Android App Development

Broadcast Receivers

Building Blocks of Android: **Four Components**

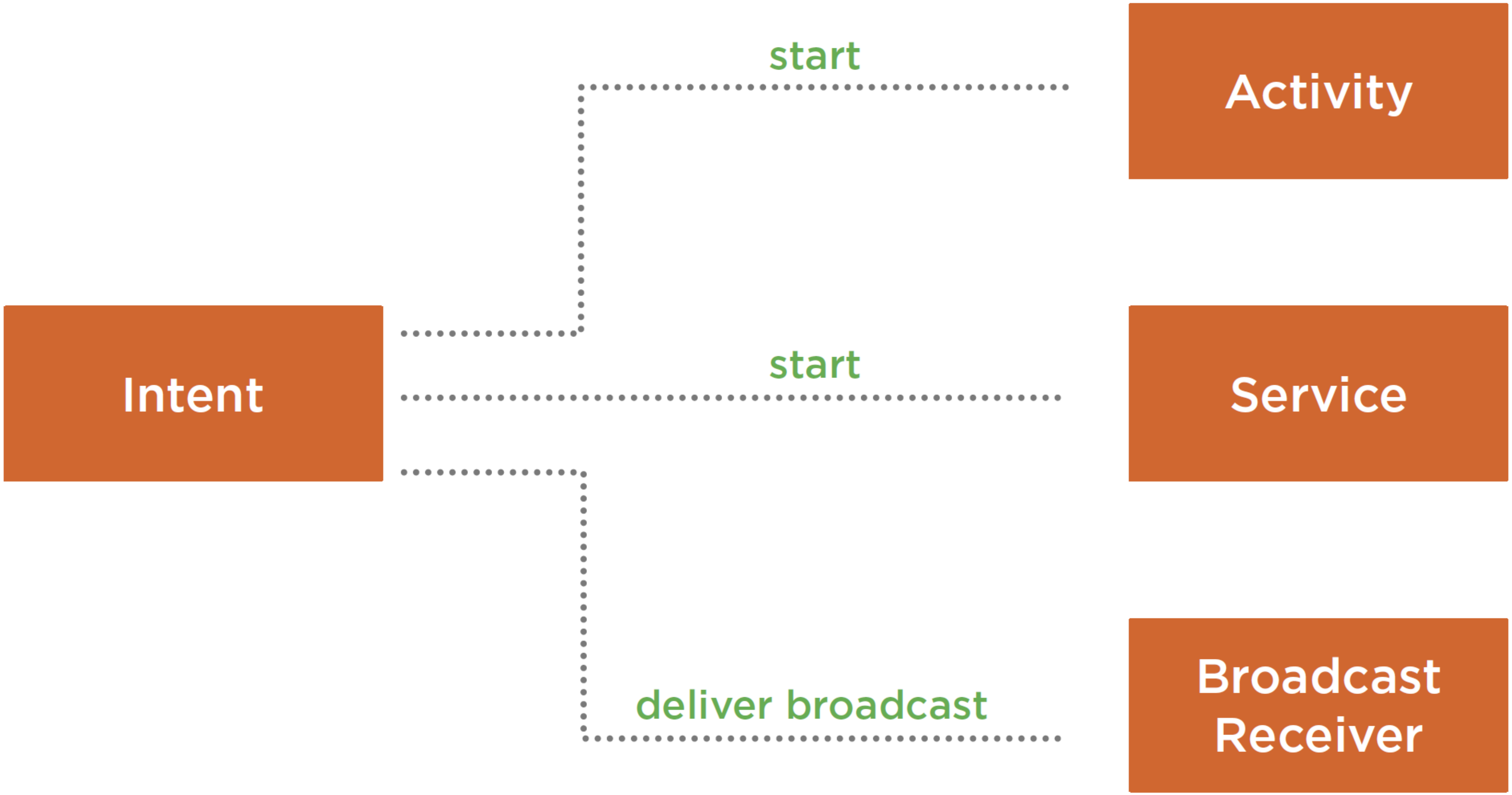
Activity

Service

BroadcastReceiver

ContentProvider

Intent


start
Activity
Intent
start
Service
deliver broadcast
Broadcast Receiver

BroadcastReceiver

