

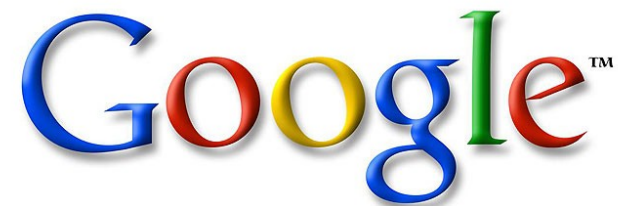
Introduction to Android Multimedia

CS 436 Software Development on Mobile

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ANDROID



Android Intent

Intent ,Intent-filter

What is Intent ?

- Intent is a **message sent from one program to another** (message dispatcher) to tell the system what to do next.
- Typically an intent consists of two parts; an **action** and the **data**

Intent ,Intent-filter

Two types of Intent

- 1)Implicit intent (no specific component)
- 2)Explicit intent (have specified component)

Intent ,Intent-filter

Implicit intent example



Application

Pizza



Operating system

Intent ,Intent-filter

Implicit intent example



Application

What do you want ?



Water



Tea



Coffee

Operating system

Intent ,Intent-filter

Explicit intent example



Application

Cupcake



Operating system

Intent: Android example

Scenario: Send SMS

Activity A

Permission: ACTION_SENDTO

Intent: ACTION_SENDTO
Extras: "0896123456", "Hello world"

Activity B

(SMS manager)

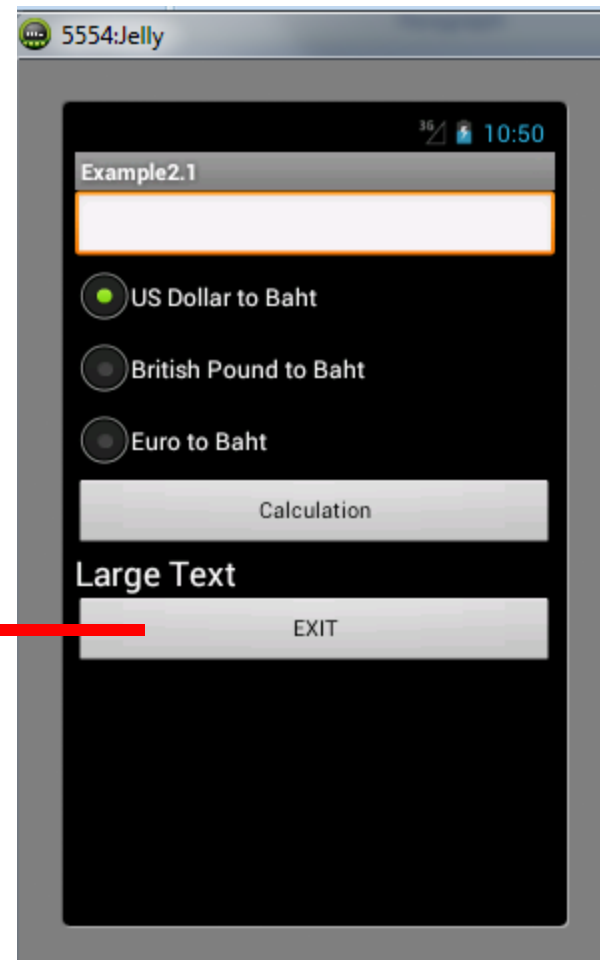
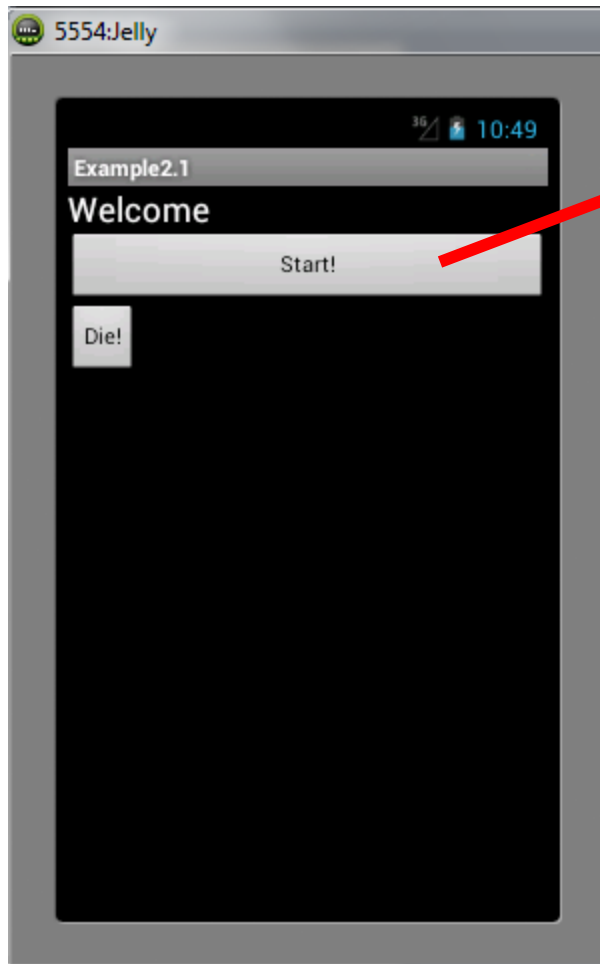
Intent-Filter: ACTION_SENDTO

