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# Using data binding in Android - Tutorial

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*This tutorial describes the usage of data binding in Android applications. Data binding allows to synchronize your user interface with your application model and logic.*

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## 1. Using data binding in Android applications

### 1.1. Introduction to data binding in Android

Android offers support to write declarative layouts using data binding. This minimizes the necessary code in your application logic to connect to the user interface elements.

The usage of data binding requires changes in your layout files. Such layout files starts with a `layout` root tag followed by a `data` element and a `view` root element. The data elements describe data which is available for binding. This `view` element contains your root hierarchy similar to layout files which are not used with data binding. References to the data elements or expressions within the layout are written in the attribute properties using the `@{}` or `@={}` ,

XML





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```

<data
  variable name="temp"
  type="com.vogella.android.databinding.TemperatureData" />
1
</data>
<LinearLayout
  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="@{temp.location}" />
  <TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@{temp.celsius}" />
  </LinearLayout>
</layout>

```

- 1 The user variable within data describes a property that may be used within this layout.
- 2 Normal view hierarchy

Android data binding generates a `Binding` class based on this layout. This class holds all the bindings from the layout properties, i.e., the defined variable to the corresponding views. It also provides generated setters for your data elements from the layout. The name of the generated class is based on the name of the layout file. This name is converted to Pascal case and the `Binding` suffix is added to it. For example, if the layout file is called `activity_main.xml`, the generate class is called `ActivityMainBinding`. You can inflate the layout and connect your model via this class or the `DataBindingUtil` class.

```

TemperatureData temperatureData = // your data is created here
ActivityMainBinding binding = DataBindingUtil.setContentview(this,
R.layout.activity_main);
binding.setTemp(temperatureData); // generated setter based on the
data in the layout file

```

You can use the `inflate` method on the generated class. This is useful for using data binding in fragments, `ListView` or `RecyclerView`.

```

ActivityMainBinding binding =
ActivityMainBinding.inflate(getLayoutInflater(), container,
attachToContainer);
// get the root view
View view = binding.getRoot();
// do more stuff
TemperatureData temperatureData = // your data is created here
binding.setTemp(temperatureData); // generated setter based on the
data in the layout file

```



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## 1.2. Enable data binding in your Android application

To enable the usage of data binding in your Android application, add the following snippet to the app/build.gradle file.

```
android {
    ...
    dataBinding {
        enabled = true
    }
}
```

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## 1.3. Data binding for events via listener bindings and method references

Events may be bound to handler methods directly, similar to the way `android:onClick` can be assigned to a method in the activity. Event attribute names are governed by the name of the listener method with a few exceptions. For example, `View.OnLongClickListener` has a method `onLongClick()`, so the attribute for this event is `android:onLongClick`.

To assign an event to its handler, use a normal binding expression, with the value being the method name to call. The binding expression can assign the click listener for a `View`.

```
<?xml version="1.0" encoding="utf-8"?>
<layout xmlns:android="http://schemas.android.com/apk/res/android">

    <data>
        <variable
            name="presenter"

            type="com.vogella.android.databinding.MainActivityPresenter"/>
        </data>

    <Button
        android:text="Start second activity"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="@{() -> presenter.showList()}"
        />

</layout>
```

XML

You could also bind to a method reference via

`android:onClick="@{handlers::onClickFriend}"/>`. If you methods need parameters, you can also pass your data object to them. For example:

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## 1.4. Imports

You can also import classes to use them in your data binding expressions.

```

<data>
  <import type="com.example.MyStringUtils"/>
  <variable name="user" type="com.example.User"/>
</data>

