Android

Services, Content Providers, Notifications and Fragments

Today's agenda

Services

Notifications

Fragments

Content Providers

Services

For long running background operations.

Keeps the application process alive.

Runs even when user is not interacting with the app.

Runs even when there is no activity in foreground.

Can be started anytime in background with user interaction.

Services - Examples

Music player.

Downloading large files.

Processing Images in background.

Call service.

Vibration service.

Geolocation service.

Service - Two forms

Started - When another component starts it.

<p style="color:magenta">onStartCommand()</p>

Bound - When another components binds to it continuously.
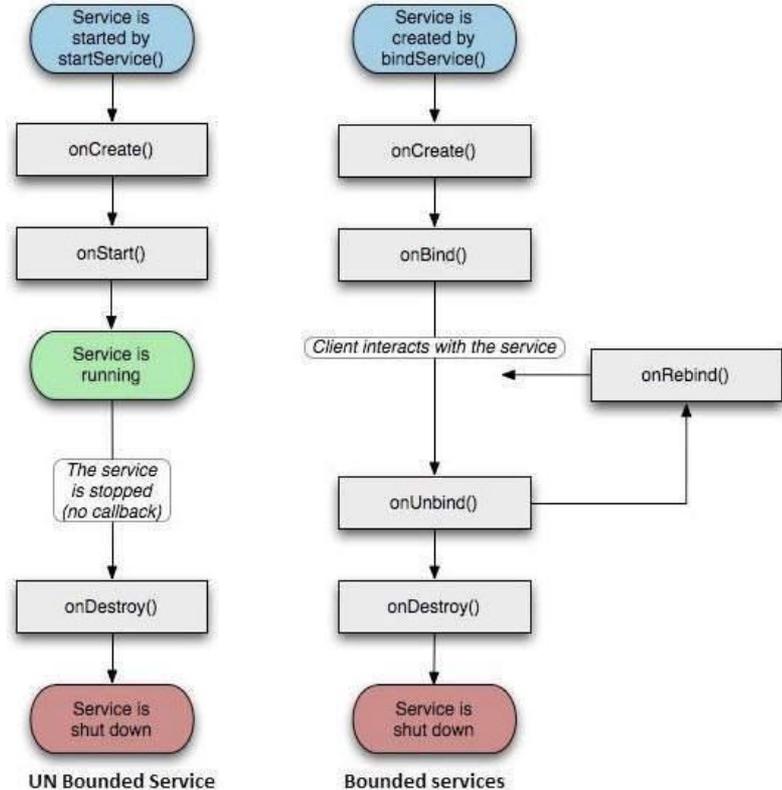
<p style="color:magenta">onBind()</p>

Service - Lifecycle

onCreate()

onStart()

onDestroy()

IntentService

Service + AsyncTask = IntentService

Spans its own thread to handle a single background thread.
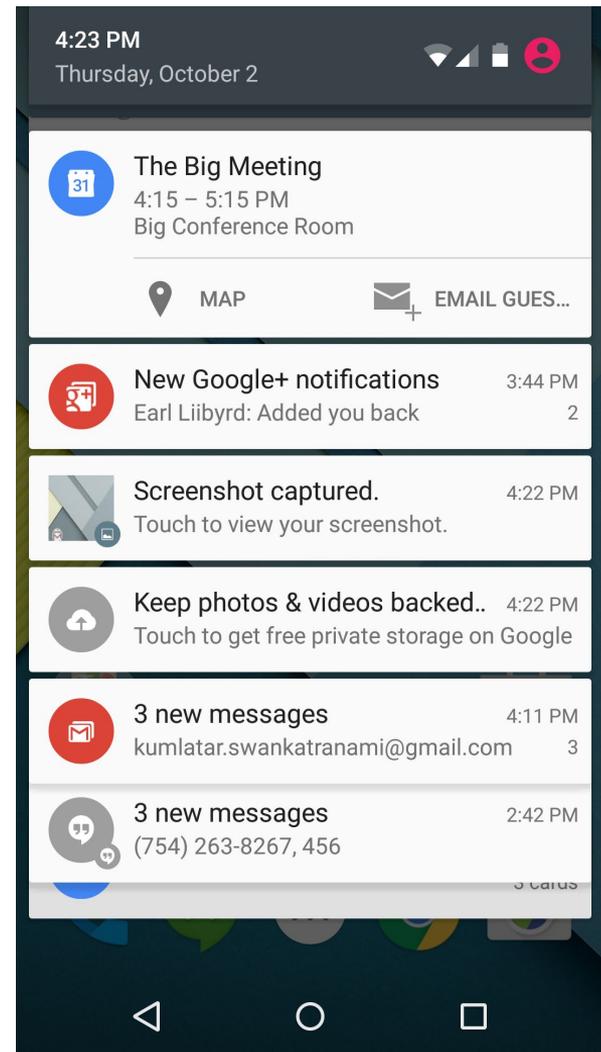
Stops itself when the task is finished.