Intent: ACTION_SENDTO
Extras: "0896123456", "Hello world"

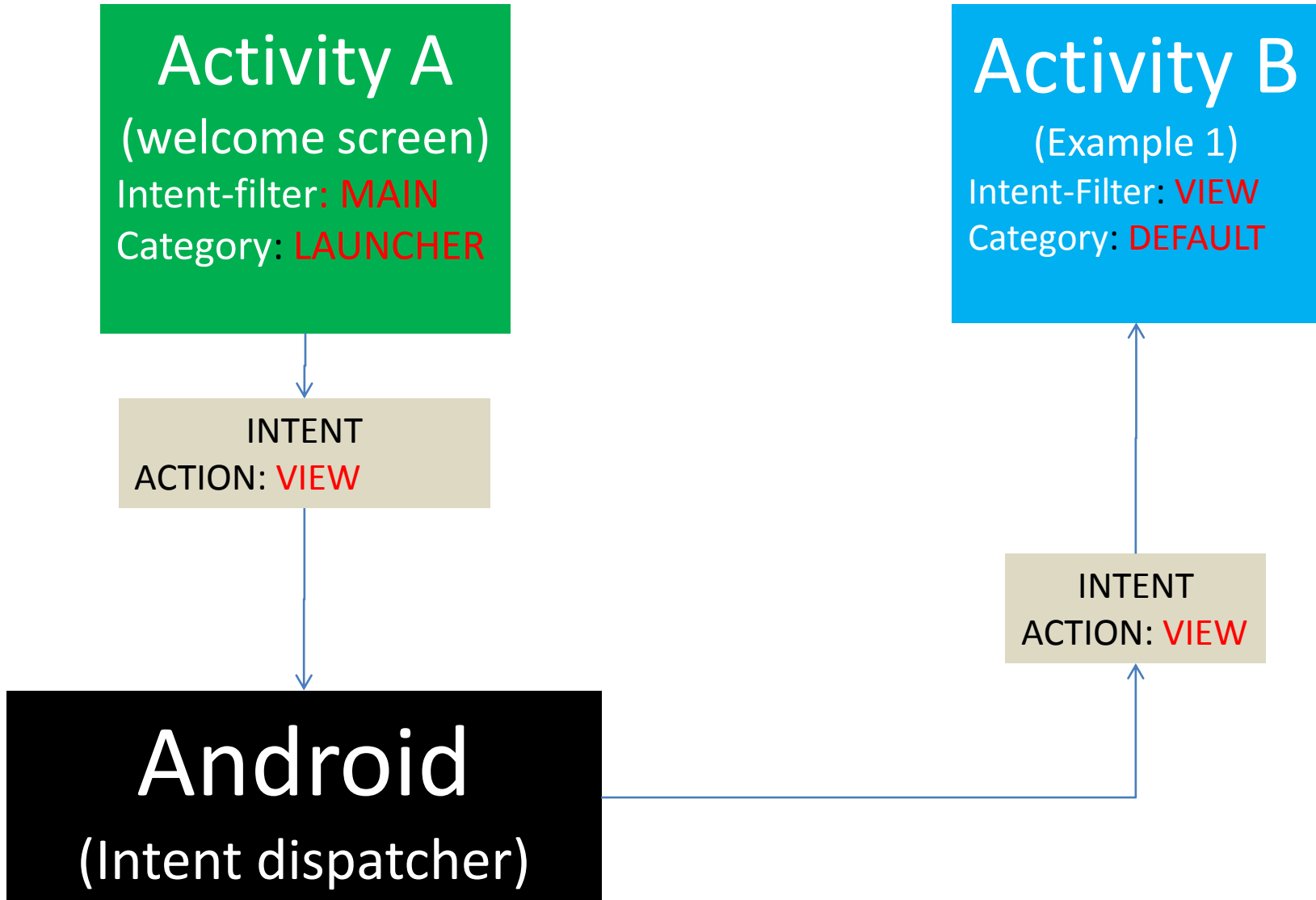
Android
(Intent dispatcher)