<TextView
  android:text="@{MyStringUtils.capitalize(user.lastName)}"
  android:layout_width="wrap_content"
  android:layout_height="wrap_content"/>
  
```


JAVA

## 1.5. Updating the user interfaces with changes from the data model

Any plain old Java object (POJO) can be used for data binding. But if updates in the data model should also update the user interface, the objects must be able to notify about data changes. There are three different data change notification mechanisms: \* observable objects \* observable fields \* observable collections

Android provides the `BaseObservable` class which you can extend. The data class is responsible for notifying when the properties change. This is done by assigning a `@Bindable` annotation to the getter and notifying in the setter.

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```

import android.databinding.BaseObservable;
import java.util.Observable;

public class TemperatureData extends BaseObservable {
    private String celsius;

    public TemperatureData(String celsius) {
        this.celsius = celsius;
    }

    @Bindable
    public String getCelsius() {
        return celsius;
    }

    public void setCelsius(String celsius) {
        this.celsius = celsius;
        notifyPropertyChanged(BR.celsius);
    }
}

```

- 1 Define a relevant getter
- 2 Notify any listeners, BR.celsius is a generated class

This listener is invoked on every update and it updates the corresponding views. This ensures that updates in the model updates also the UI.

Alternatively to create an observable class, you can also use `ObservableField` and its subclass for properties.

```

private class TemperatureData {
    public final ObservableField<String> celsius = new
ObservableField<>();
    public final ObservableField<String> location = new
ObservableField<>();
}

```

To access such fields in your code, use the `set` and `get` methods.

```

temp.location.set("Hamburg");
String celsius = temp.celsius.get();

```

## 1.6. Custom converters with BindingAdapter

Sometimes you have to perform complex data conversions. For this, you can register a custom converter via the static `@BindingAdapter` method. This method can be placed anywhere in your code and can override the default conversion of a field to your data model.


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&lt;ImageView

```

android:id="@+id/icon"
android:layout_height="fill_parent"
android:layout_alignParentBottom="true"
android:layout_alignParentTop="true"
android:layout_marginRight="6dip"
android:contentDescription="TODO"
android:src="@{obj.url}"
/>

```

You can register for this property on `ImageView` with the following method. This method uses [Glide](http://www.vogella.com/tutorials/AndroidHandlingImages/article.html) (<http://www.vogella.com/tutorials/AndroidHandlingImages/article.html>) to download the image.

```

@BindingAdapter("android:src")
public static void setImageUrl(ImageView view, String url) {
    Glide.with(view.getContext()).load(url).into(view);
}

```

JAVA

## 2. Exercise: Using data binding in Android applications

In this exercise you learn how to interact between your user interface widgets using data binding. Create a new Android application for this exercise, with the `com.vogella.android.databinding` top level package. Use the *Empty* template for this purpose.

### 2.1. Activate the usage of data binding

Open your *app/build.gradle* file and activate the usage of data binding.

```

apply plugin: 'com.android.application'

android {

    dataBinding {
        enabled = true
    }

    .... [REST AS BEFORE...]

```

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Ensure you pick the correct build file. This setting must be done in the *build.gradle* file of your app.



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## 2.2. Create classes for the view interaction

Create the following classes.

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```

package com.vogella.android.databinding;

import android.databinding.BaseObservable;
import android.databinding.Bindable;

public class TemperatureData extends BaseObservable {
    private String location;
    private String celsius;

    public TemperatureData(String location, String celsius) {
        this.location = location;
        this.celsius = celsius;
    }

    @Bindable
    public String getCelsius() {
        return celsius;
    }

    @Bindable
    public String getLocation() {
        return location;
    }

    public void setLocation(String location){
        this.location = location;
        notifyPropertyChanged(BR.location);
    }

    public void setCelsius(String celsius) {
        this.celsius = celsius;
        notifyPropertyChanged(BR.celsius);
    }
}

```



The BR class is not yet generated. After the definition of the layout file, the is will be generated by the Gradle tooling.

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```

public interface MainActivityContract {
    public interface Presenter {
        void onShowData(TemperatureData temperatureData);
    }

    public interface View {
        void showData(TemperatureData temperatureData);
    }
}

package com.vogella.android.databinding;

import android.content.Context;

public class MainActivityPresenter implements
MainActivityContract.Presenter {
    private MainActivityContract.View view;
    private Context ctx;

    public MainActivityPresenter(MainActivityContract.View view,
Context ctx) {
        this.view = view;
        this.ctx = ctx;
    }

    @Override
    public void onShowData(TemperatureData temperatureData) {
        view.showData(temperatureData);
    }
}
  
```

JAVA

## 2.3. Adjust layout file and activity to use data binding

Change the layout to the following.

