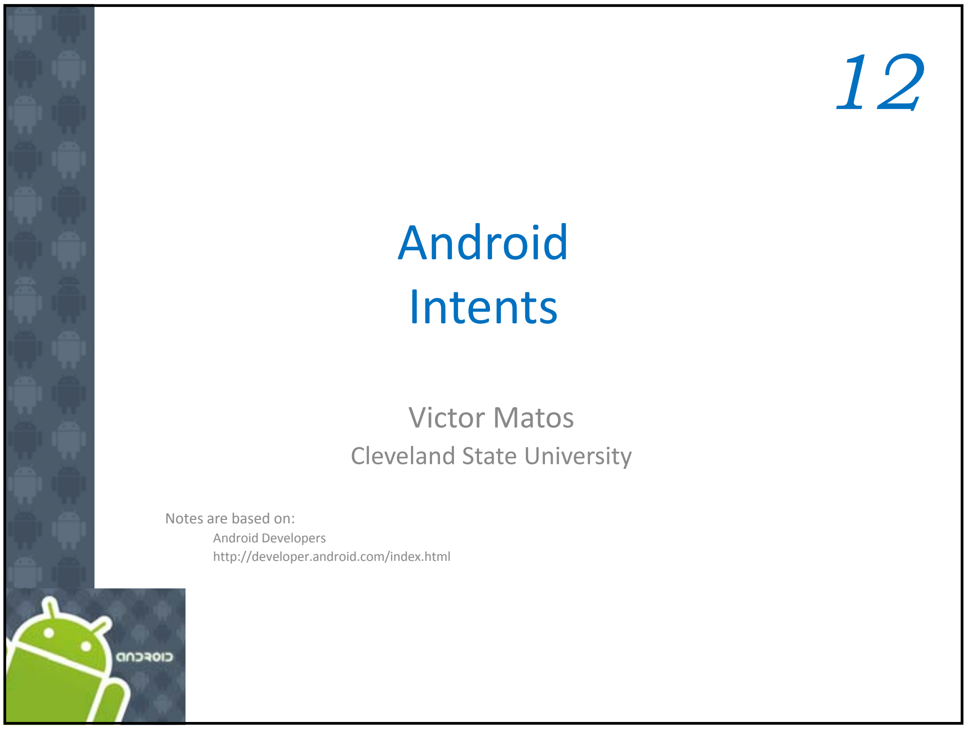
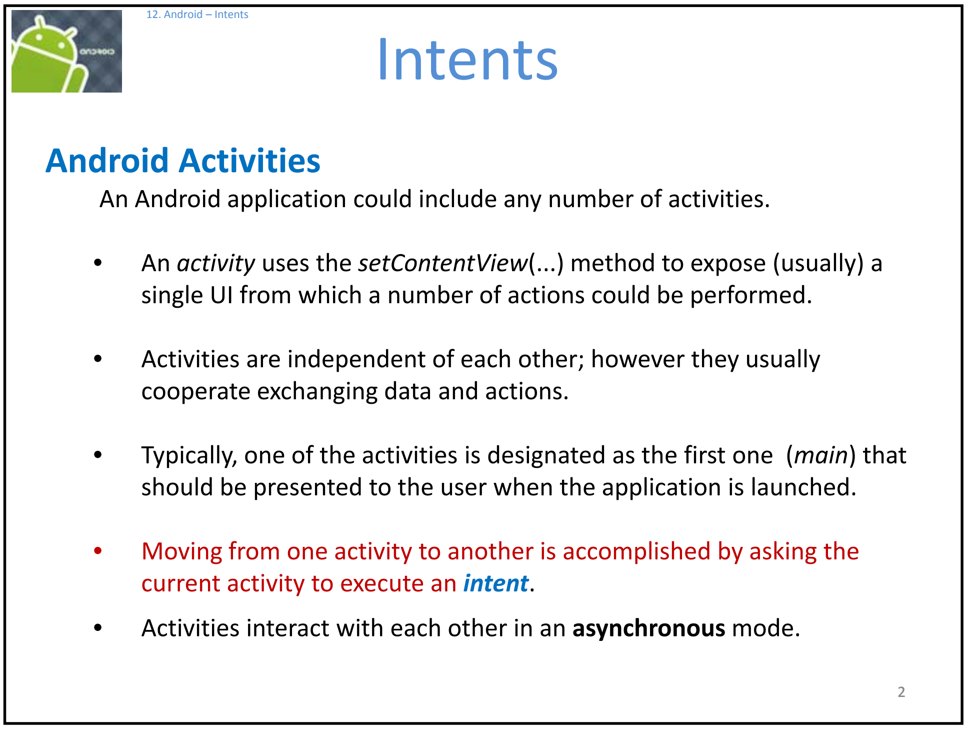


12

Android Intents

Victor Matos
Cleveland State University

Notes are based on:
Android Developers
http://developer.android.com/index.html

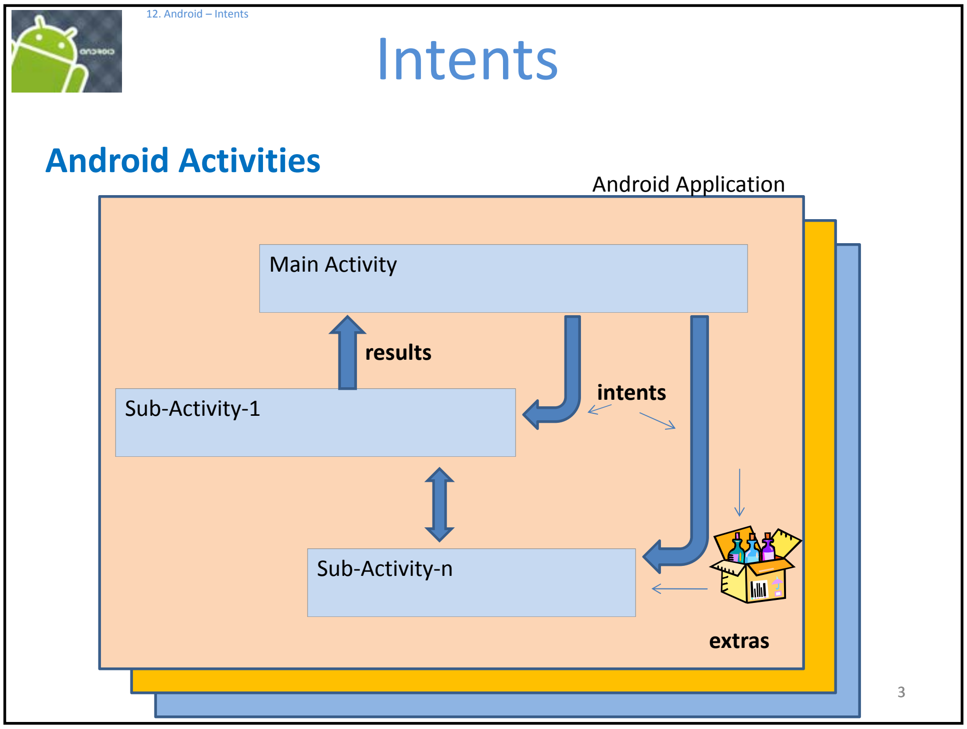


Intents

Android Activities

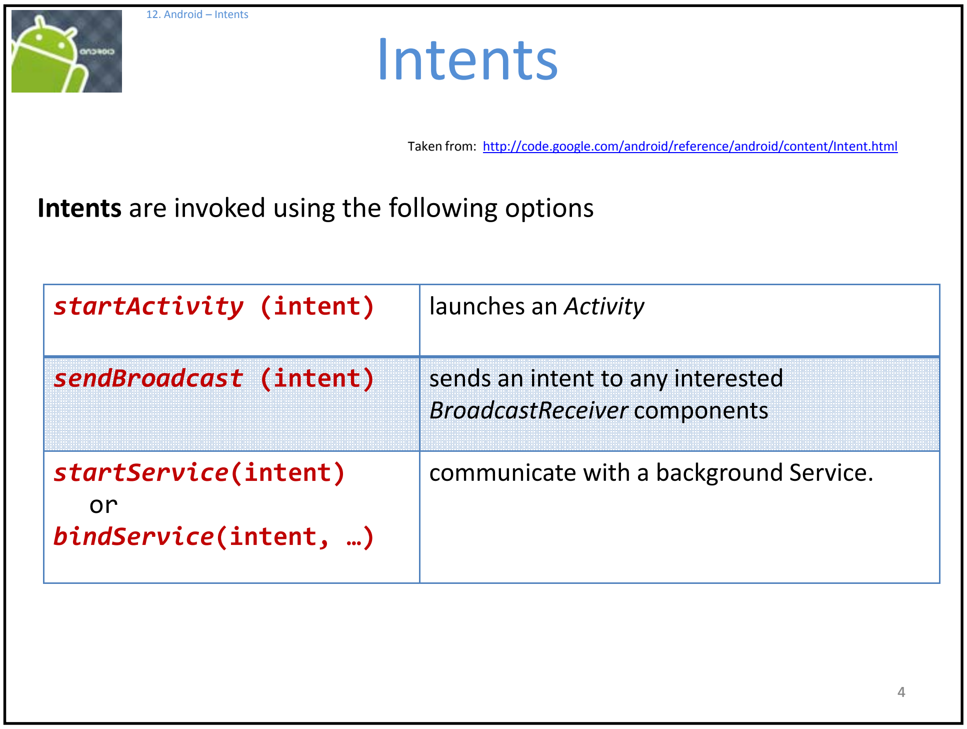
An Android application could include any number of activities.

- An *activity* uses the *setContentView*(...) method to expose (usually) a single UI from which a number of actions could be performed.
- Activities are independent of each other; however they usually cooperate exchanging data and actions.
- Typically, one of the activities is designated as the first one (*main*) that should be presented to the user when the application is launched.
- Moving from one activity to another is accomplished by asking the current activity to execute an ***intent***.
- Activities interact with each other in an **asynchronous** mode.