Example 2.1



Example 2.1



Example 2.1: Welcome screen

1. Create Welcome screen Activity
2. Assign **Action.MAIN** to Activity A (Welcome screen Activity)
3. Assign intent-filter **Actoin.VIEW** to Activity B (currency conversion activity)
4. Create Intent **startActivity** in Activity A

Example 2.1: Create intent-filter

```
package="example.ex2_1"
android:versionCode="1"
android:versionName="1.0" >

<uses-sdk android:minSdkVersion="10" />

<application
    android:icon="@drawable/ic_launcher"
    android:label="@string/app_name" >
    <activity
        android:name=".welcome"
        android:label="@string/app_name"
        >
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>

    <activity
        android:name="example.ex2_1.Android_ex2_1currencyActivity"
        android:label="@string/app_name" >
        <intent-filter>
            <action android:name="android.intent.action.VIEW" />
            <category android:name="android.intent.category.DEFAULT" />
        </intent-filter>
    </activity>
</application>

</manifest>
```


Activity A

Activity B

AndroidManifest.xml

Example 2.1: Create intent

```
Intent i=new Intent(welcome.this  
,Android_ex2_1currencyActivity.class);
```



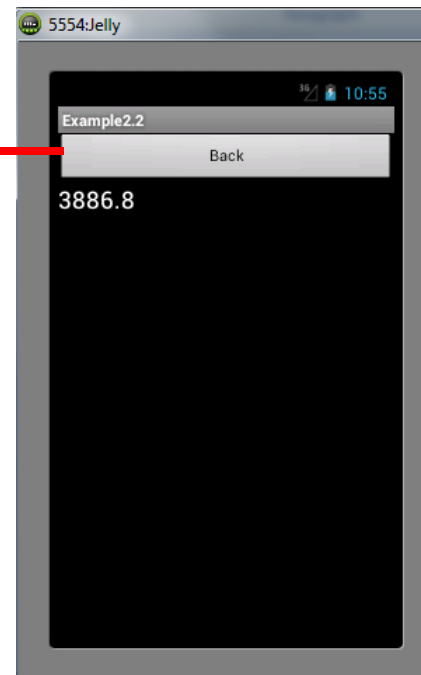
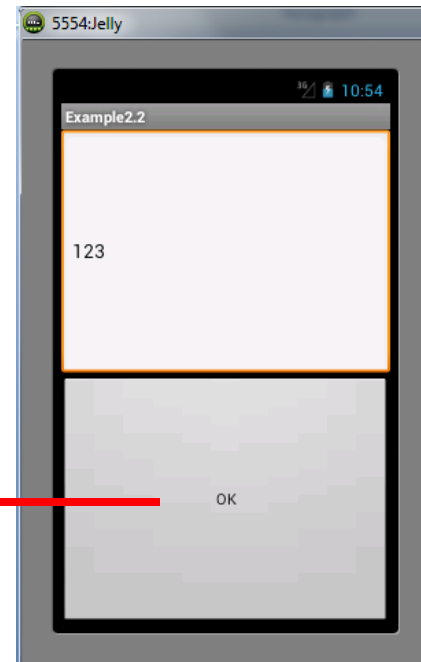
Instantiation

```
startActivity(i);
```