XML





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```

<data>
    <variable
        name="temp"
        type="com.vogella.android.databinding.TemperatureData"
    />

    <variable
        name="presenter"
        type="com.vogella.android.databinding.MainActivityPresenter" />
</data>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    >
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="@{temp.location}"
    />
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="@{temp.celsius}"
    />

    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="8dp"
        android:text="@{temp.celsius}" />

    <Button
        android:text="Show data model"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="@{() -> presenter.onShowData(temp)}"
        android:id="@+id/button" />

</LinearLayout>
</layout>

```



You see some warning messages in the editor, e.g., because you used hard-codes strings. For this exercise, we ignore these warnings.

Adjust your activity code to use the generated data binding classes.

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```

import android.app.Activity;
import android.content.Intent;
import android.databinding.DataBindingUtil;
import android.os.Bundle;
import android.support.design.widget.Snackbar;
import android.widget.Toast;

import com.vogella.android.databinding.databinding.ActivityMainBinding;

public class MainActivity extends Activity implements
    MainActivityContract.View {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        ActivityMainBinding binding =
            DataBindingUtil.setContentView(this, R.layout.activity_main);
        MainActivityPresenter mainActivityPresenter = new
            MainActivityPresenter(this, getApplicationContext());
        TemperatureData temperatureData = new
            TemperatureData("Hamburg", "10");
        binding.setTemp(temperatureData);
        binding.setPresenter(mainActivityPresenter);
    }

    @Override
    public void showData(TemperatureData temperatureData) {
        String celsius = temperatureData.getCelsius();
        Toast.makeText(this, celsius, Toast.LENGTH_SHORT).show();
    }
}

```

## 2.4. Convince Android Studio to compile your application

If the BR class is missing, select Build ► Clean followed by Build ► Make Project.

## 2.5. Validate your application

Start your application. If you press the button, a small popup should be shown with the correct data.

The first text view should The second TextView should update automatically, if you type in the EditText field.

## 3. Exercise: Using data binding for RecyclerView

In this exercise you learn how to use data binding for a recyclerview. Continue to use the `com.vogella.android.databinding` package.

### 3.1. Define a new activity and allow to start it

Create a new activity called `SecondActivity`. Ensure that you add it to



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Adjust your MVP contract to start the second activity.

```

package com.vogella.android.databinding;

public interface MainActivityContract {
    public interface Presenter {
        void onShowData(TemperatureData temperatureData);
        void showList();
    }

    public interface View {
        void showData(TemperatureData temperatureData);
    }
}

```

Implement this new behavior in MainActivityPresenter to start the second activity.

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```

package com.vogella.android.databinding;

import android.content.Context;
import android.content.Intent;

public class MainActivityPresenter implements
    MainActivityContract.Presenter {

    private MainActivityContract.View view;
    private Context ctx;

    public MainActivityPresenter(MainActivityContract.View view,
        Context ctx) {
        this.view = view;
        this.ctx = ctx;
    }

    @Override
    public void onShowData(TemperatureData temperatureData) {
        view.showData(temperatureData);
    }


    @Override
    public void showList() {
        Intent i = new Intent(ctx, SecondActivity.class);
        ctx.startActivity(i);
    }
}

```

## 3.2. Adjust layout file and activity to use data binding

Change the layout to the following.

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```

<data>
    <variable
        name="temp"
        type="com.vogella.android.databinding.TemperatureData"
    />

    <variable
        name="presenter"
        type="com.vogella.android.databinding.MainActivityPresenter" />
</data>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    >
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="@{temp.location}"
    />
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="@{temp.celsius}"
    />

    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="8dp"
        android:text="@{temp.celsius}" />

    <Button
        android:text="Show data model"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="@{() -> presenter.onShowData(temp)}"
        android:id="@+id/button" />

    <Button
        android:text="Start second activity"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:onClick="@{() -> presenter.showList()}"
    />

</LinearLayout>
</layout>

```

### 3.3. Add dependency to RecyclerView

Open your *app/build.gradle* file and add the dependency to recyclerview.

```

dependencies {
    // more
    compile "com.android.support:recyclerview-v7:25.1.1"
}

```

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### 3.4. Create icon

Add an `ic_listentry` icon to your application.