Intents

Android Activities

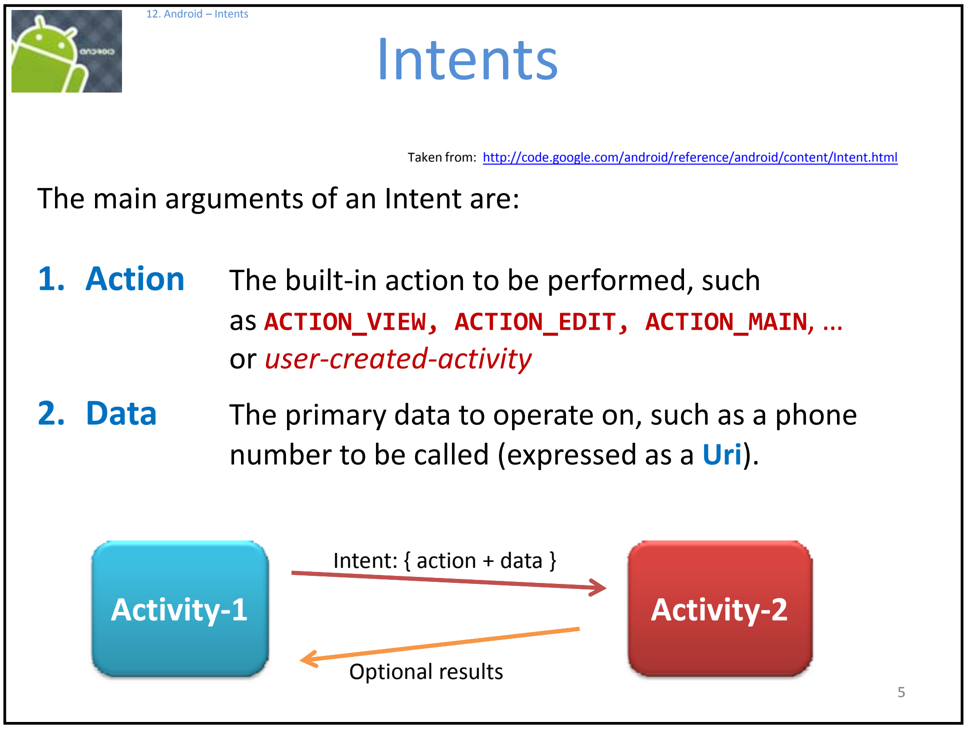


Intents

Taken from: http://code.google.com/android/reference/android/content/Intent.html

Intents are invoked using the following options

startActivity (intent)	launches an *Activity*
sendBroadcast (intent)	sends an intent to any interested *BroadcastReceiver* components
***startService*(intent)** or ***bindService*(intent, …)**	communicate with a background Service.



12. Android – Intents

Intents

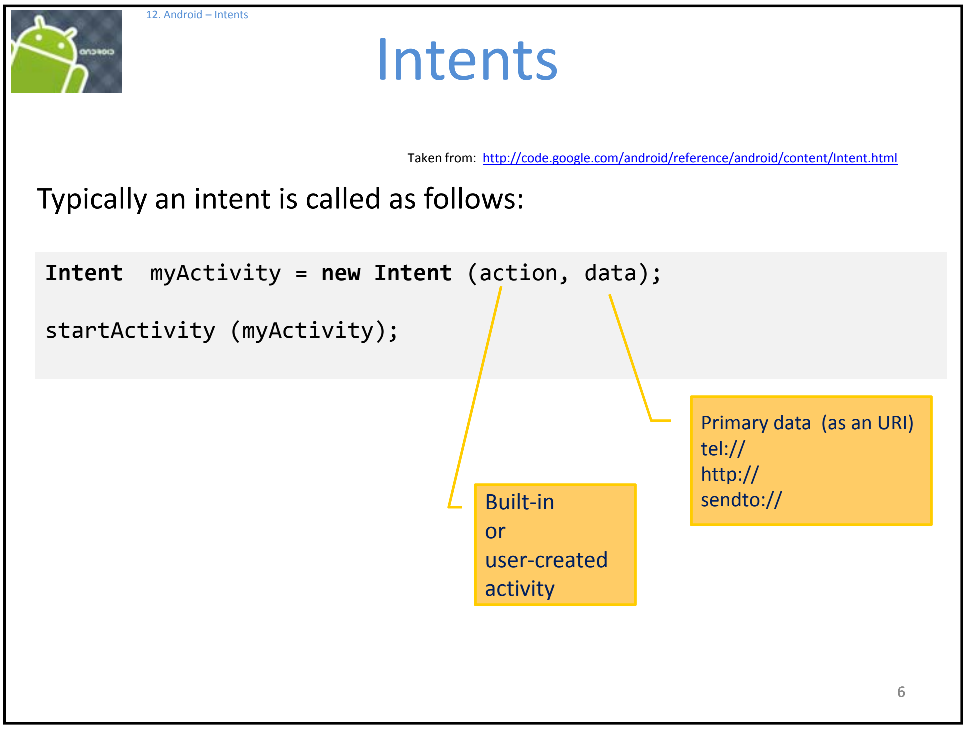
Taken from: http://code.google.com/android/reference/android/content/Intent.html

The main arguments of an Intent are:

1. **Action** The built-in action to be performed, such as **`ACTION_VIEW, ACTION_EDIT, ACTION_MAIN`**, … or *user-created-activity*
2. **Data** The primary data to operate on, such as a phone number to be called (expressed as a **Uri**).

Activity-1
Intent: { action + data }
Activity-2
Optional results

5



12. Android – Intents

Intents

Taken from: http://code.google.com/android/reference/android/content/Intent.html

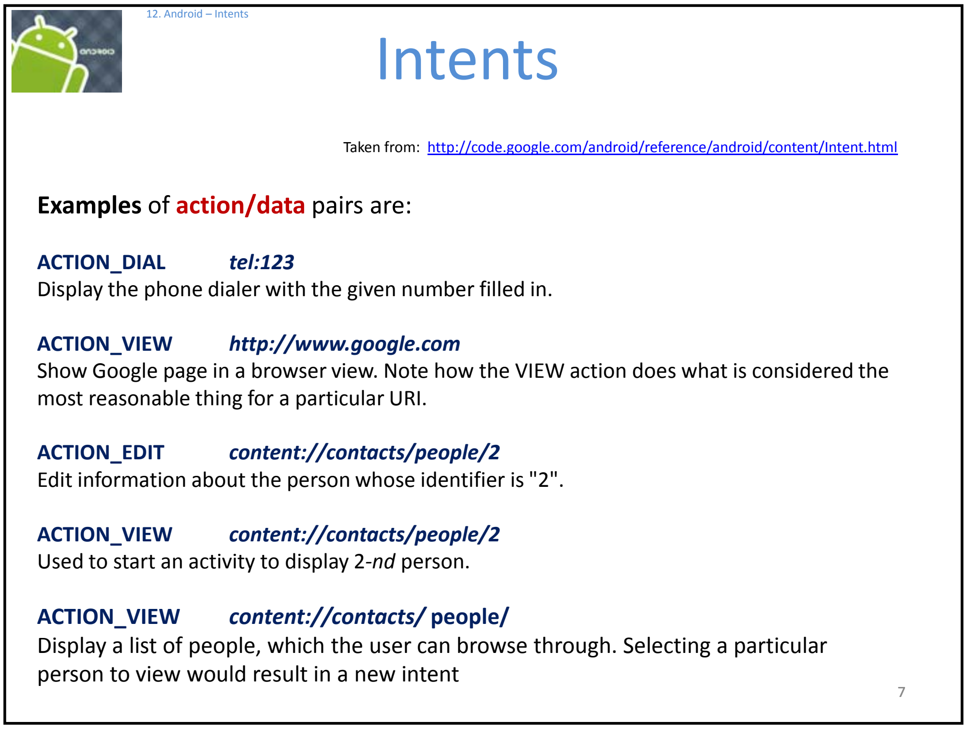
Typically an intent is called as follows:

```
Intent  myActivity = new Intent (action, data);

startActivity (myActivity);
```

Built-in
or
user-created
activity

Primary data (as an URI)
tel://
http://
sendto://

6



Intents

Taken from: http://code.google.com/android/reference/android/content/Intent.html

Examples of **action/data** pairs are:

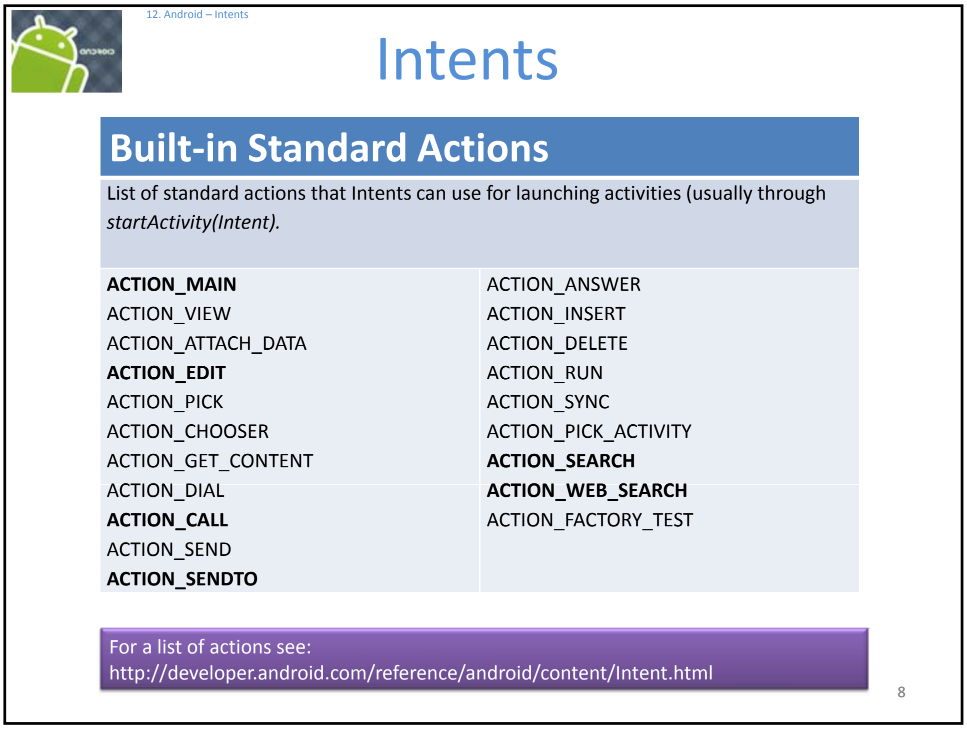
ACTION_DIAL ***tel:123***
Display the phone dialer with the given number filled in.

ACTION_VIEW ***http://www.google.com***
Show Google page in a browser view. Note how the VIEW action does what is considered the most reasonable thing for a particular URI.

ACTION_EDIT ***content://contacts/people/2***
Edit information about the person whose identifier is "2".

ACTION_VIEW ***content://contacts/people/2***
Used to start an activity to display 2-*nd* person.

