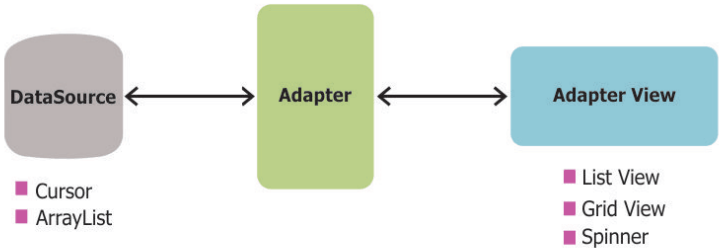
Android Adapters

Highlights

Background

Android Adapters

- Adapters are used to show some data in the activity UI
- An Adapter object acts as a bridge between an AdapterView and the underlying data for that view
- The Adapter provides access to the data items
- The Adapter is also responsible for making a View for each item in the data



Adapter Views

Android Adapters

Views using adapter extends **AdapterView**.

Known Direct Subclasses (all abstract)
AbsListView, AbsSpinner, AdapterViewAnimator

Known Indirect Subclasses
AdapterViewFlipper, AppCompatSpinner, ExpandableListView, Gallery, GridView, ListView, Spinner, StackView

Adapter Sources

Android Adapters

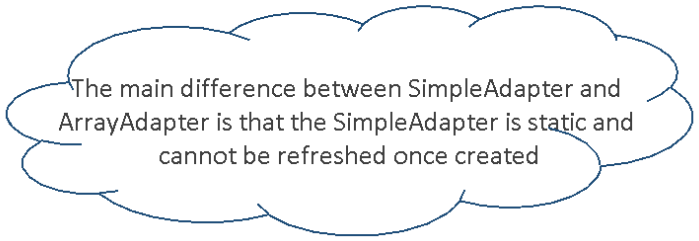
Adapter source is different from adapter to adapter, each adapter handles different source types.

Main Adapters

- SimpleAdapter
- ArrayAdapter
- ListAdapter
- CursorAdapter / SimpleCursorAdapter

Other Adapters

- HeaderViewListAdapter
- ResourceCursorAdapter
- SpinnerAdapter
- ThemedSpinnerAdapter
- WrapperListAdapter



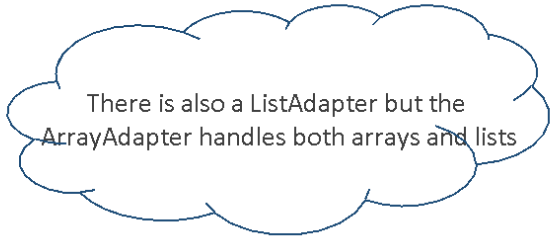
Array Adapter – Main Components

Android Adapters

Array adapters are a simple way to bind a ListView to any array or List.

To use array adapters you need:

- **Array (or ArrayList)**
- **ArrayAdapter**
- **ListView**
- **Item layout**



Array Adapter - Implementation

Android Adapters

```
ArrayAdapter<String> cheeseAdapter =
    new ArrayAdapter<String>(this,
        R.layout.item,
        R.id.cheese_name,
        cheeses
    );
```

```
String[] cheeses = {
            "Parmesan",
            "Ricotta",
            "Fontina",
            "Mozzarella",
            "Cheddar"
          };
```

```
ListView list = (ListView)findViewById(R.id.listView);

list.setAdapter(adapter);
```

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.
com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        android:id="@+id/textView"/>
</LinearLayout>
```

Array Adapter - Constructor

The full ArrayAdapter constructor consists of:

Context – the current activity

Int – id of the item layout (xml)

Int – id of the field in the layout that will show single value (row)

List – the list object

Array Adapter – Adding Items

When using ArrayList as source, adding to the adapter will automatically add the item to the ArrayList and also to the ListView.

Adding items to the ArrayList will not automatically reflect in the ListView but only when the adapter is refreshed (e.g. by calling `notifyDataSetChanged`).

When using array as source changes can only be made to the array and the adapter must be manually refreshed.