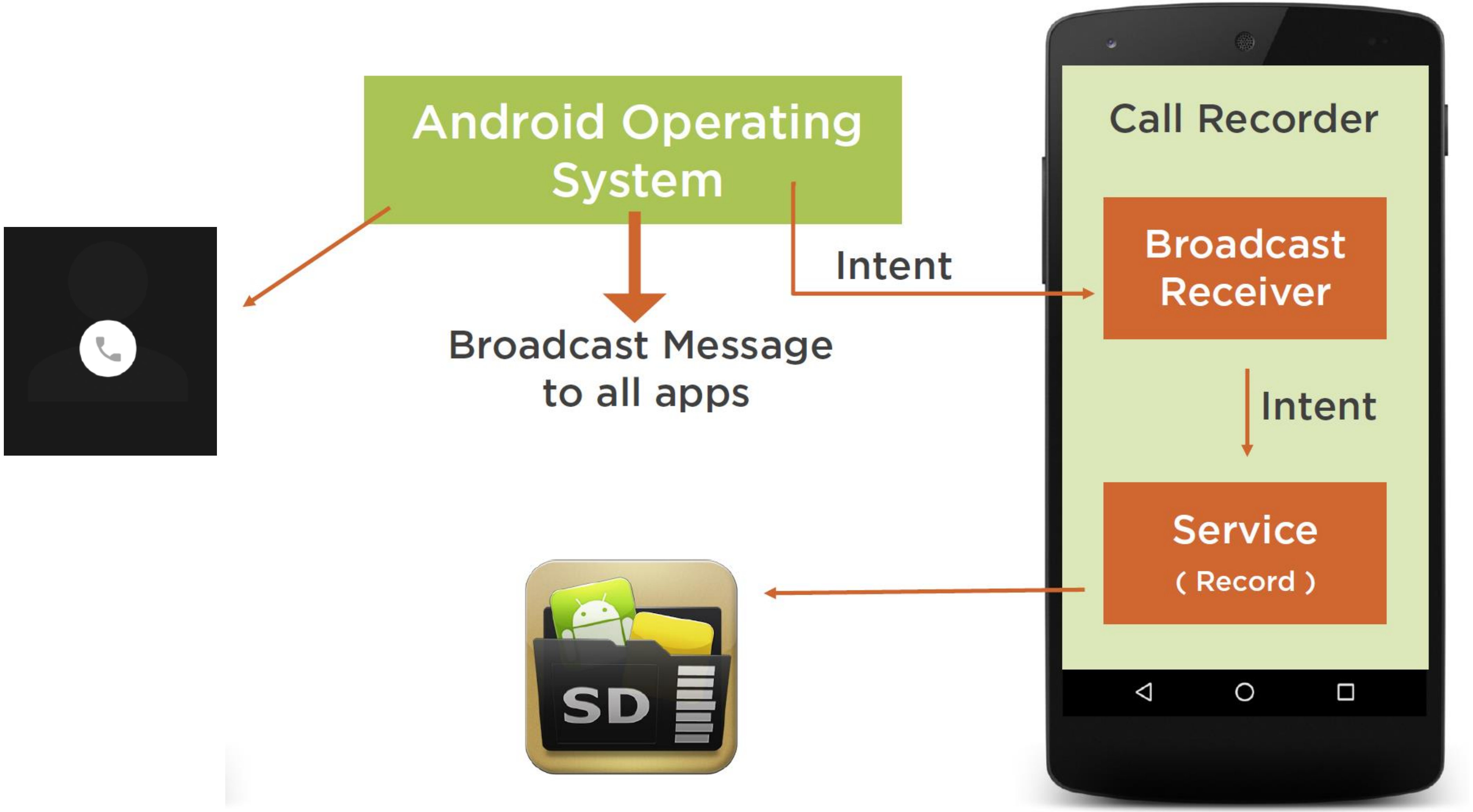
Android Operating System

Broadcast Message to all apps

Few Examples : -

- Incoming Call
- Flight Mode on/off
- Wi-fi on/off

BroadcastReceiver



Android Operating System

Broadcast Message to all apps

Intent

Call Recorder

Broadcast Receiver

Intent

Service
(Record)

