Recording in Progress

This class is being recorded

Please turn off your video and/or video if you do not wish to be recorded
The ContentProvider Class
Today’s Topics

ContentProvider
ContentResolver
CursorLoader
Implementing ContentProviders
ContentProvider

Represents a repository of structured data
Encapsulates data sets
Enforces data access permissions
ContentProvider

Intended for inter-application data sharing
Clients access ContentProviders through a ContentResolver
ContentResolver

Presents a database-style interface for reading & writing data
  query, insert, update, delete, etc.
Provides additional services such as change notification
ContentResolver

Get reference to ContentResolver by calling Context.getContentResolver()
ContentProvider & ContentResolver

Together these classes let code running in one process access data managed by another process.
Android ContentProviders

Browser – bookmarks, history
Call log – telephone usage
Contacts – contact data
Media – media database
UserDictionary – database for predictive spelling
Many more
ContentProvider Data Model

Data logically represented as database tables

<table>
<thead>
<tr>
<th>_ID</th>
<th>artist</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Lady Gaga</td>
</tr>
<tr>
<td>44</td>
<td>Frank Sinatra</td>
</tr>
<tr>
<td>45</td>
<td>Elvis Presley</td>
</tr>
<tr>
<td>53</td>
<td>Barbara Streisand</td>
</tr>
</tbody>
</table>
URI

ContentProviders referenced by URIs
The format of the URI identifies specific data sets managed by specific ContentProviders
Format

content://authority/path/id

content – scheme indicating data that is managed by a content provider

authority – id for the content provider

path – 0 or more segments indicating the type of data to be accessed

id – a specific record being requested
Example: Contacts URI

ContentResolver.query()

Returns a Cursor for iterating over a results set

Cursor query (    
    String[] projection  // Columns to retrieve    
    String selection    // SQL selection pattern    
    String[] selectionArgs  // SQL pattern args    
    String sortOrder    // Sort order    
)
ContentProviderExample

Extracts Contact information from the Android Contacts ContentProvider

    Displays each contact’s name
ContentProvider Example
ContentProviderWithResourceCursorAdapter

Extracts specific contact information from the Android Contacts ContentProvider

Displays each contact’s name and photo, if available
ContentProvider
WithResourceCursorAdapter
More ContentResolver Operations

Delete
Insert
Update
ContentResolver.delete()

Returns the number of rows deleted

    int delete (    
        Uri url,        // content Uri
        String where,   // SQL sel. pattern
        String[] selectArgs  // SQL pattern args
    )
ContentResolver.insert()

Returns the Uri of the inserted row

Uri insert ( Uri url, // content Uri ContentValues values // values )
ContentResolver.update()

Returns the number of rows updated

int update(
    Uri url,          // content Uri
    ContentValues values  // new field values
    String where,    // SQL sel. pattern
    String[] selectionArgs   // SQL pattern args
)
ContentProviderInsertContacts

Application reads contact information from the Android Contacts ContentProvider

Inserts several new contacts into Contacts ContentProvider

Displays old and new contacts
ContentProvider
InsertContacts
Recipe for Creating a ContentProvider

Define a Contract Class to support users of your ContentProvider

Implement a storage system for the data

Implement a ContentProvider subclass

Declare and configure ContentProvider in AndroidManifest.xml
ContentProviderCustomProvider

Application defines a ContentProvider for ID/string pairs
ContentProviderCustomConsumer

Reads ID/String pairs from the ContentProvider
Inserts and deletes ID/String pairs
ContentProvider
CustomProvider
Example Applications

ContentProviderExample
ContentProviderWithResourceCursorAdapter
ContentProviderInsertContacts
ContentProviderCustomProvider
ContentProviderCustomConsumer