



ANDROID DEVELOPMENT #3

@brmlab

RESPONSIVITY

• ANR - Application Not Responding

• Trigger


• Any lengthy operation on UI thread

• Network on UI thread

• No response for 5 seconds

• BroadcastReceiver no result in 10 seconds

Hello, Android

 Sorry!

Activity Hello, Android (in application Hello, Android) is not responding.

Force close

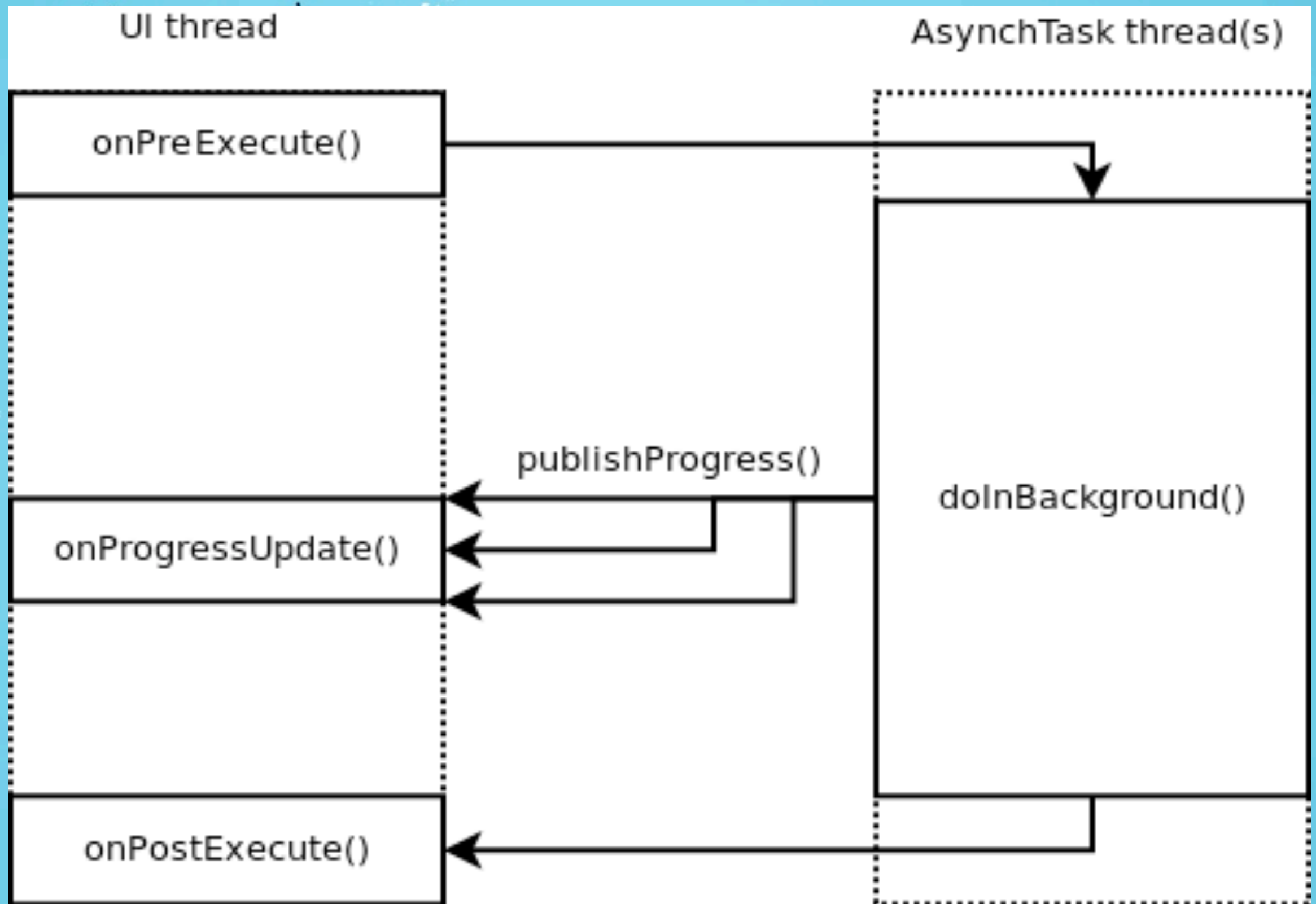
Wait

MULTIPLE THREADS (J2SE)

- Interface: Runnable
- Class: Thread
- Keywords
- Thread Pool, Thread Executor
- wait, join, notify, notifyAll
- interrupt threads

MULTIPLE THREADS (DALVIK)

