Using a Content Provider

- Use `CursorLoader` to load data to your application from a content provider

  - Takes care of retaining data in case `Activity` is re-created (device orientation changes), closing cursor when needed, monitoring changes in data set and performing data access in a separate worker thread

- Initialize `CursorLoader` with `getLoaderManager.initLoader()`. Loader manager supports multiple concurrent loads. Notice return value from this method is not needed since `CursorLoader` will do callbacks for each loader (where you do the set up):

  - `onCreateLoader()` - most of the work is done here, you construct and return a `CursorLoader` object

  - `onLoadFinished()` - new data set (represented as a `Cursor`) is made available. Note this can happen independently of your `Activity`, triggered automatically by changes in the data set.

  - `onLoadReset()` - the current data set is not available any more. This happens because new data is about to be made available.

Example - Activity

```java
public class PresidentListActivity extends Activity implements LoaderCallbacks<Cursor> {
    SimpleCursorAdapter myAdapter;

    static final String[] PROJECTION = new String[] { "_id", "name", "birthplace" };
    static final String SELECTION = "";

    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        setContentView(R.layout.president_list_activity_layout);

        String[] fromColumns = {"name", "birthplace"};
        int[] toViews = {android.R.id.text1, android.R.id.text2};

        myAdapter = new SimpleCursorAdapter(this, android.R.layout.simple_
                                            null, fromColumns, toViews, 0);

        ListView lv = (ListView)findViewById(R.id.president_list);
        lv.setAdapter(myAdapter);

        getLoaderManager().initLoader(0, null, this);
    }
...
```

Note: use SimpleCursorAdapter - holds a cursor to point to the data set

Example - Callbacks

Uri determines the provider to be called, PROJECTION returned columns, and SELECTION conditions on columns

```
public Loader<Cursor> onCreateLoader(int id, Bundle args) {
  return new CursorLoader(this, Uri.parse("content://org.headless.teht19/presidents"),
                        PROJECTION, SELECTION, null, null);
}

public void onLoadFinished(Loader<Cursor> loader, Cursor c) {
  myAdapter.swapCursor(c);
}

public void onLoaderReset(Loader<Cursor> loader) {
  myAdapter.swapCursor(null);
}
```

The returned data (Cursor) is associated with the adapter here!

Stop using the data in myAdapter.

Reading list

- http://developer.android.com/training/load-data-background/index.html

- (http://developer.android.com/training/basics/data-storage/databases.html

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

  - including Content Provider Basics, Creating a Content Provider, Calendar Provider, Contacts Provider)