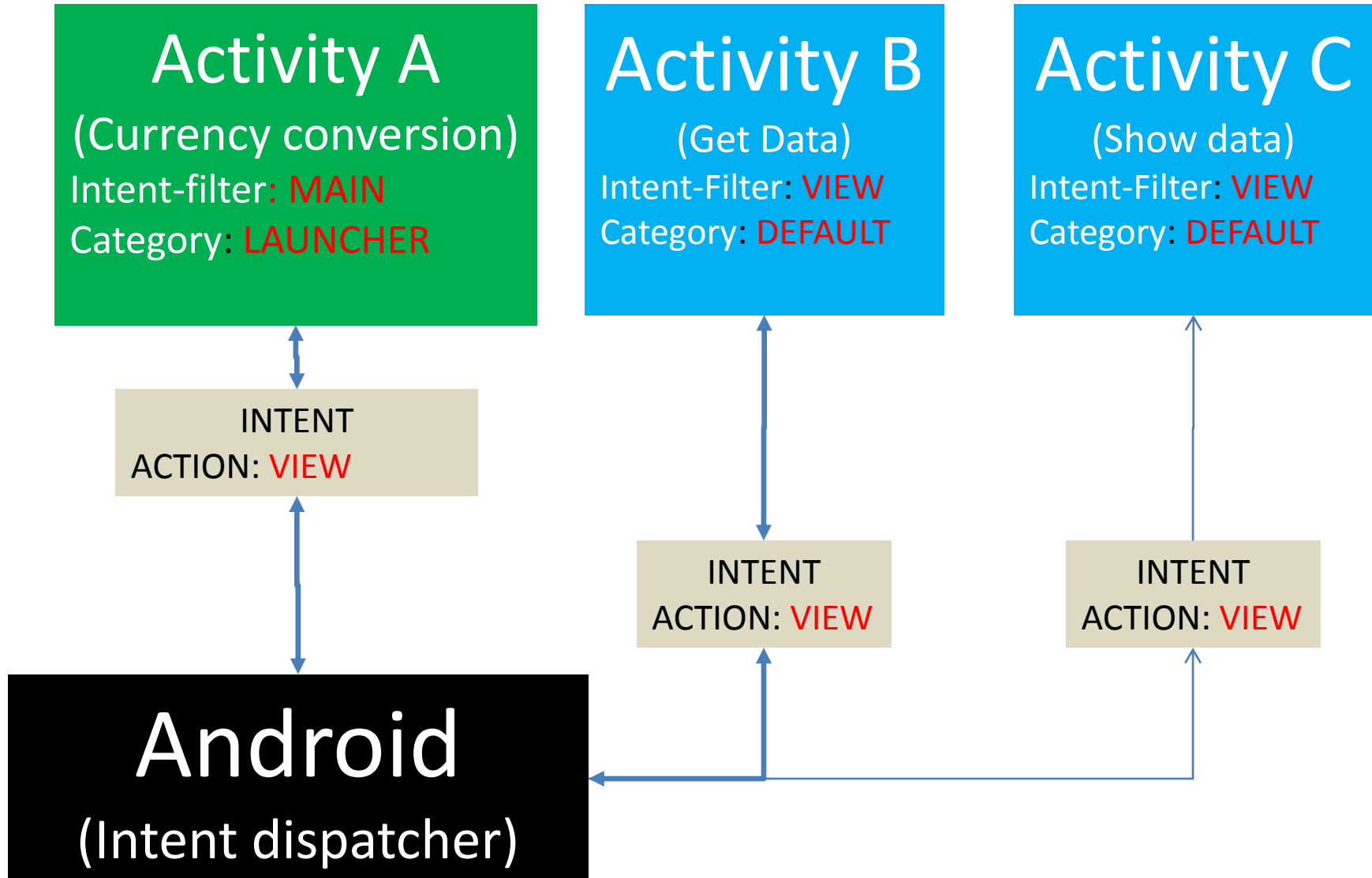


Fire intent!