- Standard code runs on UI Thread
- **AsyncTask**
- Parametrized class
- `AsyncTask<Params, Progress, Result>`
- eg. `AsyncTask<String, Integer, Boolean>`
- Inner or Outer class
- Context related



ASYNC TASK

- `AsyncTask<Params, Progress, Result>`

- Methods

- [UI] `void onPreExecute()`

- [UI] `void onProgressUpdate(Progress... progress)`

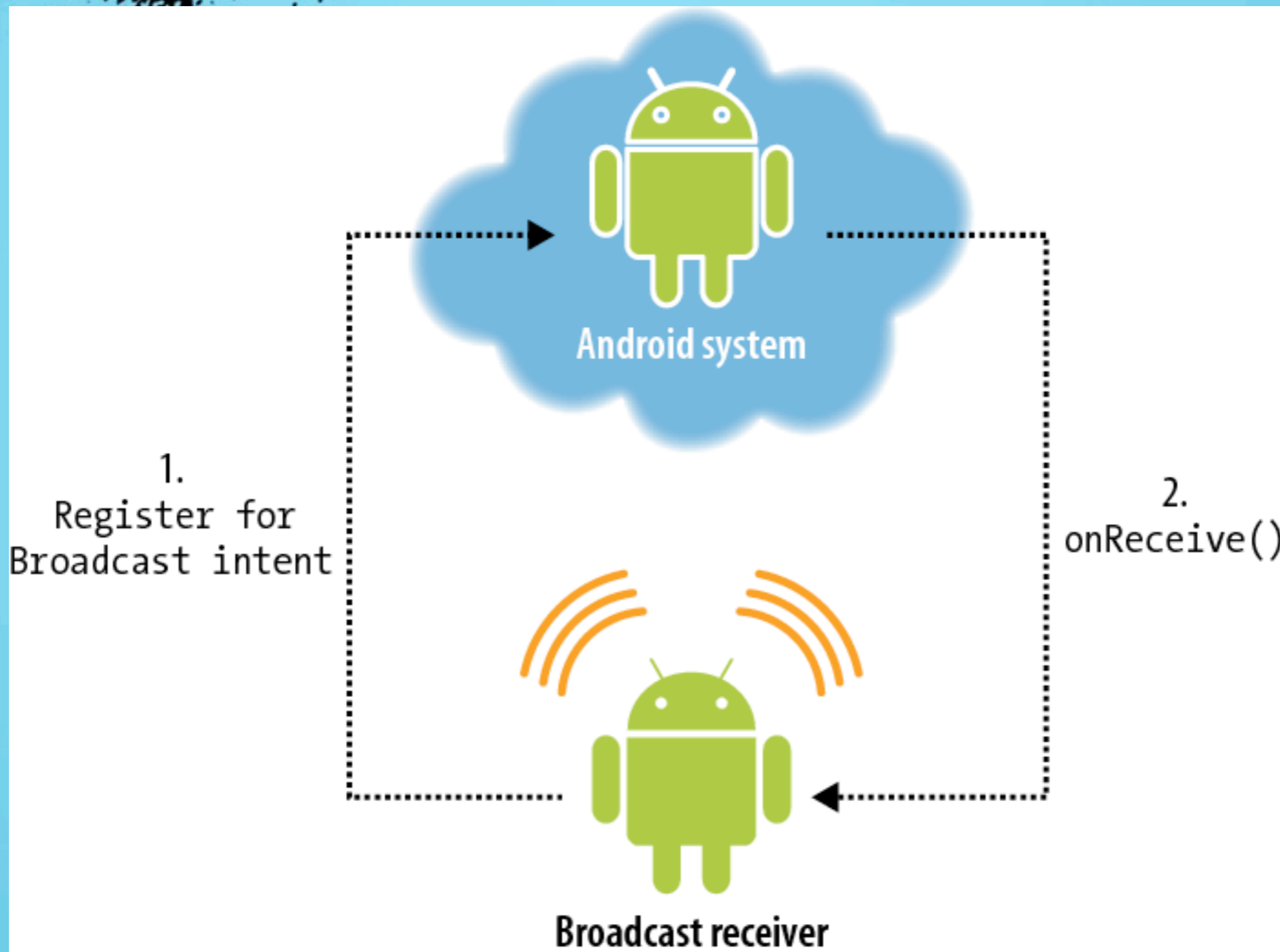
- [BG] `Result doInBackground(Params... params)`

- [UI] `void onPostExecute(Result result)`

- explicit usage of UI thread

- `runOnUiThread(Runnable)`

BROADCAST



INTENT

- Data object
- Mostly used for Activity transition
- Has Bundle of extras
- System intents
- Predefined Intent actions

