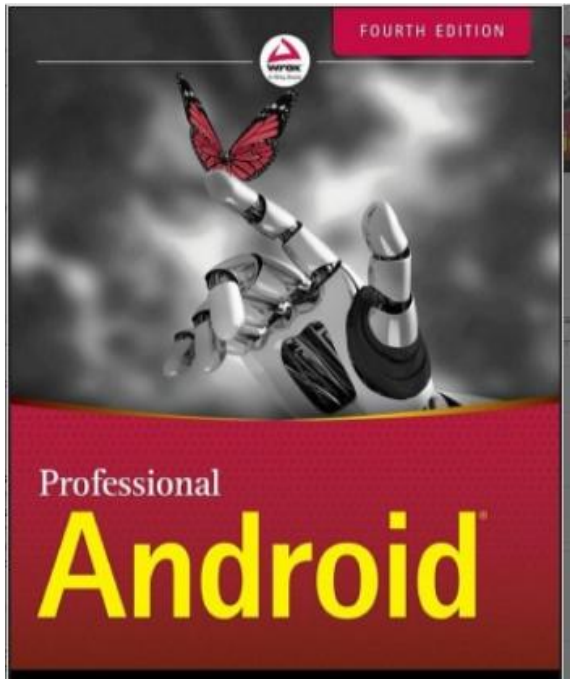
Mobile Phone Security

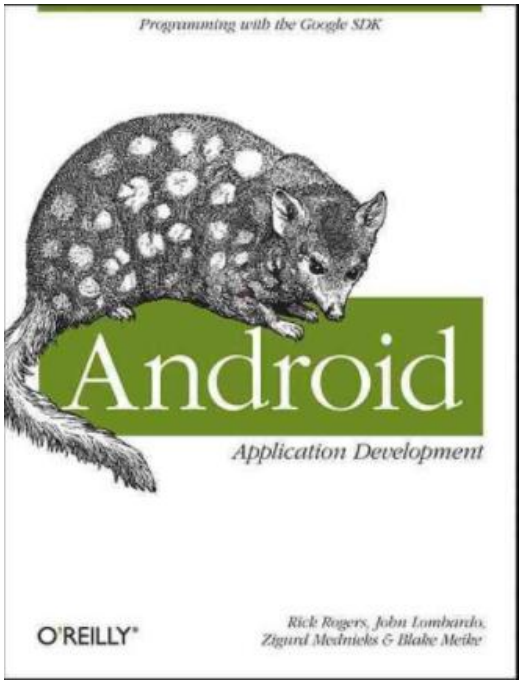
Dr. Digvijaysinh Rathod
Associate Professor
(Cyber Security and Digital Forensics)
Institute of Forensic Science
Gujarat Forensic Sciences University

digvijay.rathod@gfsu.edu.in

Intent

Reference



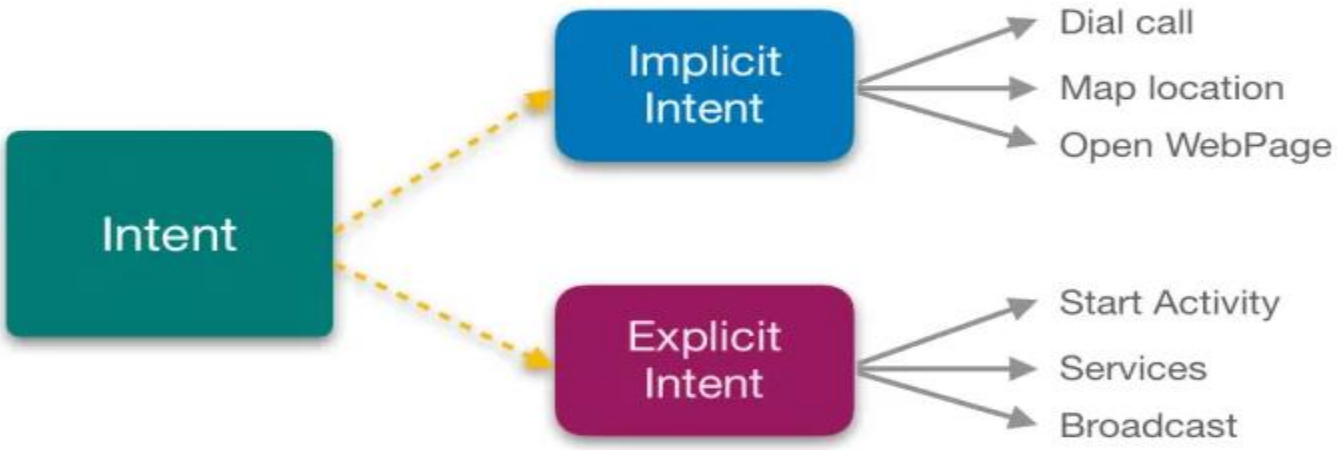


www.developer.google.com

https://data-flair.training/blogs/android-service-tutorial/

✓There are two types of intents:

1. **Explicit** This intent satisfies the request within the application component. It takes the fully qualified class name of activities or services that we want to start.
2. **Implicit Intent:** This intent does not specify the component name. It invokes the component of another app to handle it.