Types of Broadcasts

Normal Broadcasts

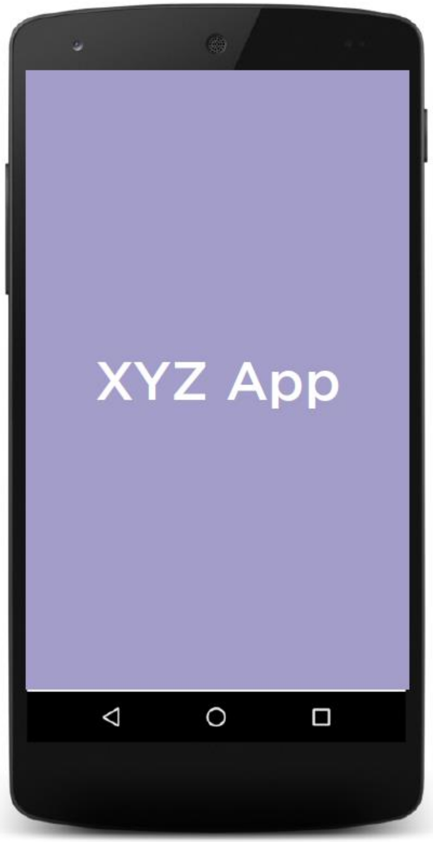
Ordered Broadcasts

Sticky Broadcasts

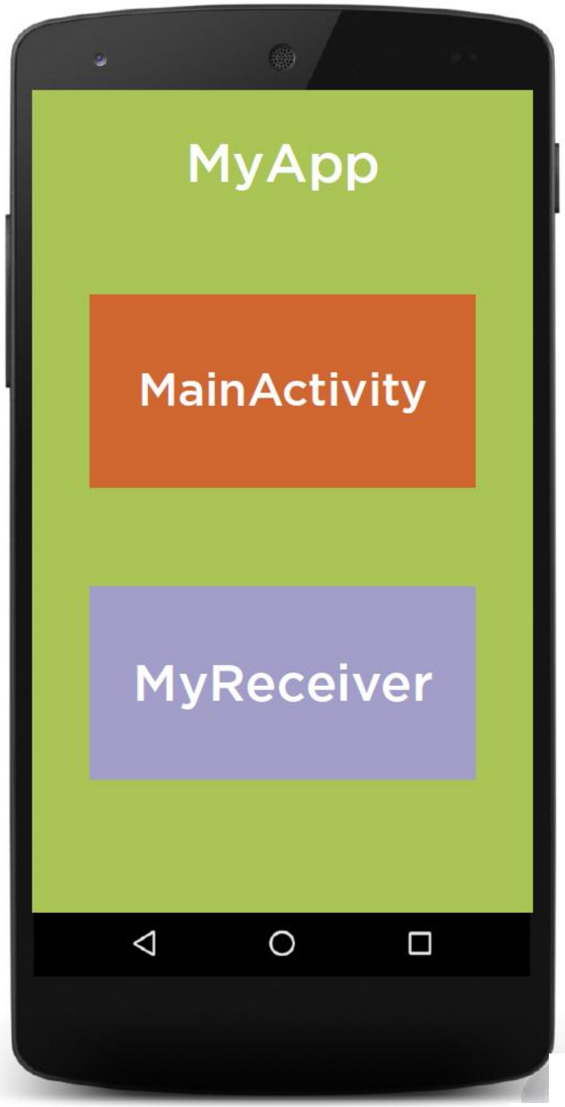
Local Broadcasts

Flow of Broadcast [Intent]