### 3.5. Implement the RecyclerView with data binding.

Create the following layout called `activity_second.xml`.

```

<?xml version="1.0" encoding="utf-8"?>
<layout xmlns:android="http://schemas.android.com/apk/res/android">

    <data>
        <variable
            name="temp"
            type="com.vogella.android.databinding.TemperatureData"
        />
        <variable
            name="presenter"
            type="com.vogella.android.databinding.MainActivityPresenter" />
    </data>

    <android.support.v7.widget.RecyclerView
        android:id="@+id/my_recycler_view"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:scrollbars="vertical" />
</layout>
  
```

XML

Create the following layout called `rowlayout.xml`.

XML



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```

<data>
<variable
    name="obj"
    type="com.vogella.android.databinding.TemperatureData"
/>
</data>

<RelativeLayout
    android:layout_width="fill_parent"
    android:layout_height="?android:attr/listPreferredItemHeight"
    android:padding="6dip"
>

    <ImageView
        android:id="@+id/icon"
        android:layout_width="wrap_content"
        android:layout_height="fill_parent"
        android:layout_alignParentBottom="true"
        android:layout_alignParentTop="true"
        android:layout_marginRight="6dip"
        android:contentDescription="TODO"
        android:src="@drawable/ic_listentry"
    />

    <TextView
        android:id="@+id/secondLine"
        android:layout_width="fill_parent"
        android:layout_height="26dip"
        android:layout_alignParentBottom="true"
        android:layout_alignParentRight="true"
        android:layout_toRightOf="@id/icon"
        android:ellipsize="marquee"
        android:text="@{obj.location}"
        android:textSize="12sp"
        android:maxLines="1"
    />

    <TextView
        android:id="@+id/firstLine"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:layout_above="@id/secondLine"
        android:layout_alignParentRight="true"
        android:layout_alignParentTop="true"
        android:layout_alignWithParentIfMissing="true"
        android:layout_toRightOf="@id/icon"
        android:gravity="center_vertical"
        android:text="@{obj.celsius}"
        android:textSize="16sp"
    />

</RelativeLayout>

</layout>

```

Create the following adapter.



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```

import android.databinding.DataBindingUtil;
import android.databinding.ViewDataBinding;
import android.support.v7.widget.RecyclerView;
import android.view.LayoutInflater;
import android.view.ViewGroup;

import com.vogella.android.databinding.databinding.RowlayoutBinding;

import java.util.List;

public class MyAdapter extends
    RecyclerView.Adapter<MyAdapter.MyViewHolder> {
    private List<TemperatureData> data;

    // Provide a reference to the views for each data item
    // Complex data items may need more than one view per item,
    and
    // you provide access to all the views for a data item in a
    view holder
    public class MyViewHolder extends RecyclerView.ViewHolder {
        // each data item is just a string in this case
        private final ViewDataBinding binding;

        public MyViewHolder(ViewDataBinding binding) {
            super(binding.getRoot());
            this.binding = binding;
        }

        public void bind(Object obj) {
            binding.setVariable(BR.obj,obj);
            binding.executePendingBindings();
        }
    }

    // Provide a suitable constructor (depends on the kind of
    dataset)
    public MyAdapter(List<TemperatureData> myDataset) {
        data = myDataset;
    }

    // Create new views (invoked by the layout manager)
    @Override
    public MyViewHolder onCreateViewHolder(ViewGroup parent,
        int viewType) {
        // create a new view
        LayoutInflater inflater =
            LayoutInflater.from(parent.getContext());
        ViewDataBinding binding =
            DataBindingUtil.inflate(inflater, R.layout.rowlayout, parent,
                false);

        // set the view's size, margins, paddings and
        layout parameters
        return new MyViewHolder(binding);
    }

    // Replace the contents of a view (invoked by the layout
    manager)
    @Override
    public void onBindViewHolder(MyViewHolder holder, int
        position) {
        final TemperatureData temperatureData =

```



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```
// Return the size of your dataset (invoked by the layout
```

```
@Override
```

```
public int getItemCount() {
    return data.size();
}
```

Update your `SecondActivity` class.

