

Intents and Filters

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Intent

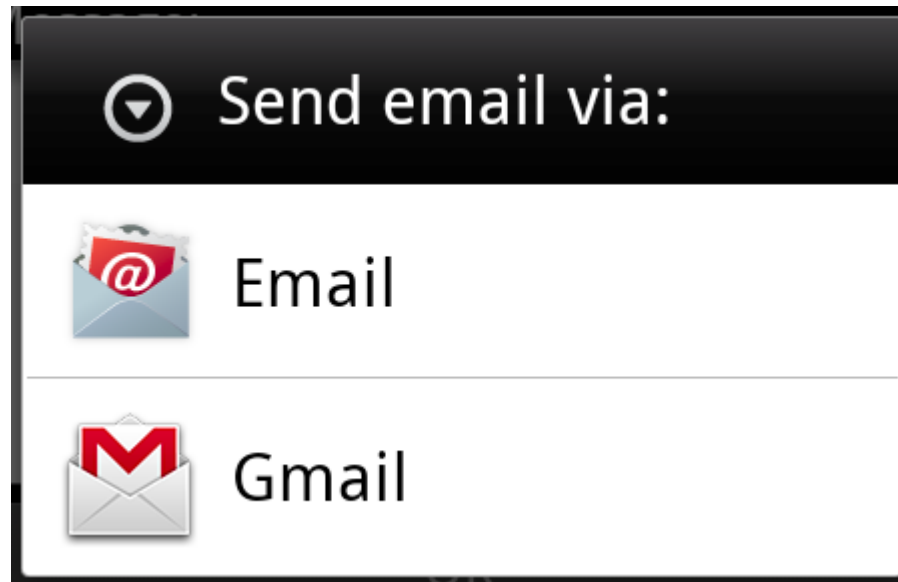
- An Android Intent is an abstract description of an operation to be performed.
- It can be used with `startActivity` to launch an Activity, `broadcastIntent` to send it to any interested BroadcastReceiver components, and `startService(Intent)` or `bindService(Intent, ServiceConnection, int)` to communicate with a background Service.
- The intent itself, an Intent object, is a passive data structure holding an abstract description of an operation to be performed.

Intent Example

- Let's assume that you have an Activity that needs to launch an email client and sends an email using your Android device. For this purpose, your Activity would send an ACTION_SEND along with appropriate chooser, to the Android Intent Resolver. The specified chooser gives the proper interface for the user to pick how to send your email data.

```
Intent email = new Intent(Intent.ACTION_SEND, Uri.parse("mailto:"));  
email.putExtra(Intent.EXTRA_EMAIL, recipients);  
email.putExtra(Intent.EXTRA_SUBJECT, subject.getText().toString());  
email.putExtra(Intent.EXTRA_TEXT, body.getText().toString());  
startActivity(Intent.createChooser(email, "Choose an email client  
from..."))
```

Output



Intent Example

- For example, assume that you have an Activity that needs to open URL in a web browser on your Android device. For this purpose, your Activity will send ACTION_WEB_SEARCH Intent to the Android Intent Resolver to open given URL in the web browser.
- The Intent Resolver parses through a list of Activities and chooses the one that would best match your Intent, in this case, the Web Browser Activity. The Intent Resolver then passes your web page to the web browser and starts the Web Browser Activity.

```
String q = "india";  
Intent intent = new Intent(Intent.ACTION_WEB_SEARCH );  
intent.putExtra(SearchManager.QUERY, q);  
startActivity(intent);
```

Intent Methods

- `Context.startActivity()`
 - The Intent object is passed to this method to launch a new activity or get an existing activity to do something new.
- `Context.startService()`
 - The Intent object is passed to this method to initiate a service or deliver new instructions to an ongoing service.
- `Context.sendBroadcast()`
 - The Intent object is passed to this method to deliver the message to all interested broadcast receivers.

Intent Objects

- An Intent object is a bundle of information which is used by the component that receives the intent as well as information used by the Android system.
- An Intent object can contain the following components based on what it is communicating or going to perform –
- Action
 - This is mandatory part of the Intent object and is a string naming the action to be performed — or, in the case of broadcast intents, the action that took place and is being reported. The action largely determines how the rest of the intent object is structured . The Intent class defines a number of action constants corresponding to different intents.
- Data
 - Adds a data specification to an intent filter. The specification can be just a data type (the mimeType attribute), just a URI, or both a data type and a URI. A URI is specified by separate attributes for each of its parts –