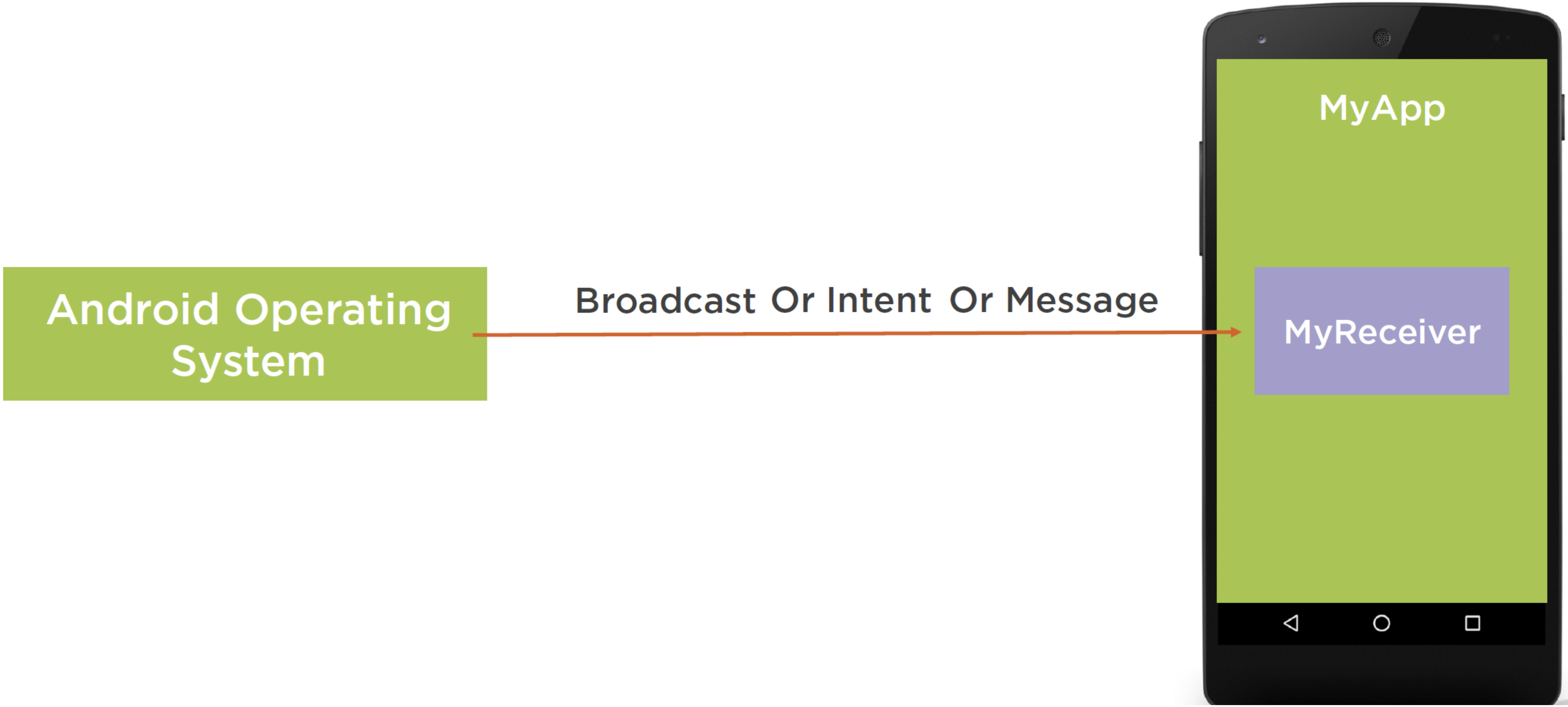
Android Operating System



1. Between OS and MyApp
   - Operating System → MyReceiver
2. Between Two Apps
   - XYZ App → MyReceiver
3. Within the app
   - MainActivity → MyReceiver