Message Launcher

Send picture using:



Facebook



Gmail



Goggles



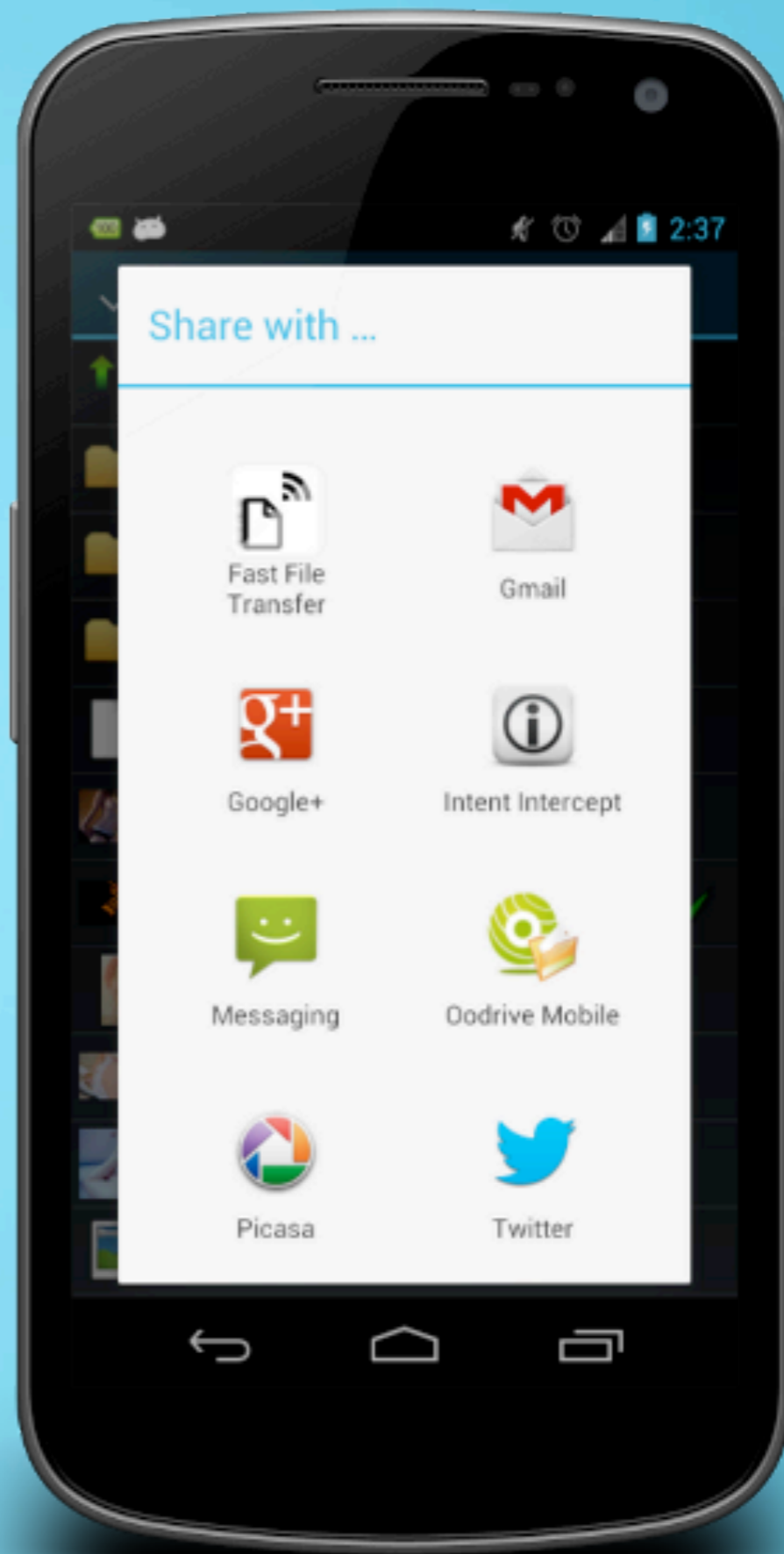
Google Buzz

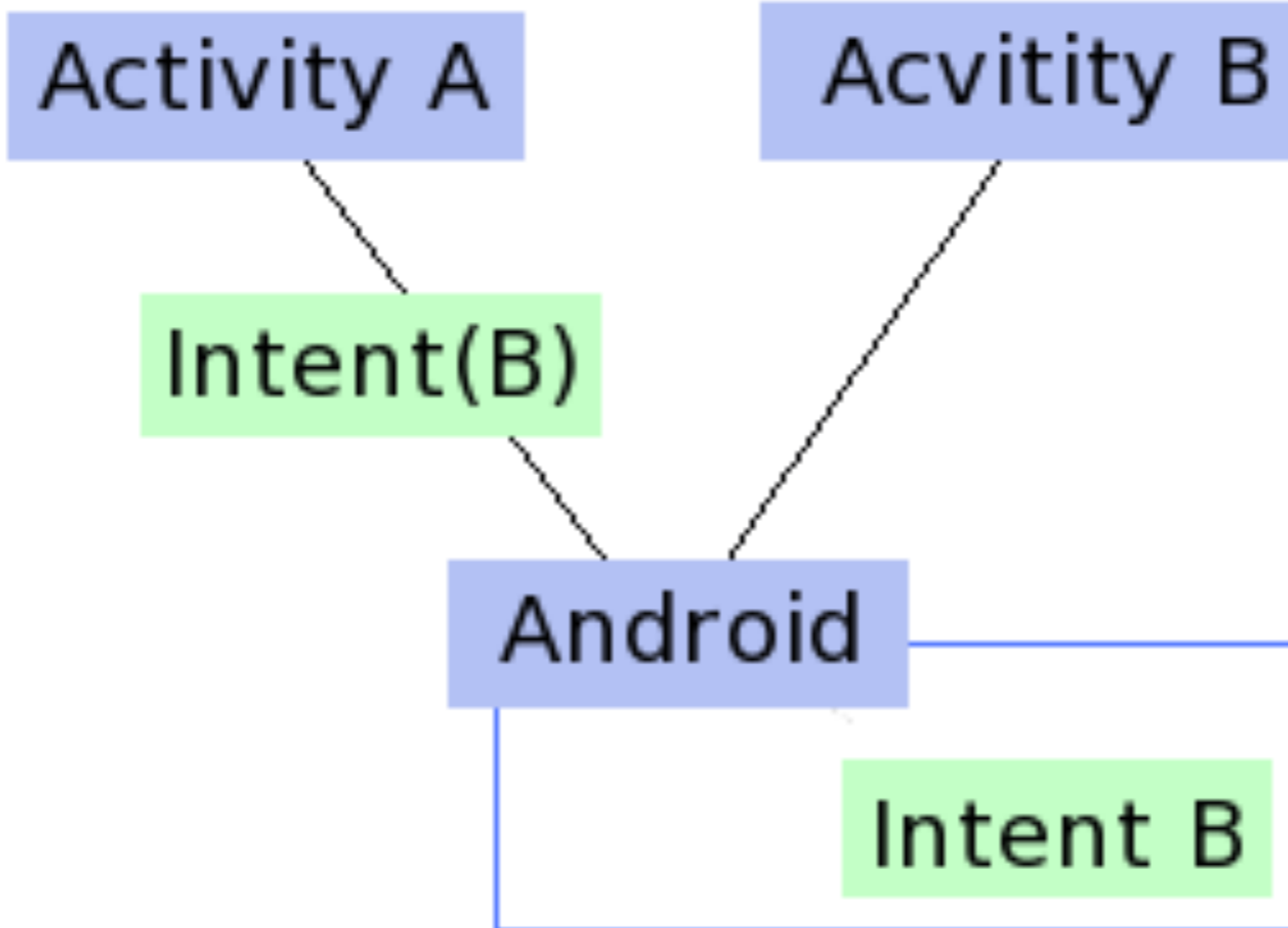


Messaging



Picasa





BROADCAST

- BroadcastReceiver

- Internal Application Signals

- External System Signaling

- Services, Fragments, ContentProvider

- Broadcasting Intent

- **Asynchronous processing of Intents**

APACHE HTTP CLIENT

- Android bundled version is
 - not-standard (implementation differs)
 - outdated (current stable 4.2.3)
- HttpClient, HttpCore, HttpAsyncClient
- HttpComponents <http://hc.apache.org/>
- Library must use another package names

HTTP CLIENT LIBRARIES

Asynchronous Http Client

<http://loopj.com/android-async-http/>

HttpClientAndroidLib

<https://code.google.com/p/httpclientandroidlib/>

Google Http Java Client

<https://code.google.com/p/google-http-java-client/>

ANDROID PERMISSIONS

Manifest must contain permission

```
<uses-permission
```

```
  android:name="android.permission.INTERNET"
```

```
 />
```

If not in place, SecurityException is raised

SecurityException: Permission denied

(missing INTERNET permission?)