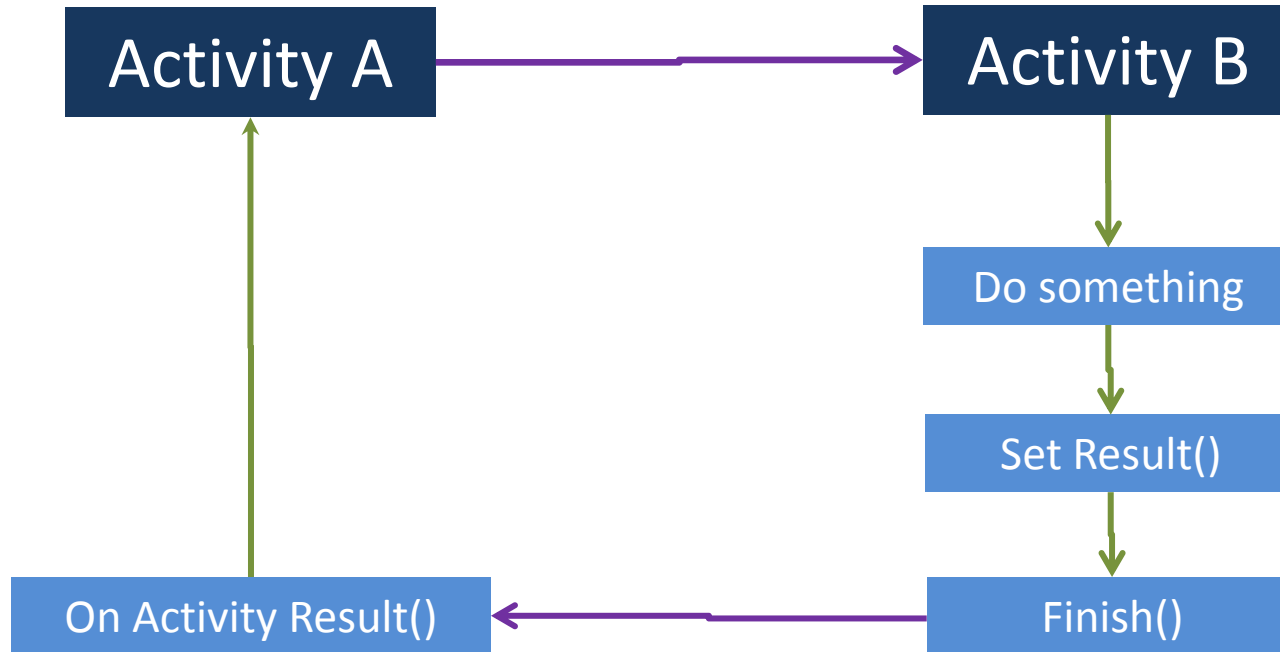
Example 2.2



Example 2.2



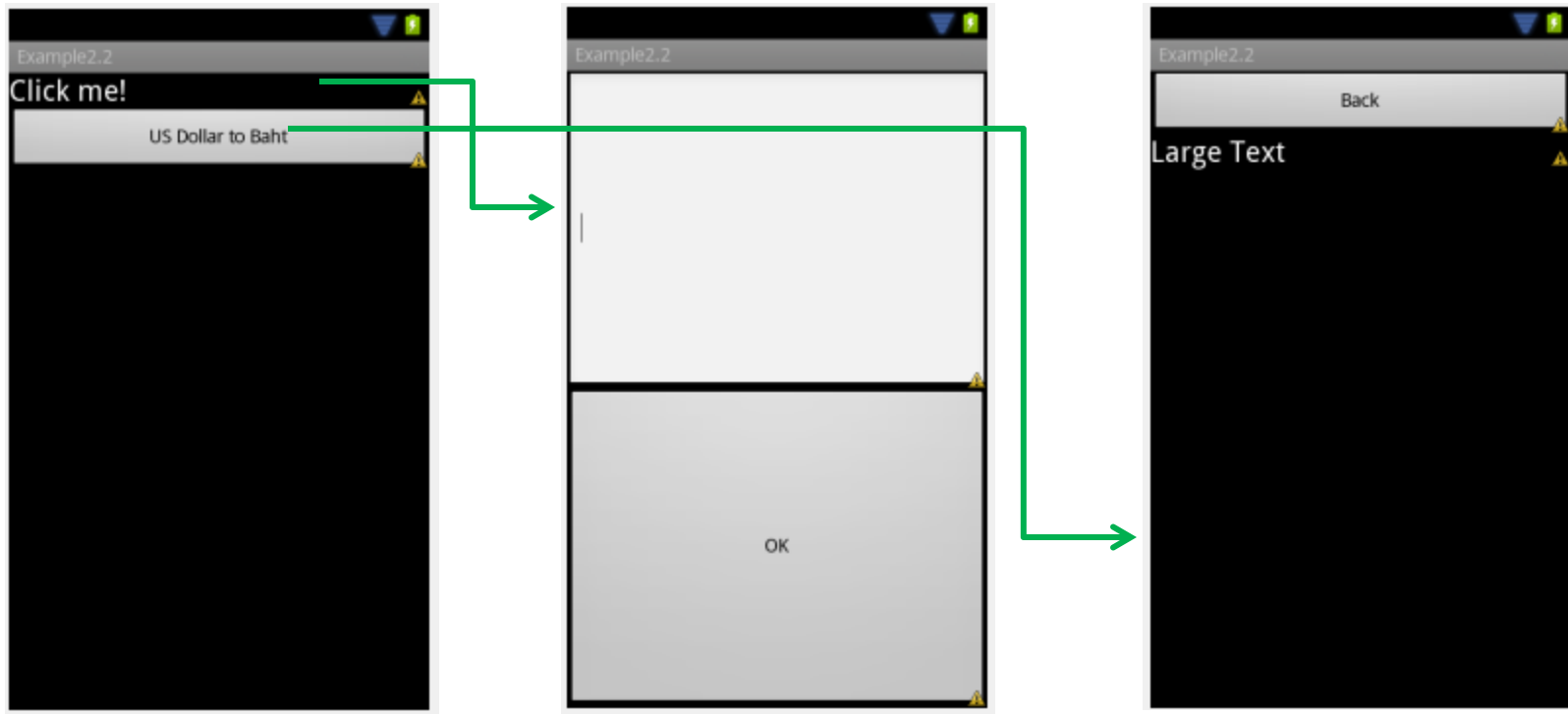
Example 2.2



Example 2.2

1. Create Main Activity (Activity A)
2. Create Input Dialog Activity (Activity B)
3. Create Display Result Dialog Activity (Activity C)
4. Create Intent-filter in AndroidManifest
5. Create Intent instant
6. Create Bundle instant for data exchange
7. Override onActivityResult to get data
8. Store data in Hash Map