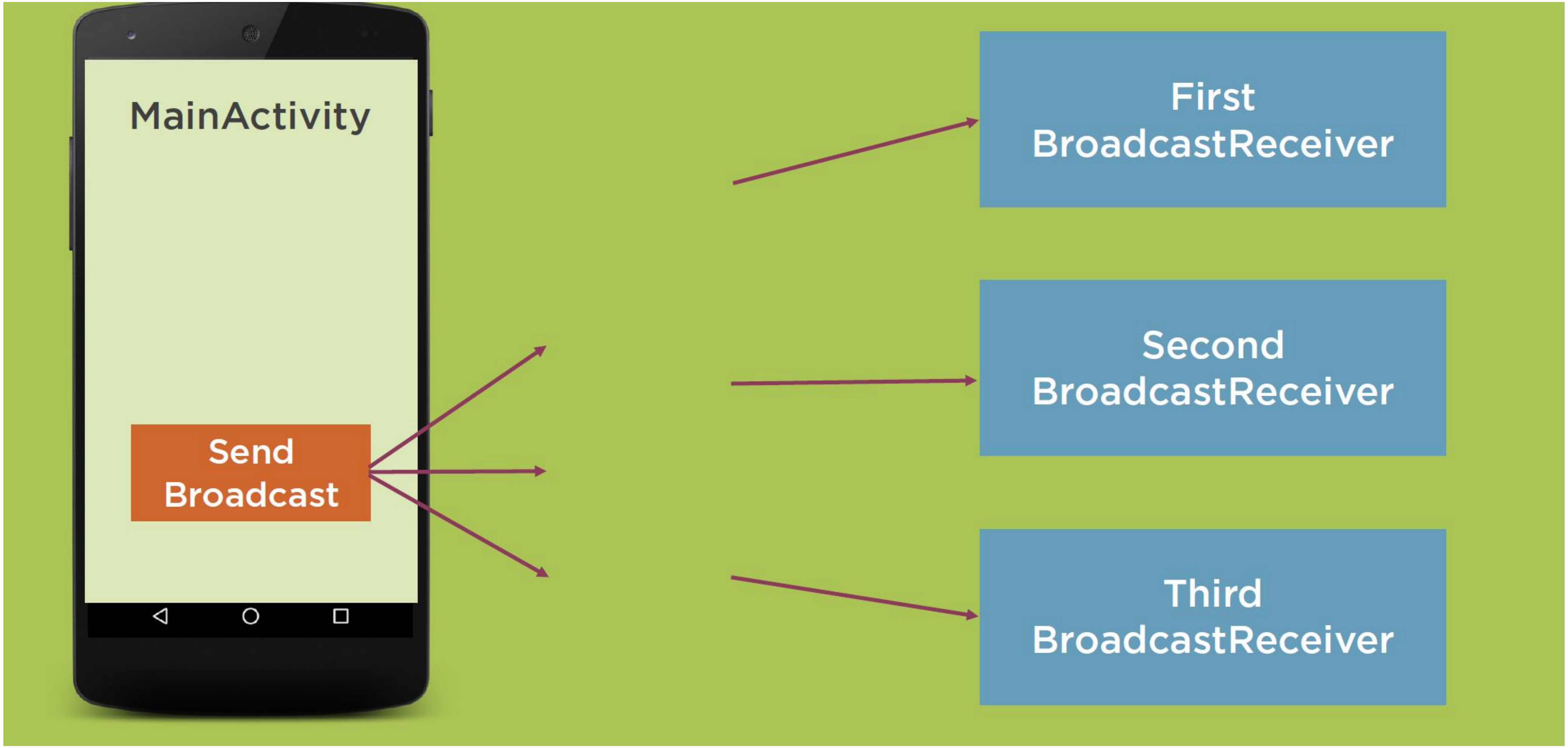
BroadcastReceiver or Receiver



Registering a BroadcastReceiver [Receiver]

- Statically
- Dynamically

- Normal Broadcast
- Register Statically in Manifest


MainActivity
Send Broadcast
First BroadcastReceiver
Second BroadcastReceiver
Third BroadcastReceiver

