

# Android Components 2

## Android Smartphone Programming

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## 1 Content Providers

## 2 Calendar





- Mostly used to share data between applications<sup>[2]</sup>.
- Many predefined Content Providers available, for example to access phone contacts.
- Provide mechanisms to define data security.
- Access of data through content URI.
  - Example: *people.CONTENT\_URI* to access the phone contacts.



# Content Providers

## Example: Usage of a Content Provider

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```
1 String[] proj = new String[] {People._ID,  
    People.NAME, People.NUMBER};  
2 try {  
3     Cursor c = managedQuery(People.CONTENT_URI,  
        proj, null, null, null);  
4     if (c == null) return;  
5     int name = c.getColumnIndexOrThrow(People.  
        NAME);  
6     if (!c.moveToFirst()) return;  
7     String nameString = c.getString(name);  
8     ...  
9 }
```



- To access the built-in calendar the Android manifest has to be extended<sup>[?]</sup>:

```
1 <uses-permission android:name="android.  
  permission.READ_CALENDAR">  
2 </uses-permission>
```

- Data can be accessed through a Content Provider and a Cursor.
- The Content Provider for the calendar has the following URI:

```
1 content://calendar/calendars
```



- *CalendarContract.Calendars*:  
Calendar specific informations.
- *CalendarContract.Events*:  
Event specific informations. Connected by CALENDER\_ID.
- *CalendarContract.Instances*:  
Start and end time for each occurrence. Connected by EVENT\_ID.
- *CalendarContract.Attendees*:  
Event attendee information. Connected by EVENT\_ID.
- *CalendarContract.Reminders*:  
Notification data. Connected by EVENT\_ID.





ANDROID DEVELOPERS.

App Widgets.

<http://developer.android.com/guide/topics/appwidgets/index.html>.



ANDROID DEVELOPERS.

Content Providers.

<http://developer.android.com/guide/topics/providers/content-providers.html>.



ANDROID DEVELOPERS.

Data Storage using Databases.

<http://developer.android.com/guide/topics/data/data-storage.html#db>.



ANDROID DEVELOPERS.

Notifications: Dialog.

<http://developer.android.com/guide/topics/ui/notifiers/index.html#Dialog>.



ANDROID DEVELOPERS.

Notifications: Status Bar.

<http://developer.android.com/guide/topics/ui/notifiers/index.html#StatusBar>.



ANDROID DEVELOPERS.

Notifications: Toast.

<http://developer.android.com/guide/topics/ui/notifiers/index.html#Toast>.



ANDROID DEVELOPERS.

Services.

<http://developer.android.com/guide/topics/fundamentals/services.html>.