ACTION_VIEW ***content://contacts/* people/**
Display a list of people, which the user can browse through. Selecting a particular person to view would result in a new intent



Intents

Built-in Standard Actions

List of standard actions that Intents can use for launching activities (usually through *startActivity(Intent).*

ACTION_MAIN
ACTION_VIEW
ACTION_ATTACH_DATA
ACTION_EDIT
ACTION_PICK
ACTION_CHOOSER
ACTION_GET_CONTENT
ACTION_DIAL
ACTION_CALL
ACTION_SEND
ACTION_SENDTO

ACTION_ANSWER
ACTION_INSERT
ACTION_DELETE
ACTION_RUN
ACTION_SYNC
ACTION_PICK_ACTIVITY
ACTION_SEARCH
ACTION_WEB_SEARCH
ACTION_FACTORY_TEST

For a list of actions see:
http://developer.android.com/reference/android/content/Intent.html

Intents

ACTION_AIRPLANE_MODE_CHANGED
ACTION_ALL_APPS
ACTION_ANSWER
ACTION_ATTACH_DATA
ACTION_BATTERY_CHANGED
ACTION_BATTERY_LOW
ACTION_BATTERY_OKAY
ACTION_BOOT_COMPLETED
ACTION_BUG_REPORT
ACTION_CALL
ACTION_CALL_BUTTON
ACTION_CAMERA_BUTTON
ACTION_CHOOSER
ACTION_CLOSE_SYSTEM_DIALOGS
ACTION_CONFIGURATION_CHANGED
ACTION_CREATE_SHORTCUT
ACTION_DATE_CHANGED
ACTION_DEFAULT
ACTION_DELETE
ACTION_DEVICE_STORAGE_LOW
ACTION_DEVICE_STORAGE_OK
ACTION_DIAL
ACTION_DOCK_EVENT
ACTION_EDIT
ACTION_EXTERNAL_APPLICATIONS_AVAILABLE
ACTION_EXTERNAL_APPLICATIONS_UNAVAILABLE
ACTION_FACTORY_TEST
ACTION_GET_CONTENT
ACTION_GTALK_SERVICE_CONNECTED
ACTION_GTALK_SERVICE_DISCONNECTED
ACTION_HEADSET_PLUG
ACTION_INPUT_METHOD_CHANGED
ACTION_INSERT
ACTION_INSERT_OR_EDIT
ACTION_LOCALE_CHANGED
ACTION_MAIN
ACTION_MANAGE_PACKAGE_STORAGE
ACTION_MEDIA_BAD_REMOVAL
ACTION_MEDIA_BUTTON
ACTION_MEDIA_CHECKING
ACTION_MEDIA_EJECT
ACTION_MEDIA_MOUNTED
ACTION_MEDIA_NOFS
ACTION_MEDIA_REMOVED
ACTION_MEDIA_SCANNER_FINISHED
ACTION_MEDIA_SCANNER_SCAN_FILE
ACTION_MEDIA_SCANNER_STARTED
ACTION_MEDIA_SHARED
ACTION_MEDIA_UNMOUNTABLE
ACTION_MEDIA_UNMOUNTED
ACTION_MY_PACKAGE_REPLACED
ACTION_NEW_OUTGOING_CALL
ACTION_PACKAGE_ADDED
ACTION_PACKAGE_CHANGED
ACTION_PACKAGE_DATA_CLEARED
ACTION_PACKAGE_FIRST_LAUNCH
ACTION_PACKAGE_INSTALL
ACTION_PACKAGE_REMOVED
ACTION_PACKAGE_REPLACED
ACTION_PACKAGE_RESTARTED
ACTION_PASTE
ACTION_PICK
ACTION_PICK_ACTIVITY
ACTION_POWER_CONNECTED
ACTION_POWER_DISCONNECTED
ACTION_POWER_USAGE_SUMMARY
ACTION_PROVIDER_CHANGED
ACTION_REBOOT
ACTION_RUN
ACTION_SCREEN_OFF
ACTION_SCREEN_ON
ACTION_SEARCH
ACTION_SEARCH_LONG_PRESS
ACTION_SEND
ACTION_SENDTO
ACTION_SEND_MULTIPLE
ACTION_SET_WALLPAPER
ACTION_SHUTDOWN
ACTION_SYNC
ACTION_SYSTEM_TUTORIAL
ACTION_TIMEZONE_CHANGED
ACTION_TIME_CHANGED
ACTION_TIME_TICK
ACTION_UID_REMOVED
ACTION_UMS_CONNECTED
ACTION_UMS_DISCONNECTED
ACTION_USER_PRESENT
ACTION_VIEW
ACTION_VOICE_COMMAND
ACTION_WALLPAPER_CHANGED
ACTION_WEB_SEARCH

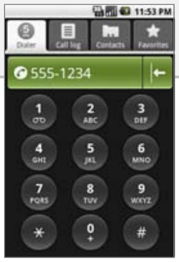
Intents

Taken from: http://code.google.com/android/reference/android/content/Intent.html

Example

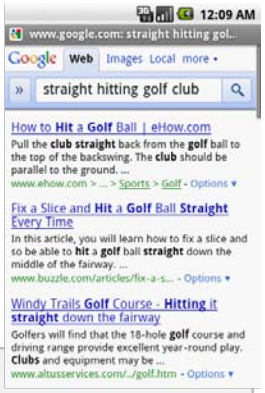
Display the phone dialer with the given number filled in.

```
Intent myActivity2 = new Intent (Intent.ACTION_DIAL,
                                 Uri.parse( "tel:555-1234"));
startActivity(myActivity2);
```



Intents

Taken from: http://code.google.com/android/reference/android/content/Intent.html



12:09 AM

www.google.com: straight hitting gol...

straight hitting golf club

[How to **Hit** a **Golf** Ball | eHow.com]

Pull the **club straight** back from the **golf** ball to the top of the backswing. The **club** should be parallel to the ground. ...

www.ehow.com > ... > Sports > Golf - Options ▾

[Fix a Slice and **Hit** a **Golf** Ball **Straight** Every Time]

In this article, you will learn how to fix a slice and so be able to **hit** a **golf** ball **straight** down the middle of the fairway. ...

www.buzzle.com/articles/fix-a-s... - Options ▾

[Windy Trails **Golf** Course - **Hitting** it **straight** down the fairway]

Golfers will find that the 18-hole **golf** course and driving range provide excellent year-round play. **Clubs** and equipment may be ...

www.altusservices.com/../golf.htm - Options ▾

Intents - Secondary Attributes

In addition to the primary *action/data* attributes, there are a number of ***secondary attributes*** that you can also include with an intent, such as:

1. Category
2. Components
3. Type
4. Extras

Example: Doing a Google search looking for golf clubs

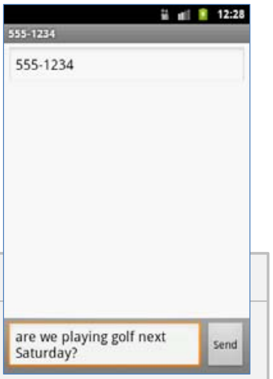
```
Intent intent = new Intent (Intent.ACTION_WEB_SEARCH );

intent.putExtra(SearchManager.QUERY,
               "straight hitting golf clubs");

startActivity(intent);
```

Secondary data

Apparently the Google answer is 'none'

Intents

Taken from: http://code.google.com/android/reference/android/content/Intent.html



12:28

555-1234

555-1234

are we playing golf next Saturday?

Intents - Secondary Attributes

Example: Sending a text message (using extra attributes)

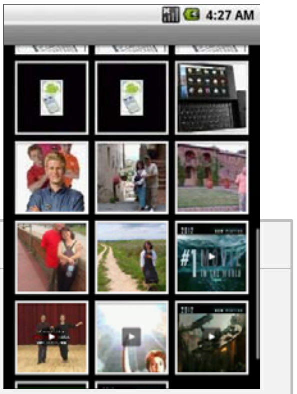
```
Intent intent = new Intent( Intent.ACTION_SENDTO,
                       Uri.parse("sms:5551234"));

intent.putExtra("sms_body", "are we playing golf next Saturday?");

startActivity(intent);
```

"address", "sms_body" are keywords

Intents

Taken from: http://code.google.com/android/reference/android/content/Intent.html

Intents - Secondary Attributes



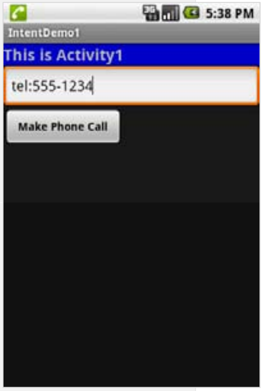
Example: Showing Pictures (using extra attributes)

```
Intent myIntent = new Intent();

 myIntent.setType("image/pictures/*");
 myIntent.setAction(Intent.ACTION_GET_CONTENT);

 startActivity(myIntent);
```

Intents

1. A Complete Example: Activity1 displays an interface to accept a phone number and requests (built-in) Activity2 to make the call.

```
<?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:id="@+id/label1"
      android:layout_width="fill_parent"
      android:layout_height="wrap_content"
      android:background="#ff0000cc"
      android:text="This is Activity1"
      android:textStyle="bold"
      android:textSize="20sp"   />
<EditText
      android:id="@+id/text1"
      android:layout_width="fill_parent"
      android:layout_height="54px"
      android:text="tel:555-1234"
      android:textSize="18sp"  />

<Button
      android:id="@+id/btnCallActivity2"
      android:layout_width="149px"
      android:layout_height="wrap_content"
      android:text="Make Phone Call"
      android:textStyle="bold" />
</LinearLayout>
```

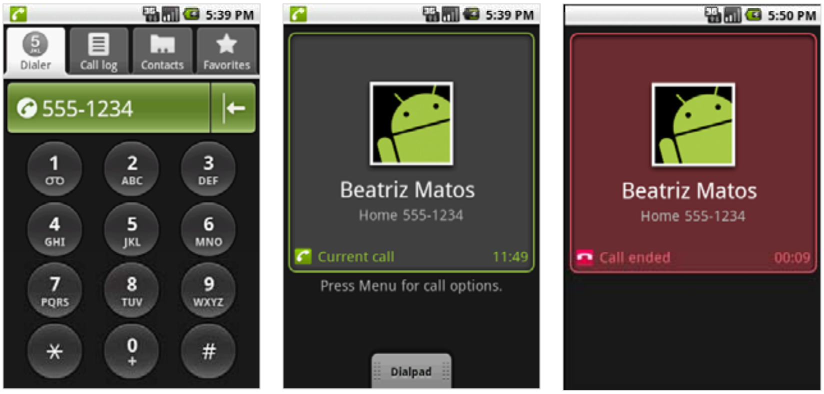


This is Activity1

tel:555-1234

Intents

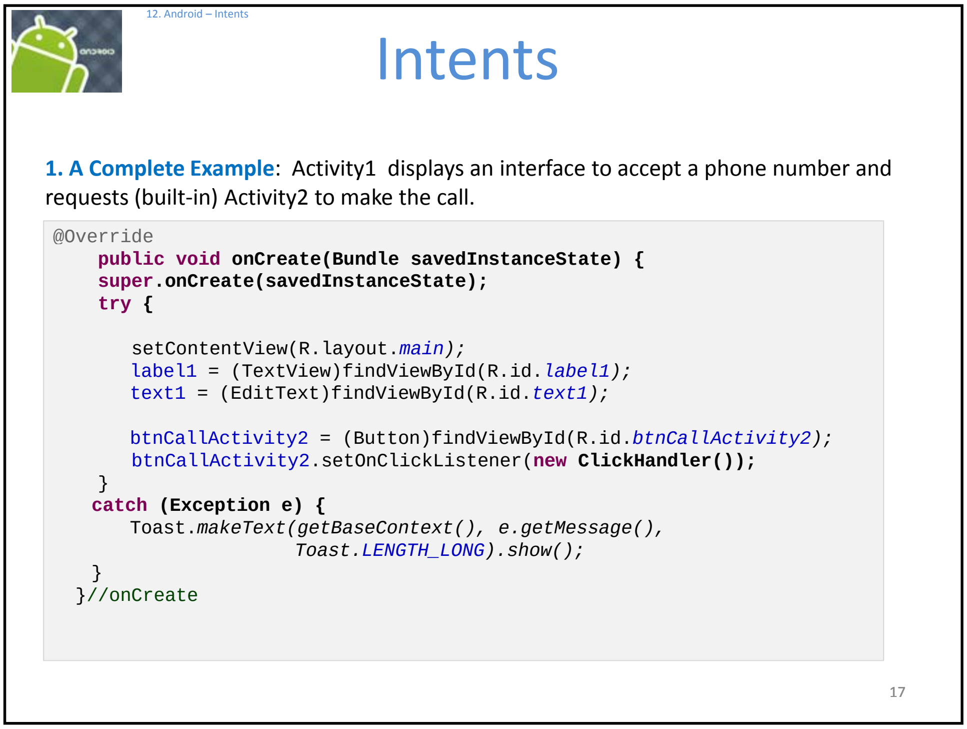
1. A Complete Example: Activity1 displays an interface to accept a phone number and requests (built-in) Activity2 to make the call.



