android developers

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List View

ListView is a ViewGroup that creates a list of scrollable items. The list items are automatically inserted to the list using a ListAdapter.

In this tutorial, you'll create a scrollable list of country names that are read from a string array. When a list item is selected, a toast message will display the position of the item in the list.

1. Start a new project named *HelloListView*.
2. Create an XML file named `list_item.xml` and save it inside the `res/layout/` folder. Insert the following:

   ```
   <?xml version="1.0" encoding="utf-8"?>
   <TextView xmlns:android="http://schemas.android.com/apk/res/android"
       android:layout_width="fill_parent"
       android:layout_height="fill_parent"
       android:padding="10dp"
       android:textSize="16sp" >
   </TextView>
   ```

   This file defines the layout for each item that will be placed in the ListView.
3. Open the `HelloListView.java` and make the class extend ListActivity (instead of Activity):

   ```
   public class HelloListView extends ListActivity {
   ```

4. Insert the following code for the onCreate() method:

   ```
   @Override
   public void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);

     setListAdapter(new ArrayAdapter<String>(this, R.layout.list_item,
   COUNTRIES));

     ListView lv = getListView();
     lv.setTextFilterEnabled(true);

     lv.setOnItemClickListener(new OnItemClickListener() {
       public void onItemClick(AdapterView<?> parent, View view,
           int position, long id) {
         // When clicked, show a toast with the TextView text
         Toast.makeText(getApplicationContext(), ((TextView) view).getText(),
             Toast.LENGTH_SHORT).show();
       }
     });
   }
   ```

   Notice that this does not load a layout file for the Activity (which you usually do with setContentView(int)). Instead, setListAdapter(ListAdapter) automatically adds a ListView to fill the entire screen of the ListActivity. This method takes an ArrayAdapter, which manages the array of list items that will be placed into the ListView. The ArrayAdapter constructor takes the application Context, the layout description for each list item (created in the previous step), and a List of objects to insert in the ListView (defined next).

   The setTextFilterEnabled(boolean) method turns on text filtering for the ListView, so that when the user begins typing, the list will be filtered.

The `setOnItemClickListener(OnItemClickListener)` method defines the on-click listener for each item. When an item in the `ListView` is clicked, the `onItemClick()` method is called and a `Toast` message is displayed, using the text from the clicked item.

> **Tip:** You can use list item designs provided by the platform instead of defining your own layout file for the `ListAdapter`. For example, try using `android.R.layout.simple_list_item_1` instead of `R.layout.list_item`.