Intent

✓**Intent –** Communication object.

✓ Intent Filter tells Android that which activity handle which action.

✓Whenever Android is given an Intent, It has to figure out which activity or activities can handles it.

✓This process is known as Intent Resolution.

✓There are two types of intents:

1. **Explicit** This intent satisfies the request within the application component. It takes the fully qualified class name of activities or services that we want to start.

   Syntax

   Starting the Activity

```
Intent intent = new Intent(getApplicationContext(), ActivityTwo.class);
startActivity(intent);
```

✓There are two types of intents:

Syntax

Starting the Service

```
Intent intent = new Intent(this, HelloService.class);
startService(intent);
```

Syntax

Delivering Broadcast Receive

```
Intent intent = new Intent (“unique name”);
context.sendBroadcast(intent);
```

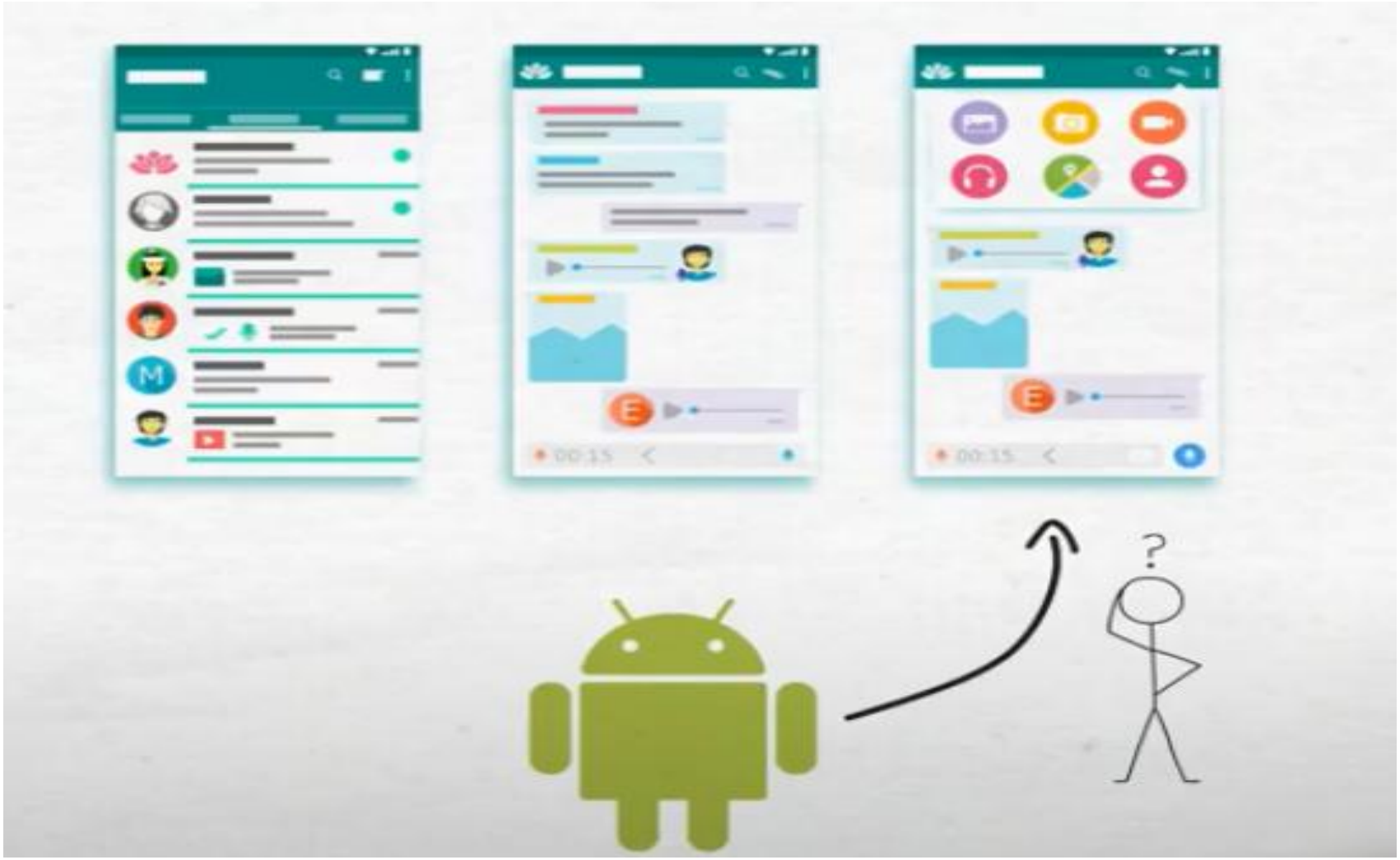
1. **Implicit Intent:** This intent does not specify the component name. It invokes the component of another app to handle it.