Intents

1. A Complete Example: Activity1 displays an interface to accept a phone number and requests (built-in) Activity2 to make the call.

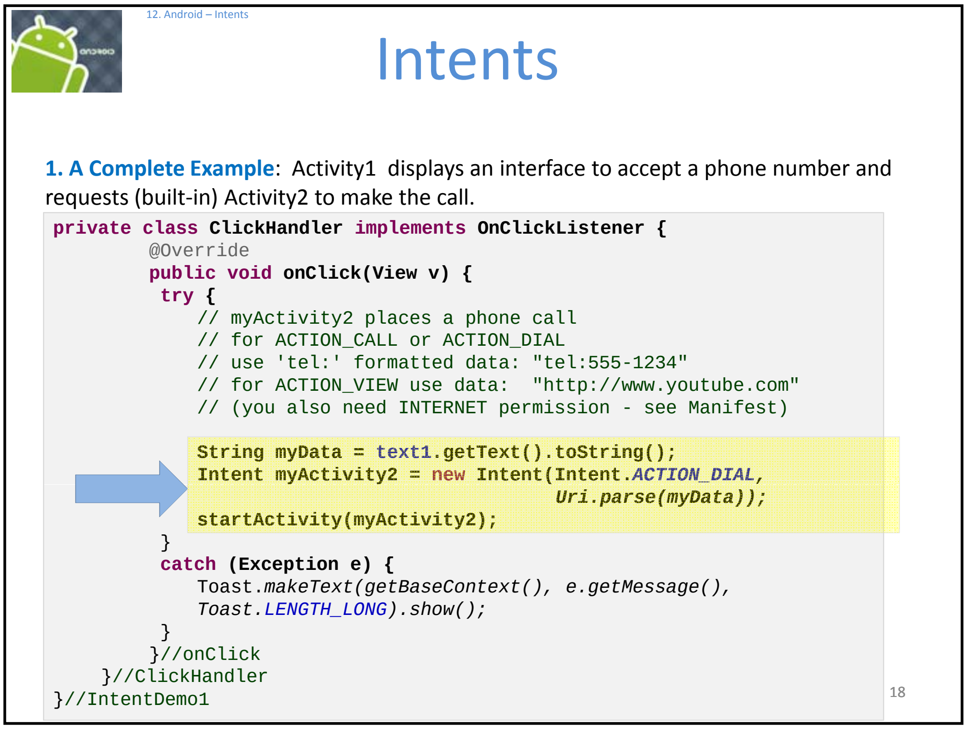
```
//IntentDemo1_Intent: making a phone call
package cis493.intents;
import android.app.Activity;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.*;

public class IntentDemo1 extends Activity {
    TextView label1;
    EditText text1;
    Button   btnCallActivity2;
```



Intents

1. A Complete Example: Activity1 displays an interface to accept a phone number and requests (built-in) Activity2 to make the call.

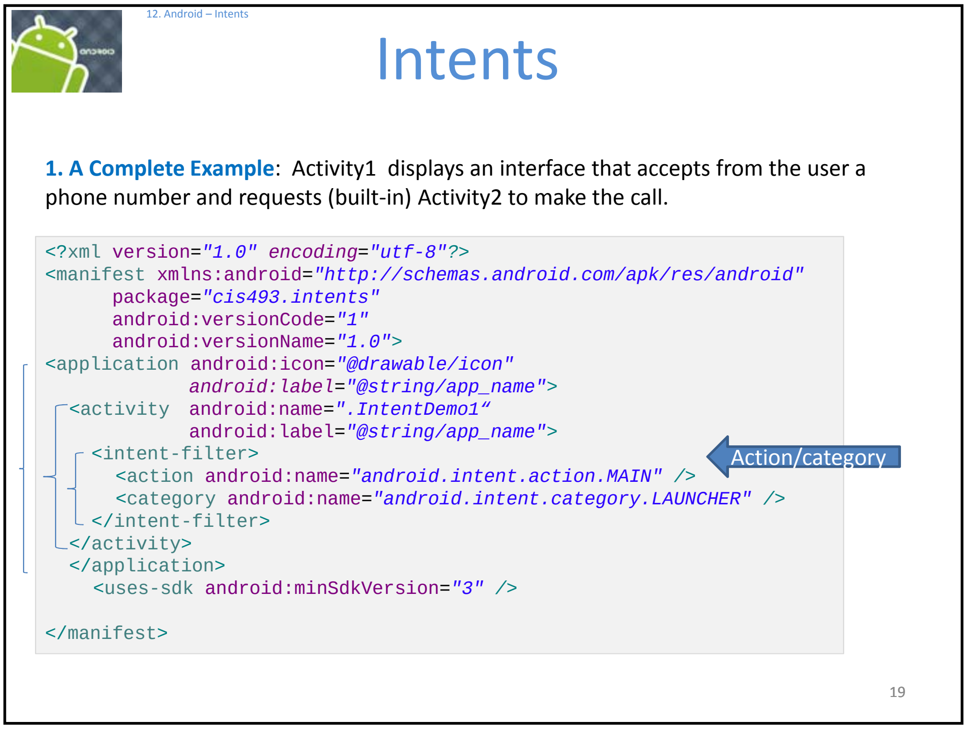
```
@Override
    public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    try {

       setContentView(R.layout.main);
       label1 = (TextView)findViewById(R.id.label1);
       text1 = (EditText)findViewById(R.id.text1);

       btnCallActivity2 = (Button)findViewById(R.id.btnCallActivity2);
       btnCallActivity2.setOnClickListener(new ClickHandler());
    }
   catch (Exception e) {
       Toast.makeText(getBaseContext(), e.getMessage(),
                      Toast.LENGTH_LONG).show();
   }
  }//onCreate
```



Intents

1. A Complete Example: Activity1 displays an interface to accept a phone number and requests (built-in) Activity2 to make the call.

```
private class ClickHandler implements OnClickListener {
         @Override
         public void onClick(View v) {
          try {
             // myActivity2 places a phone call
             // for ACTION_CALL or ACTION_DIAL
             // use 'tel:' formatted data: "tel:555-1234"
             // for ACTION_VIEW use data:  "http://www.youtube.com"
             // (you also need INTERNET permission - see Manifest)

             String myData = text1.getText().toString();
             Intent myActivity2 = new Intent(Intent.ACTION_DIAL,
                                              Uri.parse(myData));
             startActivity(myActivity2);
          }
          catch (Exception e) {
             Toast.makeText(getBaseContext(), e.getMessage(),
             Toast.LENGTH_LONG).show();
          }
         }//onClick
    }//ClickHandler
}//IntentDemo1
```

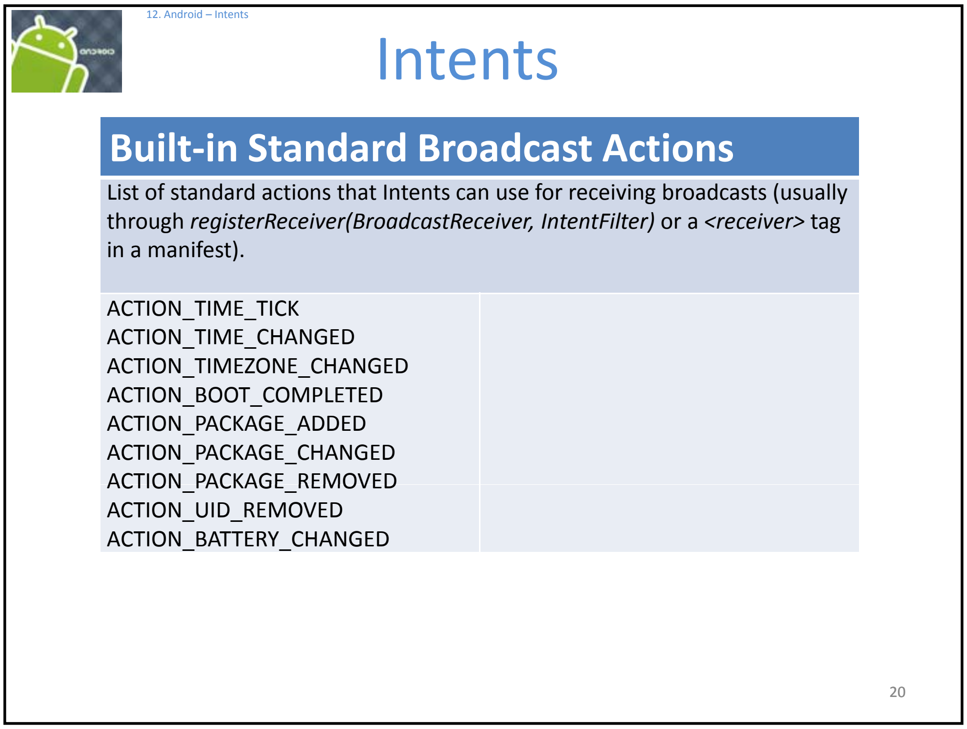


Intents

1. A Complete Example: Activity1 displays an interface that accepts from the user a phone number and requests (built-in) Activity2 to make the call.