5. After the `onCreate()` method, add the string array:

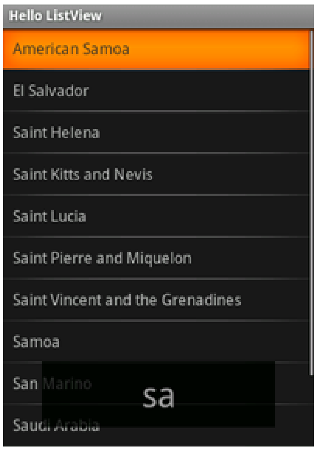
```
  static final String[] COUNTRIES = new String[] {
    "Afghanistan", "Albania", "Algeria", "American Samoa", "Andorra",
    "Angola", "Anguilla", "Antarctica", "Antigua and Barbuda", "Argentina",
    "Armenia", "Aruba", "Australia", "Austria", "Azerbaijan",
    "Bahrain", "Bangladesh", "Barbados", "Belarus", "Belgium",
    "Belize", "Benin", "Bermuda", "Bhutan", "Bolivia",
    "Bosnia and Herzegovina", "Botswana", "Bouvet Island", "Brazil", "British Indian Ocean Territory",
    "British Virgin Islands", "Brunei", "Bulgaria", "Burkina Faso", "Burundi",
    "Cote d'Ivoire", "Cambodia", "Cameroon", "Canada", "Cape Verde",
    "Cayman Islands", "Central African Republic", "Chad", "Chile", "China",
    "Christmas Island", "Cocos (Keeling) Islands", "Colombia", "Comoros", "Congo",
    "Cook Islands", "Costa Rica", "Croatia", "Cuba", "Cyprus", "Czech Republic",
    "Democratic Republic of the Congo", "Denmark", "Djibouti", "Dominica", "Dominican Republic",
    "East Timor", "Ecuador", "Egypt", "El Salvador", "Equatorial Guinea", "Eritrea",
    "Estonia", "Ethiopia", "Faeroe Islands", "Falkland Islands", "Fiji", "Finland",
    "Former Yugoslav Republic of Macedonia", "France", "French Guiana", "French Polynesia",
    "French Southern Territories", "Gabon", "Georgia", "Germany", "Ghana", "Gibraltar",
    "Greece", "Greenland", "Grenada", "Guadeloupe", "Guam", "Guatemala", "Guinea", "Guinea-Bissau",
    "Guyana", "Haiti", "Heard Island and McDonald Islands", "Honduras", "Hong Kong", "Hungary",
    "Iceland", "India", "Indonesia", "Iran", "Iraq", "Ireland", "Israel", "Italy", "Jamaica",
    "Japan", "Jordan", "Kazakhstan", "Kenya", "Kiribati", "Kuwait", "Kyrgyzstan", "Laos",
    "Latvia", "Lebanon", "Lesotho", "Liberia", "Libya", "Liechtenstein", "Lithuania", "Luxembourg",
    "Macau", "Madagascar", "Malawi", "Malaysia", "Maldives", "Mali", "Malta", "Marshall Islands",
    "Martinique", "Mauritania", "Mauritius", "Mayotte", "Mexico", "Micronesia", "Moldova",
    "Monaco", "Mongolia", "Montserrat", "Morocco", "Mozambique", "Myanmar", "Namibia",
    "Nauru", "Nepal", "Netherlands", "Netherlands Antilles", "New Caledonia", "New Zealand",
    "Nicaragua", "Niger", "Nigeria", "Niue", "Norfolk Island", "North Korea", "Northern Marianas",
    "Norway", "Oman", "Pakistan", "Palau", "Panama", "Papua New Guinea", "Paraguay", "Peru",
    "Philippines", "Pitcairn Islands", "Poland", "Portugal", "Puerto Rico", "Qatar",
    "Reunion", "Romania", "Russia", "Rwanda", "Sqo Tome and Principe", "Saint
```

```
Helena",
    "Saint Kitts and Nevis", "Saint Lucia", "Saint Pierre and Miquelon",
    "Saint Vincent and the Grenadines", "Samoa", "San Marino", "Saudi Arabia",
"Senegal",
    "Seychelles", "Sierra Leone", "Singapore", "Slovakia", "Slovenia", "Solomon
Islands",
    "Somalia", "South Africa", "South Georgia and the South Sandwich Islands",
"South Korea",
    "Spain", "Sri Lanka", "Sudan", "Suriname", "Svalbard and Jan Mayen",
"Swaziland", "Sweden",
    "Switzerland", "Syria", "Taiwan", "Tajikistan", "Tanzania", "Thailand",
"The Bahamas",
    "The Gambia", "Togo", "Tokelau", "Tonga", "Trinidad and Tobago", "Tunisia",
"Turkey",
    "Turkmenistan", "Turks and Caicos Islands", "Tuvalu", "Virgin Islands",
"Uganda",
    "Ukraine", "United Arab Emirates", "United Kingdom",
    "United States", "United States Minor Outlying Islands", "Uruguay",
"Uzbekistan",
    "Vanuatu", "Vatican City", "Venezuela", "Vietnam", "Wallis and Futuna",
"Western Sahara",
    "Yemen", "Yugoslavia", "Zambia", "Zimbabwe"
  };
```

This is the array of strings that will be placed into the `ListView`.

6. Run the application.

You can scroll the list, or type to filter it, then click an item to see a message. You should see something like this:



Hello ListView

American Samoa

El Salvador

Saint Helena

Saint Kitts and Nevis

Saint Lucia

Saint Pierre and Miquelon

Saint Vincent and the Grenadines

Samoa

San Marino

Saudi Arabia

Note that using a hard-coded string array is not the best design practice. One is used in this tutorial for simplicity, in order to demonstrate the `ListView` widget. The better practice is to reference a string array defined by an external resource, such as with a `<string-array>` resource in your project `res/values/strings.xml` file. For example:

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <string-array name="countries_array">
        <item>Bahrain</item>
        <item>Bangladesh</item>
        <item>Barbados</item>
        <item>Belarus</item>
        <item>Belgium</item>
        <item>Belize</item>
        <item>Benin</item>
    </string-array>
</resources>
```

To use these resource strings for the `ArrayAdapter`, replace the original `setListAdapter(ListAdapter)` line with the following:

```
String[] countries = getResources().getStringArray(R.array.countries_array);
setListAdapter(new ArrayAdapter<String>(this, R.layout.list_item, countries));
```

References

- `ListView`
- `ListAdapter`

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