Example 2.2(Layout)



Activity A
(main)

Activity B
(input)

Activity C
(output)

Example 2.2(AndroidManifest)

```
<application
  android:icon="@drawable/ic_launcher"
  android:label="@string/app_name" >
  <activity
    android:name=".Android_ex2_currency2Activity"
    android:label="@string/app_name" >
    <intent-filter>
      <action android:name="android.intent.action.MAIN" />

      <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
  </activity>

  <activity
    android:name=".input_dialog"
    android:label="@string/app_name" >
    <intent-filter>
      <action android:name="android.intent.action.VIEW" />

      <category android:name="android.intent.category.DEFAULT" />
    </intent-filter>
  </activity>

  <activity
    android:name="example.ex2_2.result_dialog"
    android:label="@string/app_name" >
    <intent-filter>
      <action android:name="android.intent.action.VIEW" />

      <category android:name="android.intent.category.DEFAULT" />
    </intent-filter>
  </activity>
</application>
```

Activity A


Activity B

Activity C

Example 2.2: Source code

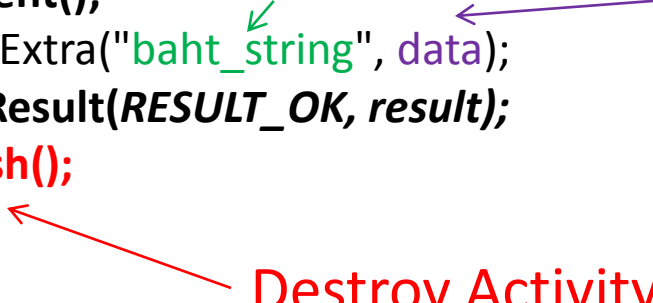
1) Call Activity B

```
Intent i=new Intent(Activity A Android_ex2_currency2Activity.this ,Activity B input_dialog.class);  
startActivityForResult(i,Unique Number 1234);
```



2) Activity B Return Value

```
Intent result=new Intent();  
    result.putExtra(Hash Key "baht_string", Hash data data);  
input_dialog.this.setResult(RESULT_OK, result);  
Destroy Activity input_dialog.this.finish();
```



Example 2.2: Source code

1) Activity A Get data returned from Activity B

```
@Override
```

```
protected void onActivityResult(int requestCode, int resultCode, Intent data) {
```

```
// TODO Auto-generated method stub
```

```
super.onActivityResult(requestCode, resultCode, data);
```

```
switch(requestCode) {
```

```
case (1234): {
```

```
    if (resultCode == Activity.RESULT_OK){
```

```
        // TODO Extract the data returned from the child Activity.
```

```
        data=(data.getStringExtra("baht_string"));
```

```
    }
```

```
    break;
```

```
}
```

```
}
```

```
}
```

Unique Number

Hash Key

Example 2.2: Source code

3) Call Activity C with bundle value

Activity A

Activity C

```
Intent i=new Intent(Android_ex2_currency2Activity.this ,result_dialog.class);  
i.putExtra("result_string", data);  
startActivity(i);
```