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
      package="cis493.intents"
      android:versionCode="1"
      android:versionName="1.0">
<application android:icon="@drawable/icon"
             android:label="@string/app_name">
  <activity  android:name=".IntentDemo1“
             android:label="@string/app_name">
    <intent-filter>
      <action android:name="android.intent.action.MAIN" />
      <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
  </activity>
  </application>
    <uses-sdk android:minSdkVersion="3" />

</manifest>
```

Action/category



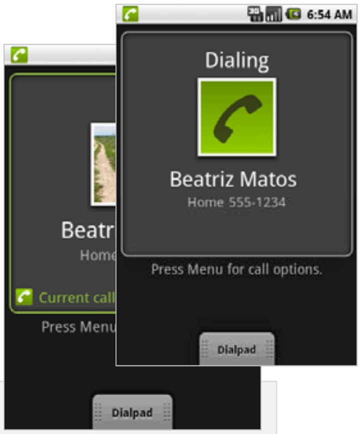
Intents

Built-in Standard Broadcast Actions

List of standard actions that Intents can use for receiving broadcasts (usually through *registerReceiver(BroadcastReceiver, IntentFilter)* or a *<receiver>* tag in a manifest).

ACTION_TIME_TICK
ACTION_TIME_CHANGED
ACTION_TIMEZONE_CHANGED
ACTION_BOOT_COMPLETED
ACTION_PACKAGE_ADDED
ACTION_PACKAGE_CHANGED
ACTION_PACKAGE_REMOVED
ACTION_UID_REMOVED
ACTION_BATTERY_CHANGED

Intents



More Examples: Using Standard Actions

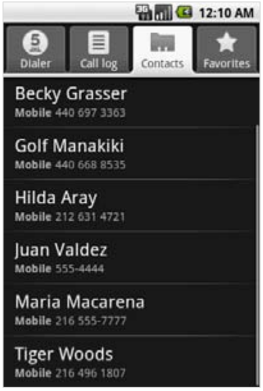
Call Immediately

Modify the *complete* example1 replacing the method 'ClickHandler' with the following code

```
String myData = "tel:555-1234";

Intent myActivity2 = new Intent(Intent.ACTION_CALL,
                                Uri.parse(myData));

startActivity(myActivity2);
```

Needs Permission:
`<uses-permission android:name="android.permission.CALL_PHONE" />`

Intents



Becky Grasser
Mobile 440 697 3363

Golf Manakiki
Mobile 440 668 8535

Hilda Aray
Mobile 212 631 4721

Juan Valdez
Mobile 555-4444

Maria Macarena
Mobile 216 555-7777

Tiger Woods
Mobile 216 496 1807

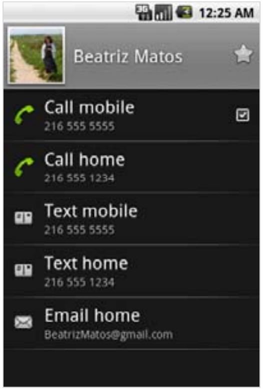
More Examples: Using Standard Actions

Show all your Contacts

Modify the *complete* example1 replacing the method 'ClickHandler' with the following code

```
String myData = "content://contacts/people/";

Intent myActivity2 = new Intent(Intent.ACTION_VIEW,
                                Uri.parse(myData));

startActivity(myActivity2);
```

Intents



12:25 AM

Beatriz Matos

Call mobile
216 555 5555

Call home
216 555 1234

Text mobile
216 555 5555

Text home
216 555 1234

Email home
BeatrizMatos@gmail.com

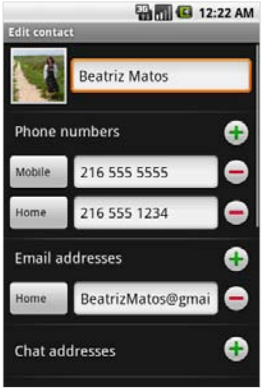
More Examples: Using Standard Actions

Show a Particular Contact (ID = 2)

Modify the *complete* example1 replacing the method ‘ClickHandler’ with the following code

```
String myData = "content://contacts/people/8";

Intent myActivity2 = new Intent(Intent.ACTION_VIEW,
                                Uri.parse(myData));

startActivity(myActivity2);
```

Intents



12:22 AM

Edit contact

Beatriz Matos

Phone numbers

Mobile 216 555 5555

Home 216 555 1234

Email addresses

Home BeatrizMatos@gmai

Chat addresses

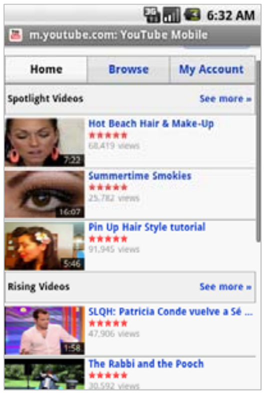
More Examples: Using Standard Actions

Edit a Particular Contact (ID = 8)

Modify the *complete* example1 replacing the method ‘ClickHandler’ with the following code

```
String myData = "content://contacts/people/8";

Intent myActivity2 = new Intent(Intent.ACTION_EDIT,
                                Uri.parse(myData));

startActivity(myActivity2);
```

Intents



More Examples: Using Standard Actions

View a Webpage

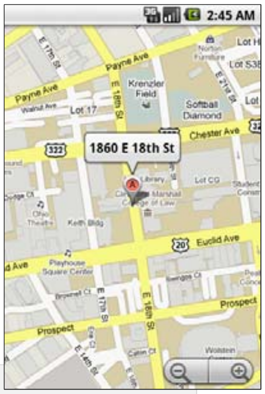
Modify the *complete* example1 replacing the method 'ClickHandler' with the following code

```
String myData = "http://www.youTube.com";

Intent myActivity2 = new Intent(Intent.ACTION_VIEW,
                                Uri.parse(myData));

startActivity(myActivity2);
```

Caution. Add to the Manifest a request to use the Internet:

```
<uses-permission android:name="android.permission.INTERNET" />
```

Intents



More Examples: Using Standard Actions

Geo Mapping an Address

Provide a geoCode expression holding a street address (or place, such as 'golden gate ca') Replace spaces with '+'.

```
String geoCode =
       "geo:0,0?q=1860+east+18th+street+cleveland+oh";
Intent intent = new Intent(Intent.ACTION_VIEW,
                           Uri.parse(geoCode));
startActivity(intent);
```

Modify the Manifest adding the following requests:

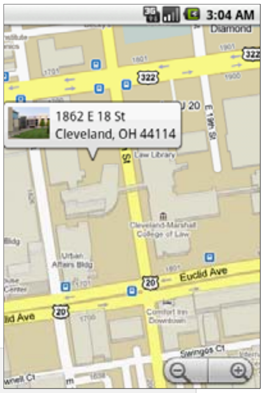
```
<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
<uses-permission android:name="android.permission.INTERNET" />
```

Intents

More Examples: Using Standard Actions

Geo Mapping Coordinates (latitude, longitude)

Provide a geoCode holding latitude and longitude (also an addittional zoom ‘**?z=xx**’ with xx in range 1..23)



```
String geoCode =
        "geo:41.5020952,-81.6789717";
Intent intent = new Intent(Intent.ACTION_VIEW,
                           Uri.parse(geoCode));
startActivity(intent);
```

Modify the Manifest adding the following requests:

```
<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
<uses-permission android:name="android.permission.INTERNET" />
```

Intents

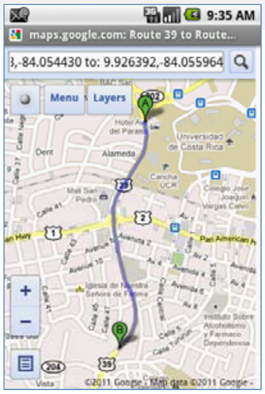
More Examples

// Getting driving directions: how to go from loaction A to location B?

Intent intent = new Intent(android.content.Intent.ACTION_VIEW,

Uri.parse("http://maps.google.com/maps?saddr=9.938083,-84.054430&daddr=9.926392,-84.055964"));

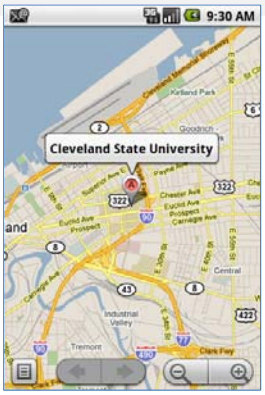
startActivity(intent);


9:35 AM
maps.google.com: Route 39 to Route...
3,-84.054430 to: 9.926392,-84.055964
Menu
Layers
A
B
Universidad de Costa Rica
+
−
©2011 Google - Map data ©2011 Google -

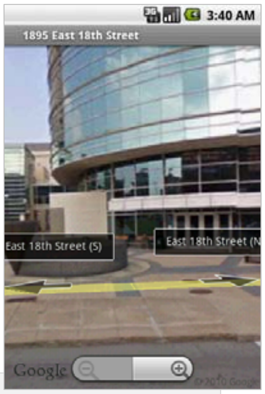
Intents

More Examples

```
// use a mnemonic  to articulate an address
String thePlace = "Cleveland State University";

Intent intent = new Intent(android.content.Intent.ACTION_VIEW,
                           Uri.parse("geo:0,0?q= (" +  thePlace  + ") "  ));
startActivity(intent);
```



Intents



More Examples: Using Standard Actions

Geo Mapping - Google StreetView

geoCode Uri structure:
google.streetview:cbll=***lat*,*lng***&cbp=1,
yaw,,*pitch*,*zoom*&mz=*mapZoom*

Reference: http://developer.android.com/guide/appendix/g-app-intents.html

```
String geoCode =
        "google.streetview:cbll=41.5020952,-81.6789717&cbp=1,270,,45,1&mz=1";

Intent intent = new Intent(Intent.ACTION_VIEW,
                           Uri.parse(geoCode));
startActivity(intent);
```

Modify the Manifest adding the following requests:

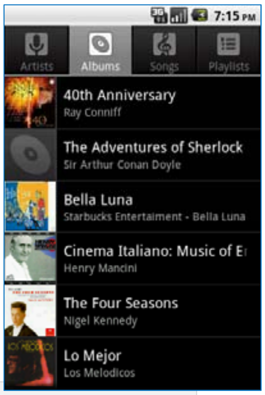
```
<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />
<uses-permission android:name="android.permission.INTERNET" />
```

Intents

More Examples: Using Standard Actions

Launching the Music Player

Reference: http://developer.android.com/guide/appendix/g-app-intents.html



40th Anniversary
Ray Conniff

The Adventures of Sherlock
Sir Arthur Conan Doyle

Bella Luna
Starbucks Entertaiment - Bella Luna

Cinema Italiano: Music of E
Henry Mancini

The Four Seasons
Nigel Kennedy

Lo Mejor
Los Melodicos

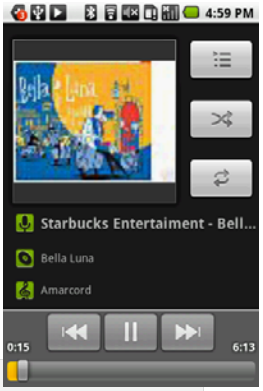
```
//launch music player

Intent myActivity2 =
      new Intent("android.intent.action.MUSIC_PLAYER");

startActivity(myActivity2);
```

Intents

More Examples: Using Standard Actions

Playing a song stored in the SD card

Reference: http://developer.android.com/guide/appendix/g-app-intents.html



```
// play song "amarcord.mp3" saved in the SD
Intent myActivity2 =
       new Intent(android.content.Intent.ACTION_VIEW);

Uri data = Uri.parse("file:///sdcard/amarcord.mp3");
String type = "audio/mp3";

myActivity2.setDataAndType(data, type);

startActivity(myActivity2);
```

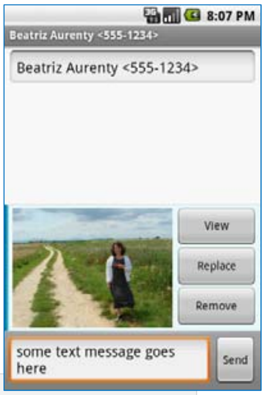
Intents

More Examples: Using Standard Actions

Sending MMS

Add picture #1 from SD to MMS

Reference: http://developer.android.com/guide/appendix/g-app-intents.html



Beatriz Aurenty <555-1234>

Beatriz Aurenty <555-1234>

some text message goes here

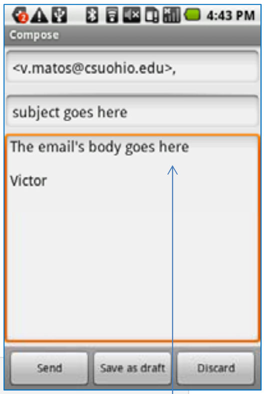
```
//send mms attach picture #1 to it