```
package com.vogella.android.databinding;

import android.app.Activity;
import android.os.Bundle;
import android.support.v7.widget.LinearLayoutManager;
import android.support.v7.widget.RecyclerView;

import java.util.Arrays;
import java.util.List;

public class SecondActivity extends Activity {

    private RecyclerView recyclerView;
    private RecyclerView.Adapter mAdapter;
    private RecyclerView.LayoutManager layoutManager;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        recyclerView = (RecyclerView)
            findViewById(R.id.my_recycler_view);

        // use this setting to improve performance if you know that
        changes
        // in content do not change the layout size of the
        RecyclerView
        recyclerView.setHasFixedSize(true);

        // use a linear layout manager
        layoutManager = new LinearLayoutManager(this);
        recyclerView.setLayoutManager(layoutManager);

        List<TemperatureData> items =
            Arrays.asList(new TemperatureData("Hamburg", "5"),
                new TemperatureData("Berlin", "6"));

        // define an adapter
        mAdapter = new MyAdapter(items);
        recyclerView.setAdapter(mAdapter);
    }
}
```

### 3.6. Validate your application





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### 3.7. Optional exercise: Create an abstract class for your adapter

Most of code in adapter can be the same if data binding is used. The only requirement is that the object name in the layout file is the same, so that the generated entry in the BR class is the same. In our example we use obj for it.

To reuse most of our adapter, create an abstract class with the logic to bind to any object.

JAVA



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```

import android.databinding.DataBindingUtil;
import android.databinding.ViewDataBinding;
import android.support.v7.widget.RecyclerView;
import android.view.LayoutInflater;
import android.view.ViewGroup;

import
com.vogella.android.databinding.databinding.RowlayoutBinding;

public abstract class MyBaseAdapter extends
RecyclerView.Adapter<MyBaseAdapter.MyViewHolder> {

    // Provide a reference to the views for each data item
    // Complex data items may need more than one view per item,
    and
    // you provide access to all the views for a data item in a
    view holder

    public class MyViewHolder extends RecyclerView.ViewHolder {
        // each data item is just a string in this case
        private final ViewDataBinding binding;

        public MyViewHolder(ViewDataBinding binding) {
            super(binding.getRoot());
            this.binding = binding;
        }

        public void bind(Object obj) {
            binding.setVariable(BR.obj,obj);
            binding.executePendingBindings();
        }
    }

    @Override
    public MyViewHolder onCreateViewHolder(ViewGroup parent,
int viewType) {
        // create a new view
        LayoutInflater inflater =
LayoutInflater.from(parent.getContext());
        ViewDataBinding binding =
DataBindingUtil.inflate(inflater,
getLayoutIdForType(viewType), parent, false);
        // set the view's size, margins, paddings and
        layout parameters
        return new MyViewHolder(binding);
    }

    // Replace the contents of a view (invoked by the layout
    manager)
    @Override
    public void onBindViewHolder(MyViewHolder holder, int
position) {
        holder.bind(getDataAtPosition(position));
    }

    public abstract Object getDataAtPosition(int position);

    public abstract int getLayoutIdForType(int viewType);
}

```



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```

package com.vogella.android.databinding;

import java.util.List;

public class MyAdapter extends MyBaseAdapter {

    List<TemperatureData> data;

    // Provide a suitable constructor (depends on the kind of dataset)
    public MyAdapter(List<TemperatureData> myDataset) {
        data = myDataset;
    }

    @Override
    public Object getDataAtPosition(int position) {
        return data.get(position);
    }

    @Override
    public int getLayoutIdForType(int viewType) {
        return R.layout.rowlayout;
    }

    @Override
    public int getItemCount() {
        return data.size();
    }
}

```



Having this base adapter allows you to reuse lots of code for new adapter implementations.

### 3.8. Optional exercise: Use a custom converter

Add a field `url` to your data model and use [Glide](http://www.vogella.com/tutorials/AndroidHandlingImages/article.html) (http://www.vogella.com/tutorials/AndroidHandlingImages/article.html) to download such an image. Examples URLs for images can be found on <http://lorempixel.com/>.

Add the following dependency to your `app/build.gradle` file.