Hash Key

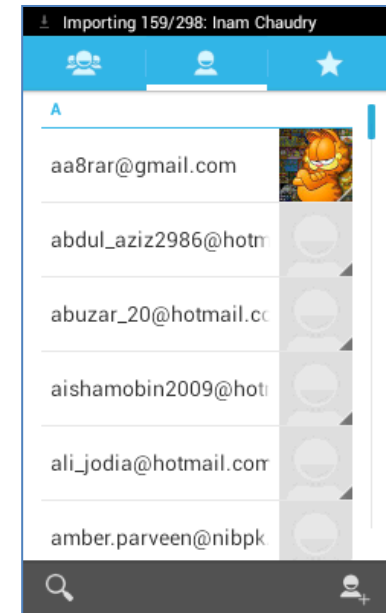
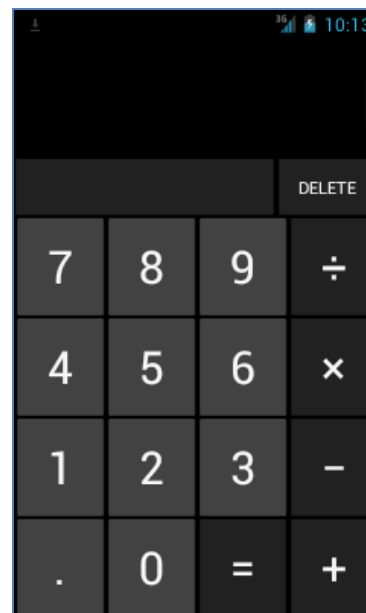
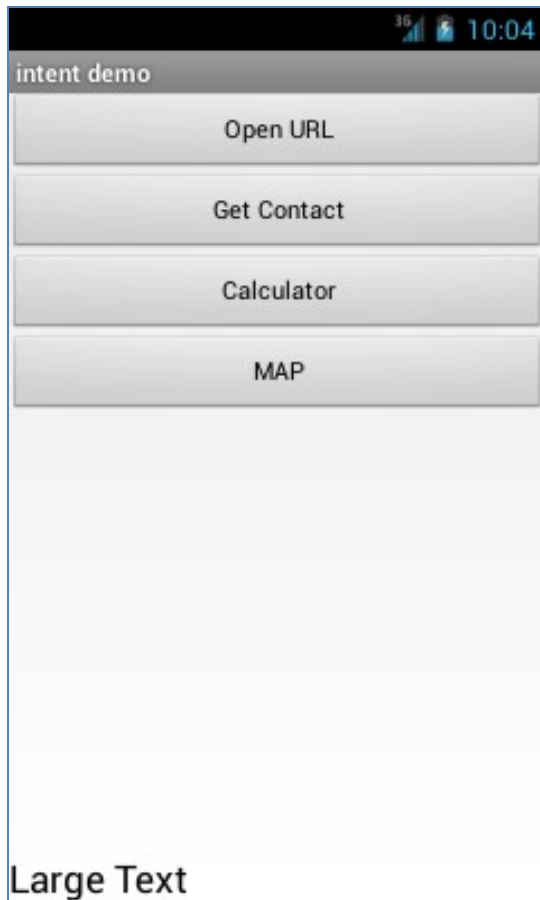
Hash data

4) Get Bundle data

```
Bundle extras = getIntent().getExtras();  
if (extras != null) {  
    textview1.setText( extras.getString("result_string"));  
}
```

Hash Key

Implicit intent



Project: android_ex_implicit_intent

Implicit intent

View:URL

```
Intent i = new Intent(Intent.ACTION_VIEW, Uri
.parse("http://www.kapook.com"));
startActivity(i);
```

Explicit Class

```
Intent i = new Intent();
i.setClassName("com.android.calculator2","com.android.calculator2.Calculator");
startActivity(i);
```

View:Geography

```
Uri uri = Uri.parse("geo:13.835019,100.027153");
Intent intent = new Intent(Intent.ACTION_VIEW, uri);
startActivity(intent);
```


Implicit intent

Pick:Contact

```
Intent i = new Intent(Intent.ACTION_PICK,  
ContactsContract.Contacts.CONTENT_URI);  
startActivityForResult(i, 1);
```

```
@Override  
protected void onActivityResult(int requestCode, int resultCode, Intent data) {  
    super.onActivityResult(requestCode, resultCode, data);  
    switch (requestCode) {  
        case 1:  
            if (resultCode == Activity.RESULT_OK) {  
                Uri contactData = data.getData();  
                textView1.setText(contactData.getEncodedPath());  
            }  
            break;  
        }  
    }
```

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

Thank you 😊