Uri uri = Uri.parse("content://media/external/images/media/1");

Intent myActivity2 = new Intent(Intent.ACTION_SEND);

myActivity2.putExtra("address", "555-1234");
myActivity2.putExtra("sms_body", "some text message goes here");
myActivity2.putExtra(Intent.EXTRA_STREAM, uri);
myActivity2.setType("image/png");

startActivity(myActivity2);
```

Intents

More Examples: Using Standard Actions

Sending Email

Reference: http://developer.android.com/guide/appendix/g-app-intents.html



<v.matos@csuohio.edu>,

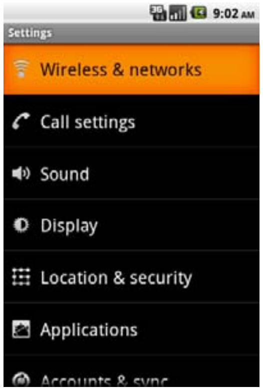
subject goes here

The email's body goes here

Victor

```
// send email
Uri uri = Uri.parse("mailto:v.matos@csuohio.edu");
Intent myActivity2 = new Intent(Intent.ACTION_SENDTO, uri);

// you may skip the next two pieces [subject/text]
myActivity2.putExtra(Intent.EXTRA_SUBJECT,
                     "subject goes here");
myActivity2.putExtra(Intent.EXTRA_TEXT,
                     "The email's body goes here");

startActivity(myActivity2);
```

Intents



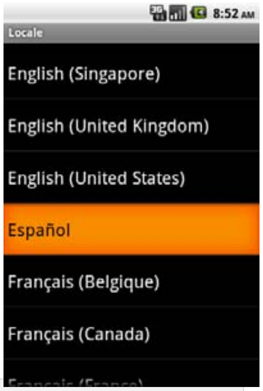
More Examples: Using Standard Actions

Setting System

Reference: http://developer.android.com/reference/android/provider/Settings.html

```
Intent intent = new Intent(
            android.provider.Settings.ACTION_SETTINGS);

startActivity(intent);
```

Intents



More Examples: Using Standard Actions

Setting System Locale: Language & Keyboard

Reference: http://developer.android.com/reference/android/provider/Settings.html

```
Intent intent = new Intent(

          android.provider.Settings.ACTION_LOCALE_SETTINGS);