IntentService

```java
public class MyIntentService extends IntentService {

  public MyIntentService() {

      super("MyIntentService");

  }

  @Override

  protected void onHandleIntent(Intent intent) {

      // Do long running operation

  }

}
```

Services - Demo

Notifications

Creating Notifications

Build using **NotificationCompat.Builder.**

Set a small icon using **setSmallIcon().**

Set a title using **setContentTitle().**

Set detail text using **setContentText().**

```
Builder.setSmallIcon(R.drawable.icon).setContentTitle("Title").
setContentText("Text");
```

More about Notifications
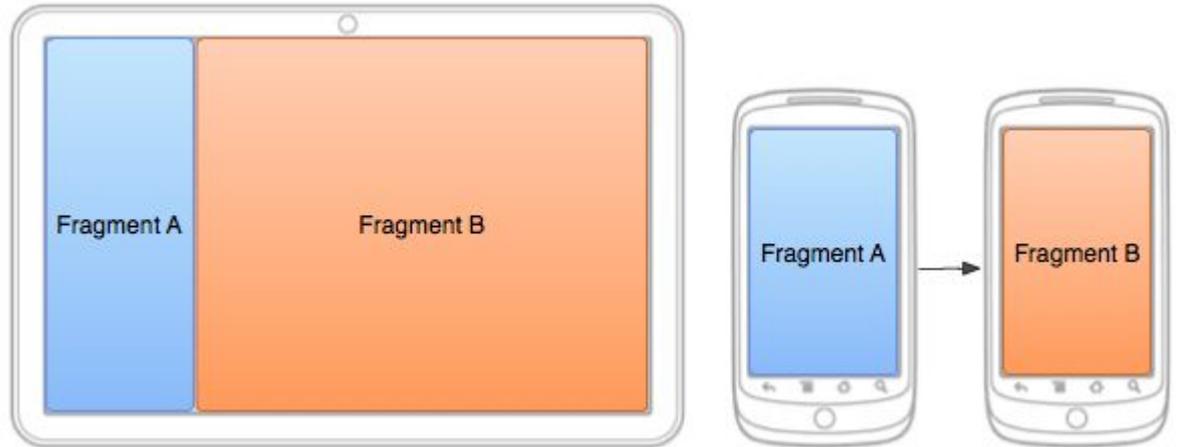
Notification Priority

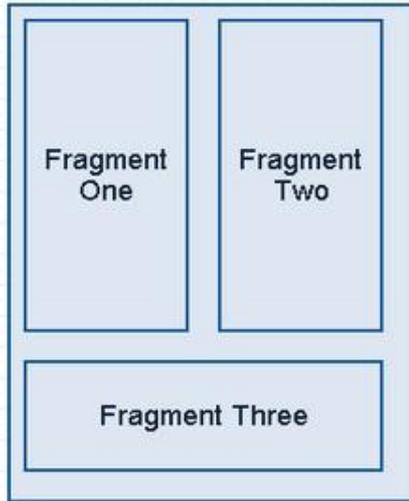Expanded Notification

Set button/Action

Set Sound

Notifications Demo

Fragments

Fragments - Part of Activity UI

Fragment One | Fragment Two

Fragment Three

Android Activity Layout ONE - Three Fragment in single screen

Fragment One | **Fragment Two** | **Fragment Three**

Android Activity Layout Two - Single Fragment per screen

Fragment One

Fragment Two

Android Activity Layout Three - Two Fragment per screen

Fragments

Fragments were introduced in Android 3.0

A Fragment is a part of Activity UI.