```
compile 'com.github.bumptech.glide:glide:3.6.1'
```

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To allow Glide to download from the Internet, add the permission to use the Internet to your manifest.

```
<uses-permission android:name="android.permission.INTERNET"></uses-permission>
```

XML

To register a custom converter, define the following static method, either in your activity or in a separate class.



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Now change your data model.

```

package com.vogella.android.databinding;

import android.databinding.BaseObservable;
import android.databinding.Bindable;

public class TemperatureData extends BaseObservable {

    private String location;

    private String celsius;

    private String url;

    public TemperatureData(String location, String celsius, String url) {
        this.location = location;
        this.celsius = celsius;
        this.url = url;
    }

    @Bindable
    public String getCelsius() {
        return celsius;
    }

    @Bindable
    public String getLocation() {
        return location;
    }

    @Bindable
    public String getUrl() {
        return url;
    }


    public void setLocation(String location) {
        this.location = location;
        notifyPropertyChanged(BR.location);
    }

    public void setCelsius(String celsius) {
        this.celsius = celsius;
        notifyPropertyChanged(BR.celsius);
    }

    public void setUrl(String url) {
        this.url = url;
        notifyPropertyChanged(BR.url);
    }
}

```

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Java

```
List<TemperatureData> items =
    Arrays.asList(
        new TemperatureData( "hamburg", "5", "http://lorempixel.com
/40/40/" ),
        new TemperatureData( "Berlin", "6", "http://lorempixel.com
/40/40/" ));
```

Adjust the android.src attribute in your rowlayout.xml .

XML

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<data>
<variable
  name="obj"
  type="com.vogella.android.databinding.TemperatureData"
/>
</data>

<RelativeLayout
  android:layout_width="fill_parent"
  android:layout_height="?android:attr/listPreferredItemHeight"
  android:padding="6dip"
>

  <ImageView
    android:id="@+id/icon"
    android:layout_width="wrap_content"
    android:layout_height="fill_parent"
    android:layout_alignParentBottom="true"
    android:layout_alignParentTop="true"
    android:layout_marginRight="6dip"
    android:contentDescription="TODO"
    android:src="@{obj.url}"
  />


  <TextView
    android:id="@+id/secondLine"
    android:layout_width="fill_parent"
    android:layout_height="26dip"
    android:layout_alignParentBottom="true"
    android:layout_alignParentRight="true"
    android:layout_toRightOf="@id/icon"
    android:ellipsize="marquee"
    android:text="@{obj.location}"
    android:textSize="12sp"
    android:maxLines="1"
  />

  <TextView
    android:id="@+id/firstLine"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content"
    android:layout_above="@id/secondLine"
    android:layout_alignParentRight="true"
    android:layout_alignParentTop="true"
    android:layout_alignWithParentIfMissing="true"
    android:layout_toRightOf="@id/icon"
    android:gravity="center_vertical"
    android:text="@{obj.celsius}"
    android:textSize="16sp"
  />

</RelativeLayout>

</layout>

```



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#### 4. About this website

#### 5. Android databinding resources

- Androids Data Binding Library

(https://developer.android.com/topic/libraries/data-binding/index.html)
- Blog about about custom setters in Data binding

(https://medium.com/google-developers/android-data-binding-custom-setters-55a25a7aea47)
- George Mount about Data Binding and RecyclerView


(https://medium.com/google-developers/android-data-binding-recyclerview-db7c40d9f0e4)
- Dynamic view generation with Data Binding

(https://medium.com/google-developers/android-data-binding-list-tricks-ef3d5630555e)
- Video introduction into Data Binding

(https://news.realm.io/news/data-binding-android-boyar-mount/)

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