Syntax

Starting the Activity

```
Intent intent = new Intent();
intent.setAction=(Intent.ACTION_DIAL);
intent.setAction=(Intent.ACTION_VIEW);
intent.setAction=(Intent.ACTION_CALL);
```

The application framework : Intent



The application framework : Intent

- ✓ Demonstration of two project (Intro_demo_android_master)
  1. Explicit Intent
  2. Implicit Intent

Ref: https://github.com/codepath/intro_android_demo

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Intent Component

&

Intent Filter

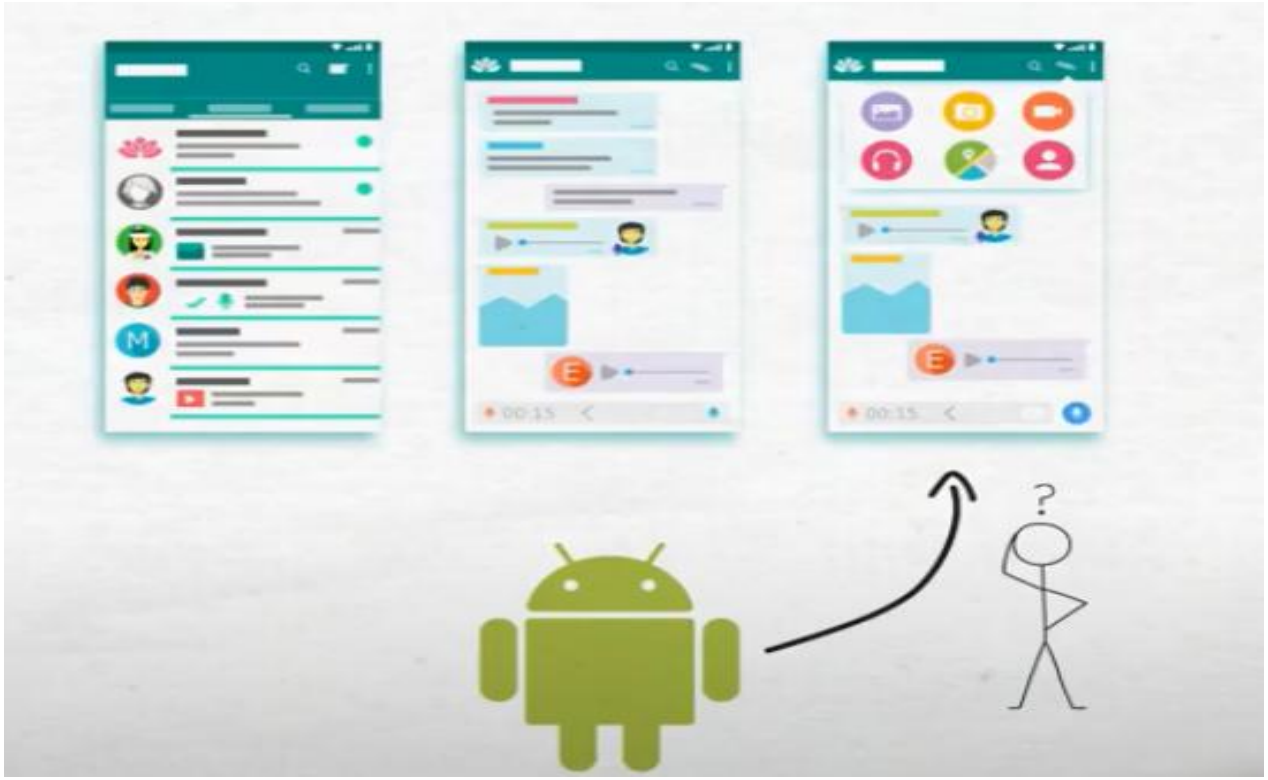
The application framework : Intent

```
Intent intent = new Intent();

intent.setAction=(Intent.ACTION_DIAL);

intent.setAction=(Intent.ACTION_VIEW);

intent.setAction=(Intent.ACTION_CALL);
```