A Fragment must be embedded into Activity. It can not perform independently.

A Fragment defines its own Layout.

A Fragment has its own lifecycle which is affected by lifecycle of its parent Activity.
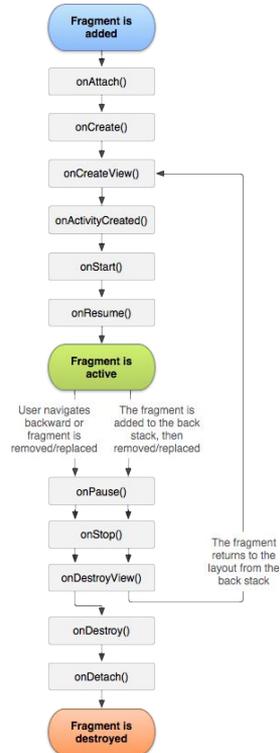
Fragments - Reusable Components

Fragment Usage

Code modularization.

Multiple screen support.

Reusable UI component.

Fragment Lifecycle
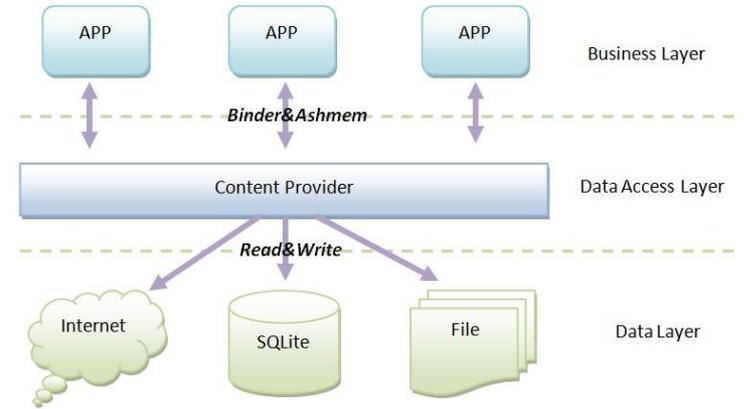
How To Use Fragment

Adding Fragments statically.

Adding Fragments Dynaically.