Create an Activity with a Button

- sendBroadcastMessage method

Create a subclass of BroadcastReceiver

- MyFirstReceiver extends BroadcastReceiver
- Override the onReceive method

Declare the Receiver in Manifest File

Write code to send a Broadcast

- sendBroadcastMessage method

BroadcastReceiver as an Inner Class

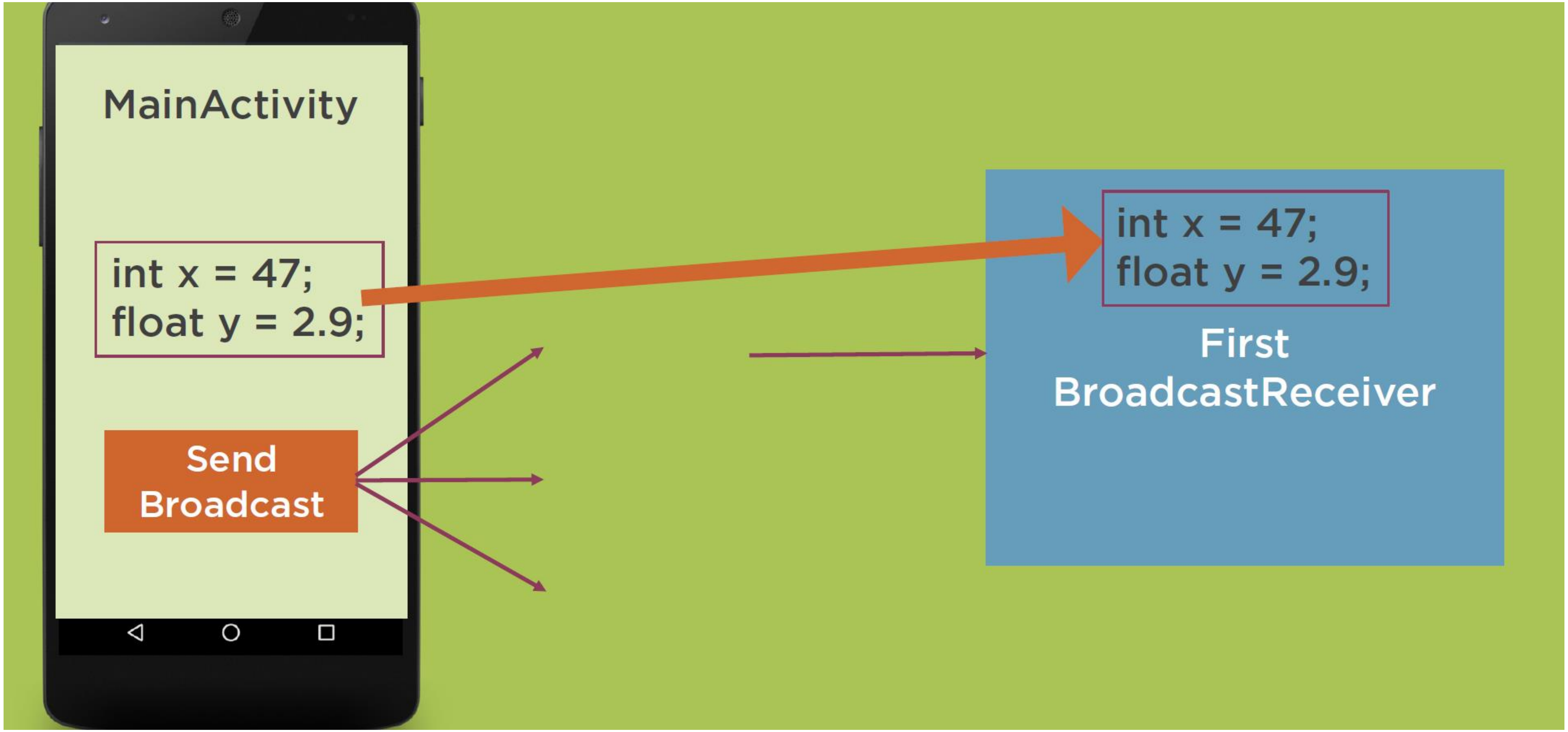
Using Intent Filter with Custom Action

Multiple Receivers with Same Action Name

Broadcasts are sent Asynchronously

BroadcastReceiver works in main thread

- We cannot block the main thread for longer duration of time
- Android System will generate ANR and the app will crash
- Solution → Use Services for longer duration tasks



MainActivity

```
int x = 47;
float y = 2.9;
```

Send Broadcast

```
int x = 47;
float y = 2.9;
```

First BroadcastReceiver

Override the onReceive() in sub class of Receiver

Receivers can be declared as Inner class

Never perform long running tasks inside the onReceive method

- Receiver works in the main thread
- It will block the main thread
- System will generate ANR
- Solution → Use Service for long tasks