The application framework : Intent

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

```
<activity android:name="com.gfsu.intentfilter_demo.CustomActivity_1">
    <intent-filter>
     <action android:name = "android.intent.action.VIEW" />
      <action android:name = "com.gfsu.intentfilter_demo.LAUNCH" />
        <category android:name = "android.intent.category.DEFAULT" />
         <category android:name = "android.intent.category.BROWSABLE" />
      <data android:scheme = "http" />
    </intent-filter>

  </activity>
</application>
```

```
Intent i = new Intent("com.gfsu.intentfilter_demo.LAUNCH",
Uri.parse("http://www.example.com"));
startActivity(i);
```

```
Intent i = new Intent("com.gfsu.intentfilter_demo.CustomActivity.LAUNCH",
Uri.parse("https://www.example.com"));
startActivity(i);
```

```
<activity android:name="com.gfsu.intentfilter_demo.CustomActivity_2">
    <intent-filter>
     <action android:name = "android.intent.action.VIEW" />
      <action android:name = "com.gfsu.intentfilter_demo.LAUNCH" />
        <category android:name = "android.intent.category.DEFAULT" />
         <category android:name = "android.intent.category.BROWSABLE" />
      <data android:scheme = "https" />
    </intent-filter>

  </activity>
</application>
```

✓ Intent Filters

- ✓ Basically, Intent Filters can define the **behavior of Intents** using three Elements, that are-
- ✓ <actions> – Action name defines the intent action that it'll accept.
- ✓ <data> – Data defines the data that is acceptable.
- ✓ <category> – Category defines the name of the Intent Category that is acceptable.

✓ Intent Filters

- ✓ You have seen how an Intent has been used to call an another activity.
- ✓ Android OS uses filters to pinpoint the set of Activities, Services, and Broadcast receivers that can handle the Intent with help of **specified set of action, categories, data scheme** associated with an Intent.
- ✓ You will use **<intent-filter>** element in the manifest file to list down actions, categories and data types associated with any activity, service, or broadcast receiver.

- ✓ **Intent Filters**
- ✓ Demo (IntentFilter_demo)

The application framework : Intent

- ✓ Any Intent object contains the following six things :

1. Component Name
2. Action
3. Data
4. Category
5. Extras
6. Flag

- ✓ Any Intent object contains the following six things :

1. **Component Name:**

   The intent object holds the name of the component of the Android application. Using component names, the system delivers an intent to a particular application component.

   - ✓ setComponent()
   - ✓ setClass()
   - ✓ setClassName()
   - ✓ Demo of the application (ImplicitIntentOne.apk)

Ref: https://www.codota.com/code/java/methods/android.content.Intent/setComponent

- ✓ Any Intent object contains the following six things :

2. Action

Action defines the general task that is to be performed on components. Now, these actions directly target Activities, Services or Broadcast Receivers. Let's see a few actions that an intent object stores:

- ✓ Any Intent object contains the following six things :

2. Action

- ✓ ACTION_VIEW content://contacts/people/1 -- Display information about the person whose identifier is "1".
- ✓ ACTION_DIAL content://contacts/people/1 -- Display the phone dialer with the person filled in.
- ✓ ACTION_DIAL tel:123 -- Display the phone dialer with the given number filled in.

Ref: https://developer.android.com/reference/android/content/Intent

- ✓ Any Intent object contains the following six things :

2. Action

- ✓ ACTION_VIEW tel:123 -- Display the phone dialer with the given number filled in. Note how the VIEW action does what is considered the most reasonable thing for a particular URI.
- ✓ ACTION_EDIT content://contacts/people/1 -- Edit information about the person whose identifier is "1".

- ✓ Any Intent object contains the following six things :

2. Action

- ✓ ACTION_VIEW content://contacts/people/ -- Display a list of people, which the user can browse through. This example is a typical top-level entry into the Contacts application, showing you the list of people.

- ✓ Any Intent object contains the following six things :

3. Category

- ✓ This contains some additional information about what kind of object should hold the intent. An intent object can contain any number of type of categories.
- ✓ This field is optional in an IntentObject.

- ✓ Any Intent object contains the following six things :

3. Category : Some of the categories included are as follows :

- ✓ BROWSABLE: The target components can be invoked in browsers to display data or message.
- ✓ ALTERNATIVE: This means the component should be added in the list of alternative actions that the user performs on some data.
- ✓ GADGET: This activity can be added inside some other components that host the gadgets.

- ✓ Any Intent object contains the following six things :

3. Category : Some of the categories included are as follows :

- ✓ HOME: This displays the home page of the user's device.
- ✓ LAUNCHER: The target can be an initial task and listed on the top of the application launcher.

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