Fragments - Demo

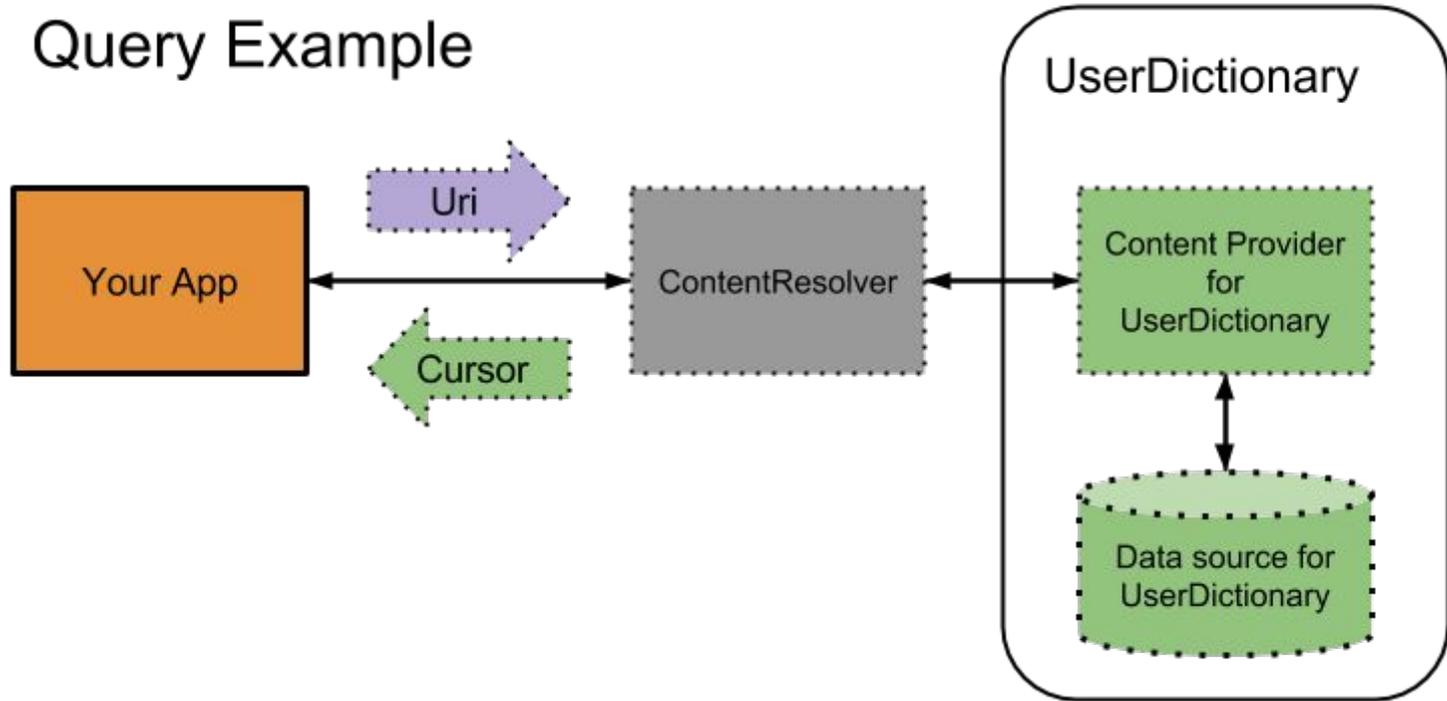# Content Providers

Content Providers

Content Providers manage access to structured data.

Hide how data is stored and provide security and standard interface for other applications to read, modify and add data.

Content providers enable sharing of data with other applications s.

Content Provider

Using Content Providers

Declare permission for accessing content provider.
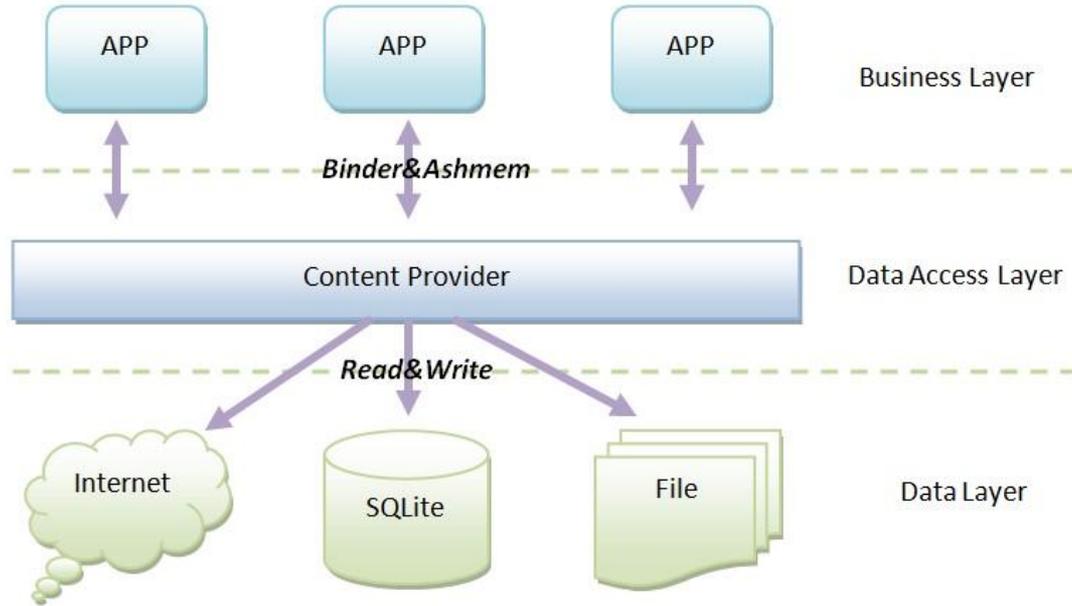
Use Content provider URI . The format of the URI is:
content://authority/<path>/<id>

To retrieve data, app calls ContentResolver.query() method.

The query() method returns Cursor object.

Cursor object can then be used to get data.

Content Providers

Content Provider