startActivity(intent);
```

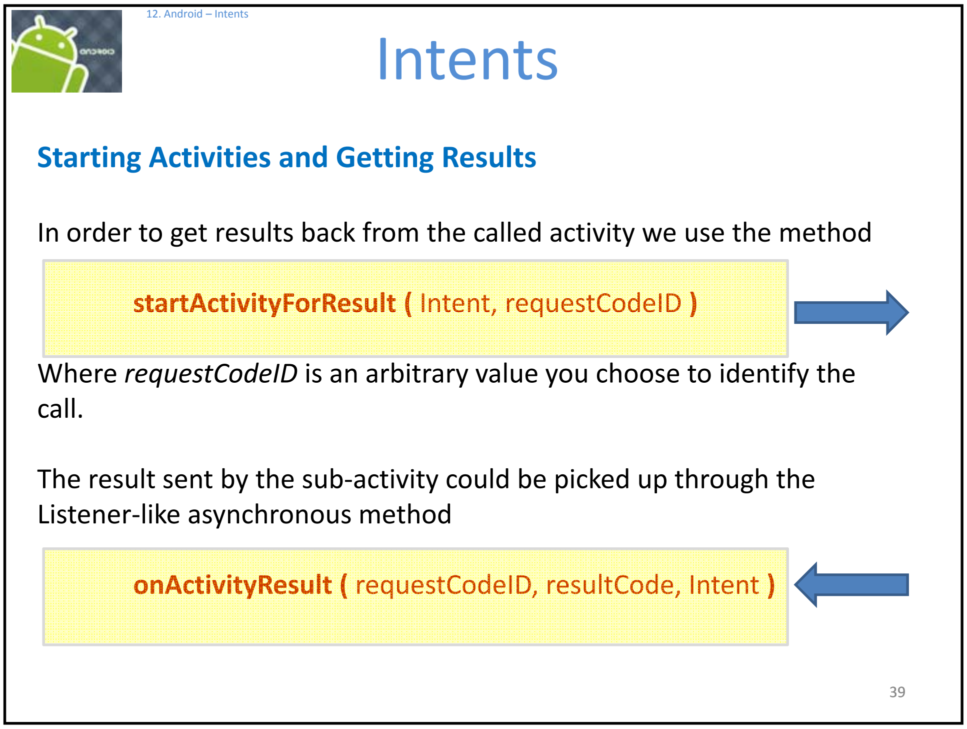
Intents

Starting Activities and Getting Results

The **startActivity(Intent)** method is used to start a new activity, which will be placed at the top of the activity stack. The caller however continues to execute in its own thread.

Sometimes you want to get a result back from the called sub-activity when it ends.

For example, you may start an activity that let the user pick a person from a list of contacts; when it ends, it returns the person that was selected.



Intents

Starting Activities and Getting Results

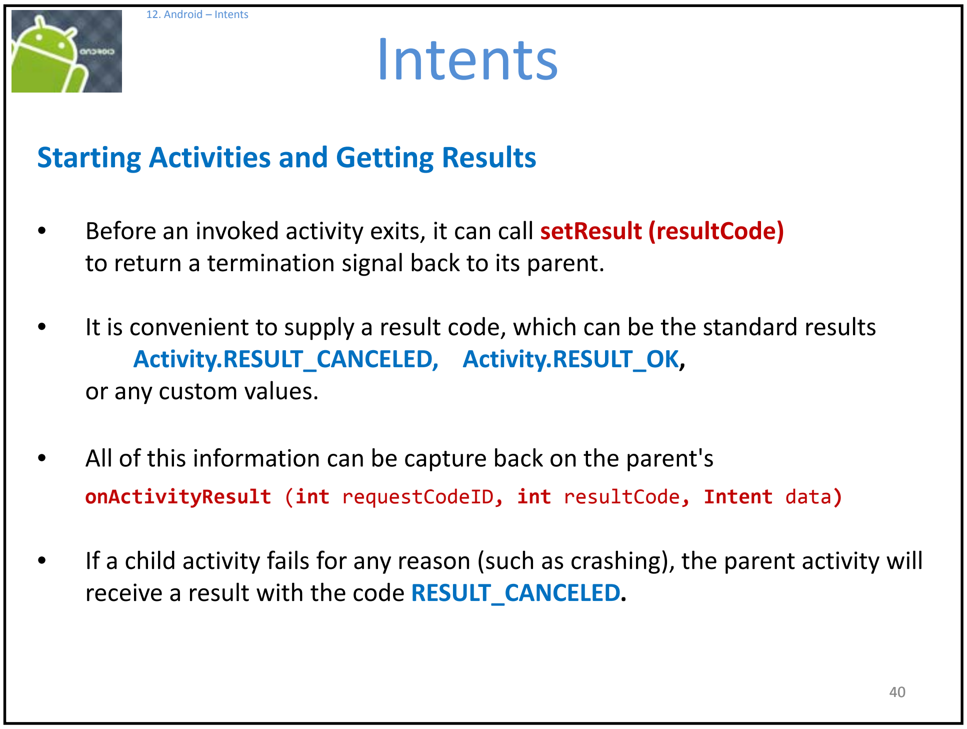
In order to get results back from the called activity we use the method

startActivityForResult (Intent, requestCodeID **)**

Where *requestCodeID* is an arbitrary value you choose to identify the call.

The result sent by the sub-activity could be picked up through the Listener-like asynchronous method

onActivityResult (requestCodeID, resultCode, Intent **)**



Intents

Starting Activities and Getting Results

- Before an invoked activity exits, it can call **setResult (resultCode)** to return a termination signal back to its parent.

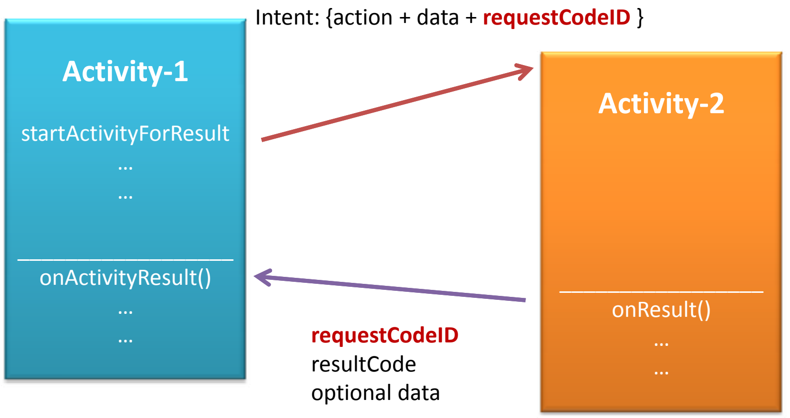
- It is convenient to supply a result code, which can be the standard results
  Activity.RESULT_CANCELED, **Activity.RESULT_OK**,
  or any custom values.

- All of this information can be capture back on the parent's
  `onActivityResult (int requestCodeID, int resultCode, Intent data)`

- If a child activity fails for any reason (such as crashing), the parent activity will receive a result with the code **RESULT_CANCELED**.

Intents

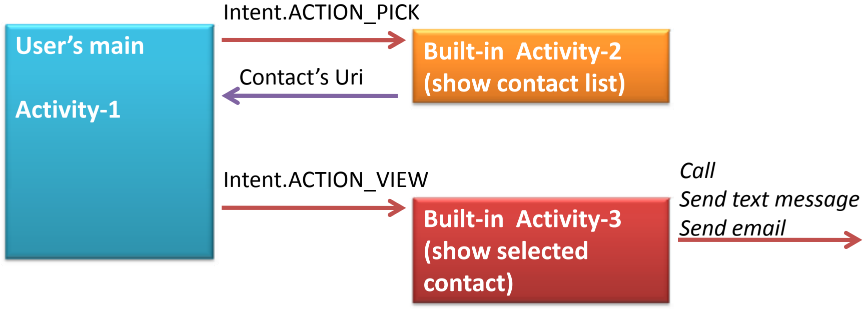
Starting Activities and Getting Results



Intents

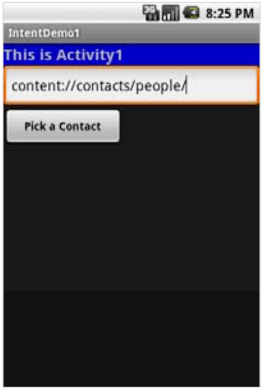
Example2. Let’s play golf - Call for a tee-time.

1. Show all contacts and pick a particular one (*Intent.ACTION_PICK*).
2. For a successful interaction the main-activity accepts the returned URI identifying the person we want to call (*content://contacts/people/n*).
3. ‘Nicely’ show the selected contact’s entry allowing calling, texting, emailing actions (Intent.ACTION_VIEW).

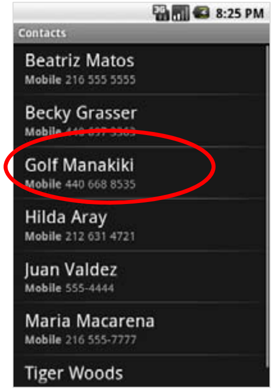


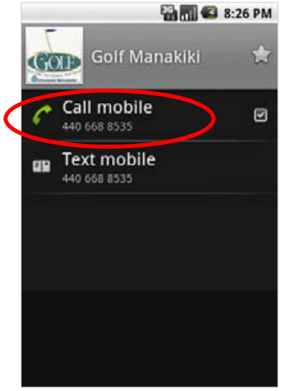
Intents

Example2. Let’s play golf - *Call for a tee-time*.



content://contacts/people/





Cont.

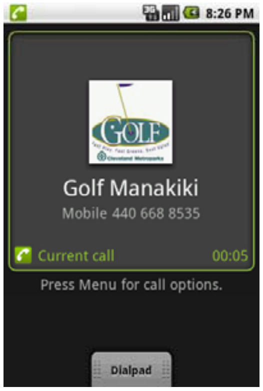
Main Activity

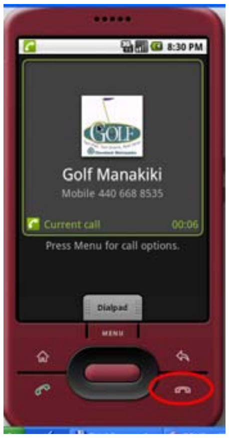
Intent.ACTION_PICK

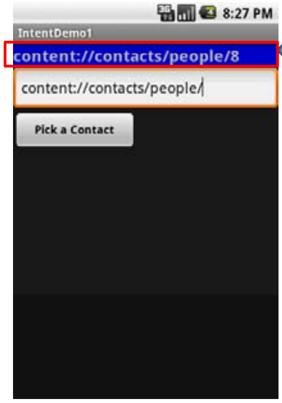
Intent.ACTION_VIEW

Intents

Example2 (cont.) Let’s play golf - *Call for a tee-time*







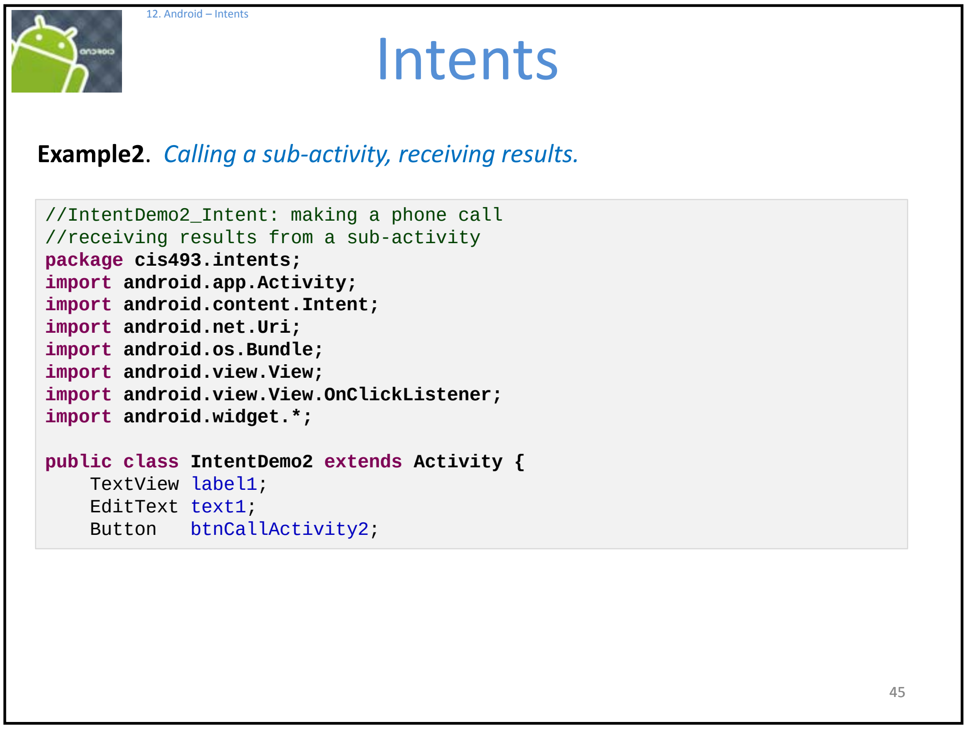
content://contacts/people/8

content://contacts/people/

Place the call

Terminate the call

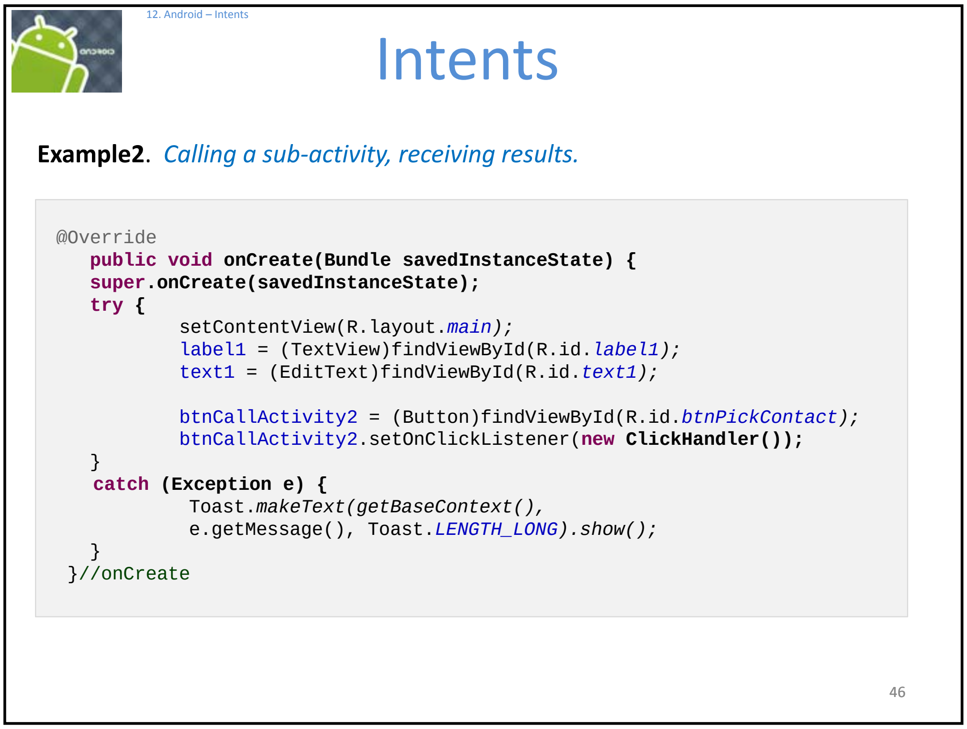
Selected contact’s URI



Intents

Example2. *Calling a sub-activity, receiving results.*

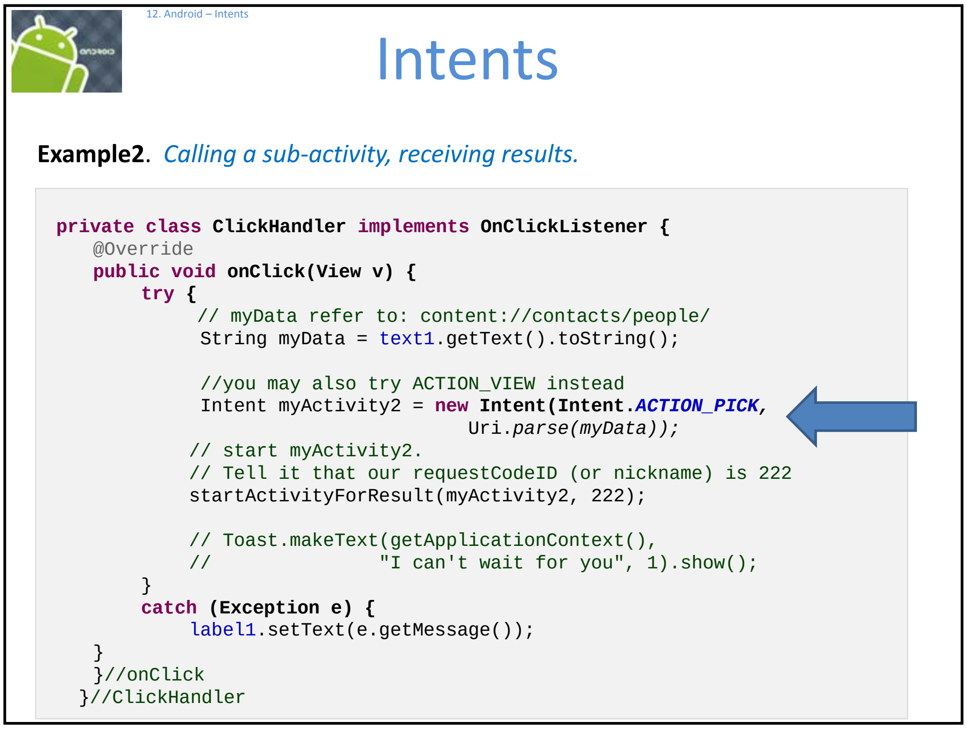
```
//IntentDemo2_Intent: making a phone call
//receiving results from a sub-activity
package cis493.intents;
import android.app.Activity;
import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.*;

public class IntentDemo2 extends Activity {
    TextView label1;
    EditText text1;
    Button   btnCallActivity2;
```



Intents

Example2. *Calling a sub-activity, receiving results.*