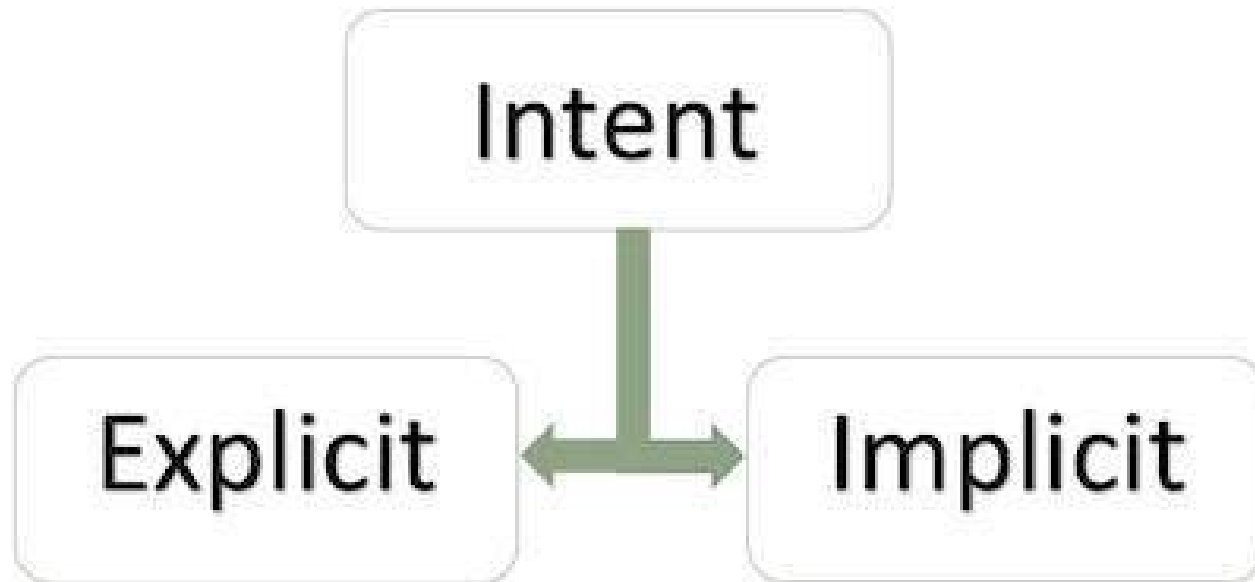
Action – Data Pairs

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

Action – Data Pairs

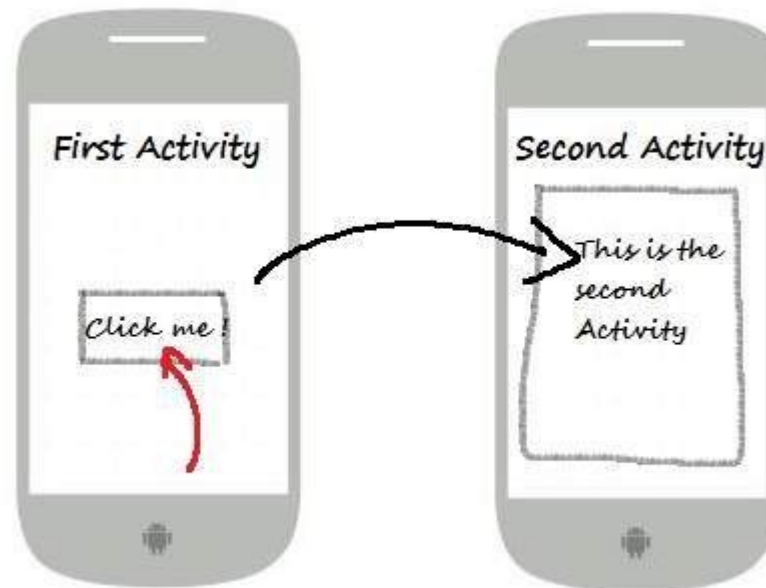
- ACTION_EDIT content://contacts/people/1
 - Edit information about the person whose identifier is "1".
- ACTION_VIEW content://contacts/people/
 - Display a list of people, which the user can browse through.
- ACTION_SET_WALLPAPER
 - Show settings for choosing wallpaper

Types of Intents



Explicit Intents

- Explicit intent going to be connected internal world of application, suppose if you wants to connect one activity to another activity, we can do this quote by explicit intent, below image is connecting first activity to second activity by clicking button.



Explicit Intents

- These intents designate the target component by its name and they are typically used for application-internal messages - such as an activity starting a subordinate service or launching a sister activity. For example –

```
// Explicit Intent by specifying its class name
Intent i = new Intent(FirstActivity.this, SecondActivity.class);

// Starts TargetActivity
startActivity(i);
```

Explicit Intents

- These intents do not name a target and the field for the component name is left blank. Implicit intents are often used to activate components in other applications. For example –

```
Intent read1=new Intent();  
read1.setAction(android.content.Intent.ACTION_VIEW);  
read1.setData(ContactsContract.Contacts.CONTENT_URI);  
startActivity(read1);
```

Example: Intents

- 0

Intent Filters

- 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 – Example

- Following is an example of a part of AndroidManifest.xml file to specify an activity com.example.My Application.CustomActivity which can be invoked by either of the two mentioned actions, one category, and one data.

```
<activity android:name=".CustomActivity"
    android:label="@string/app_name">
    <intent-filter>
        <action android:name="android.intent.action.VIEW" />
        <action android:name="com.example.My Application.LAUNCH" />
        <category android:name="android.intent.category.DEFAULT" />
        <data android:scheme="http" />
    </intent-filter>
</activity>
```


Intent Filters – Example

- Once this activity is defined along with above mentioned filters, other activities will be able to invoke this activity using either the `android.intent.action.VIEW`, or using the `com.example.My Application.LAUNCH` action provided their category is `android.intent.category.DEFAULT`.
- The `<data>` element specifies the data type expected by the activity to be called and for above example our custom activity expects the data to start with the `"http://"`
- There may be a situation that an intent can pass through the filters of more than one activity or service, the user may be asked which component to activate. An exception is raised if no target can be found.

Intent Filters – Example

- IntentFilter

Thank you

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Web Resources

<http://mitu.co.in>
<http://tusharkute.com>

Blogs

<http://digitallocha.blogspot.in>
<http://kyamputar.blogspot.in>

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