```
 @Override
    public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    try {
            setContentView(R.layout.main);
            label1 = (TextView)findViewById(R.id.label1);
            text1 = (EditText)findViewById(R.id.text1);

            btnCallActivity2 = (Button)findViewById(R.id.btnPickContact);
            btnCallActivity2.setOnClickListener(new ClickHandler());
    }
    catch (Exception e) {
             Toast.makeText(getBaseContext(),
             e.getMessage(), Toast.LENGTH_LONG).show();
    }
  }//onCreate
```

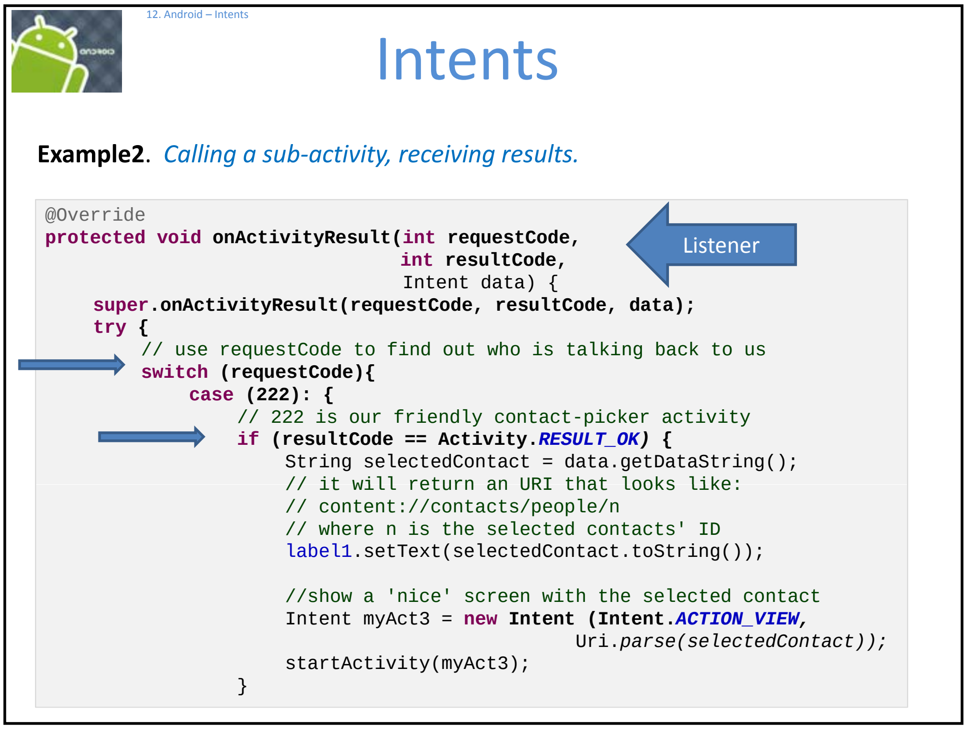


12. Android – Intents

Intents

Example2. *Calling a sub-activity, receiving results.*

```
private class ClickHandler implements OnClickListener {
   @Override
   public void onClick(View v) {
       try {
            // myData refer to: content://contacts/people/
            String myData = text1.getText().toString();

            //you may also try ACTION_VIEW instead
            Intent myActivity2 = new Intent(Intent.ACTION_PICK,
                                        Uri.parse(myData));
           // start myActivity2.
           // Tell it that our requestCodeID (or nickname) is 222
           startActivityForResult(myActivity2, 222);

           // Toast.makeText(getApplicationContext(),
           //                "I can't wait for you", 1).show();
       }
       catch (Exception e) {
           label1.setText(e.getMessage());
   }
   }//onClick
  }//ClickHandler
```



12. Android – Intents

Intents

Example2. *Calling a sub-activity, receiving results.*

Listener

```
@Override
protected void onActivityResult(int requestCode,
                                int resultCode,
                                Intent data) {
    super.onActivityResult(requestCode, resultCode, data);
    try {
        // use requestCode to find out who is talking back to us
        switch (requestCode){
            case (222): {
                // 222 is our friendly contact-picker activity
                if (resultCode == Activity.RESULT_OK) {
                    String selectedContact = data.getDataString();
                    // it will return an URI that looks like:
                    // content://contacts/people/n
                    // where n is the selected contacts' ID
                    label1.setText(selectedContact.toString());

                    //show a 'nice' screen with the selected contact
                    Intent myAct3 = new Intent (Intent.ACTION_VIEW,
                                                Uri.parse(selectedContact));
                    startActivity(myAct3);
                }
```

Intents

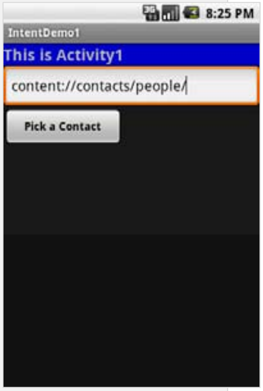
Example2. *Calling a sub-activity, receiving results.*

```
                 else {
                     //user pressed the BACK button
                     label1.setText("Selection CANCELLED "
                                    + requestCode + " " + resultCode);
                     }
                     break;
                 }
         }//switch
     }
     catch (Exception e) {
         Toast.makeText(getBaseContext(), e.getMessage(),
                        Toast.LENGTH_LONG).show();
     }
  }// onActivityResult

}//IntentDemo2
```

Intents

Example2. *Calling a sub-activity, receiving results.*

```
<?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:id="@+id/label1"
          android:layout_width="fill_parent"
          android:layout_height="wrap_content"
          android:background="#ff0000cc"
          android:text="This is Activity1"
          android:textStyle="bold"
          android:textSize="20sp“/>
     <EditText
          android:id="@+id/text1"
          android:layout_width="fill_parent"
          android:layout_height="54px"
          android:text="content://contacts/people/"
          android:textSize="18sp”  />
     <Button
          android:id="@+id/btnPickContact"
          android:layout_width="149px"
          android:layout_height="wrap_content"
          android:text="Pick a Contact"
          android:textStyle="bold“ />
</LinearLayout>
```



This is Activity1

content://contacts/people/

Intents

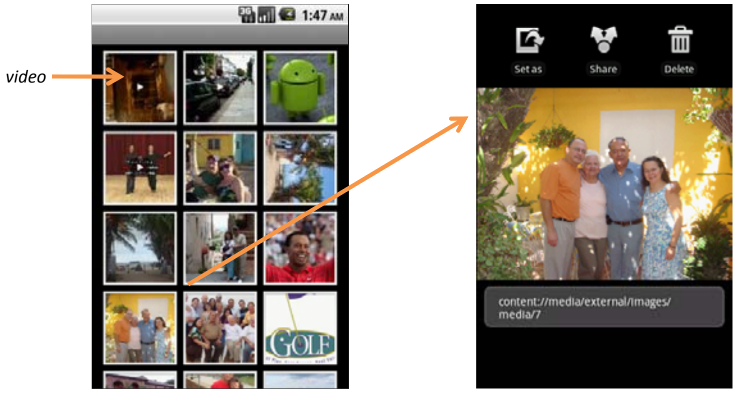
Example3. Showing Pictures and Video - Calling a sub-activity, receiving results.

```
private void showSoundTracks() {

  Intent myIntent = new Intent();
  myIntent.setType("video/*, images/*");
  myIntent.setAction(Intent.ACTION_GET_CONTENT);
  startActivityForResult(myIntent, 0);

}//showSoundTracks


@Override
protected void onActivityResult(int requestCode, int resultCode, Intent intent) {
  super.onActivityResult(requestCode, resultCode, intent);

  if ((requestCode == 0) && (resultCode == Activity.RESULT_OK)) {

      String selectedImage = intent.getDataString();

      Toast.makeText(this, selectedImage, 1).show();

      // show a 'nice' screen with the selected image
      Intent myAct3 = new Intent(Intent.ACTION_VIEW, Uri.parse(selectedImage));
      startActivity(myAct3);
  }
}//onActivityResult
```

All videos and all still images

Intents

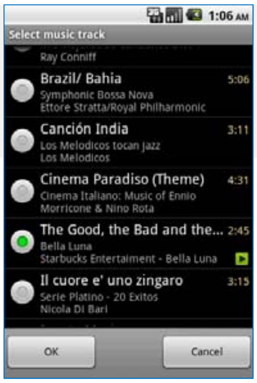
Example3. Showing Pictures and Video - Calling a sub-activity, receiving results.



Intents

Example4. Showing/Playing Sound Tracks - Calling a sub-activity, receiving results.

```
private void showSoundTracks() {
  Intent myIntent = new Intent();
  myIntent.setType("audio/mp3");
  myIntent.setAction(Intent.ACTION_GET_CONTENT);
  startActivityForResult(myIntent, 0);
}//showSoundTracks
```


Select music track

Ray Conniff

Brazil/ Bahia 5:06
Symphonic Bossa Nova
Ettore Stratta/Royal Philharmonic

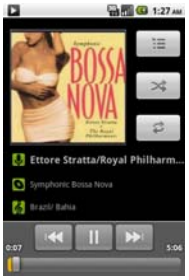
Canción India 3:11
Los Melodicos tocan jazz
Los Melodicos

Cinema Paradiso (Theme) 4:31
Cinema Italiano: Music of Ennio Morricone & Nino Rota

The Good, the Bad and the... 2:45
Bella Luna
Starbucks Entertaiment - Bella Luna

Il cuore e' uno zingaro 3:15
Serie Platino - 20 Exitos
Nicola Di Bari

The returned string value is similar to the following "content://media/external/audio/media/14" ACTION_VIEW on that Uri would produce a result similar to the image on the right


Ettore Stratta/Royal Philharm...
Symphonic Bossa Nova
Brazil/ Bahia

Intents

Questions ?

Intents

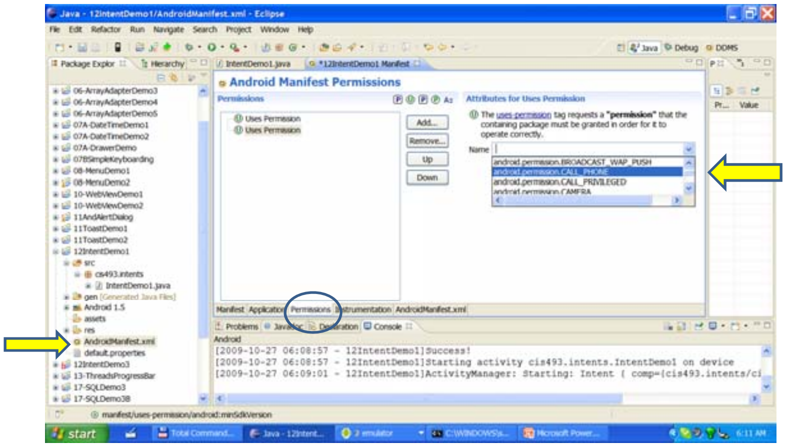
Built-in Standard Broadcast Actions

List of standard actions that Intents can use for receiving broadcasts (usually through *registerReceiver(BroadcastReceiver, IntentFilter)* or a *<receiver>* tag in a manifest).

ACTION_TIME_TICK
ACTION_TIME_CHANGED
ACTION_TIMEZONE_CHANGED
ACTION_BOOT_COMPLETED
ACTION_PACKAGE_ADDED
ACTION_PACKAGE_CHANGED
ACTION_PACKAGE_REMOVED
ACTION_UID_REMOVED
ACTION_BATTERY_CHANGED

Intents

Appendix: Getting Permissions



The uses-permission tag requests a "permission" that the containing package must be granted in order for it to operate correctly.

Name: android.permission.BROADCAST_WAP_PUSH / android.permission.CALL_PHONE / android.permission.CALL_PRIVILEGED / android.permission.CAMERA

```
[2009-10-27 06:08:57 - 12IntentDemo1]Success!
[2009-10-27 06:08:57 - 12IntentDemo1]Starting activity cis493.intents.IntentDemo1 on device
[2009-10-27 06:09:01 - 12IntentDemo1]ActivityManager: Starting: Intent { comp={cis493.intents/ci
```

manifest/uses-permission/android:minSdkVersion

Becomes:
`<uses-permission android:name="android.permission.CALL_PHONE"></uses-permission>`