(http://www.vogella.com)

Before

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Donate (http://www.vogella.com/support.html) (Contact us http://www.vogella.com/contact.html) 1, 23.04.2017

#### /index.ht **QUICK LINKS**

Training (http://www.vo /training/ecli

/eclipsercp.ht

• 05 FEB - RC

• 19 FEB -Android

> Development (http://www.vo /training/and /androidprofes

• voge11a Training (http://www.vo /training/)

• vogella Boc (ht.t.n://www.va



- 1. Using data binding in Android applications
- 2. Exercise: Using data binding in Android applications
- 3. Exercise: Using data binding for RecyclerView
- 4. About this website
- 5. Android databinding resources Appendix A: Copyright and License

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.



pro



2017年度最划算 的VPN

每月只需2. 加密的网络

### 1. Using data binding in Android applications

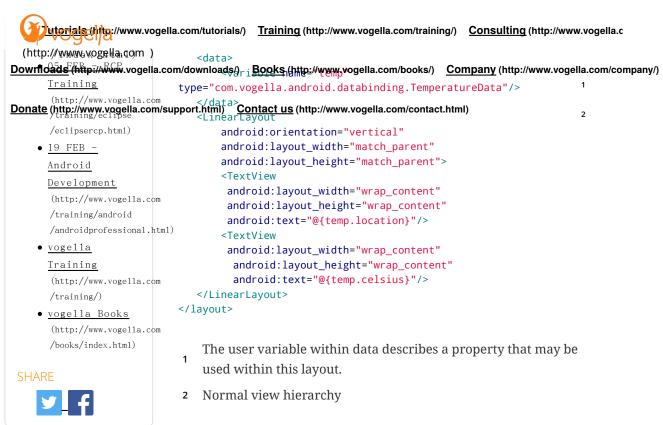
#### 1.1. Introduction to data binding in Android

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 @={},

XMI





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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#### /training/)

• vogella Books (http://www.vogella.com

/books/index.html)



### method references

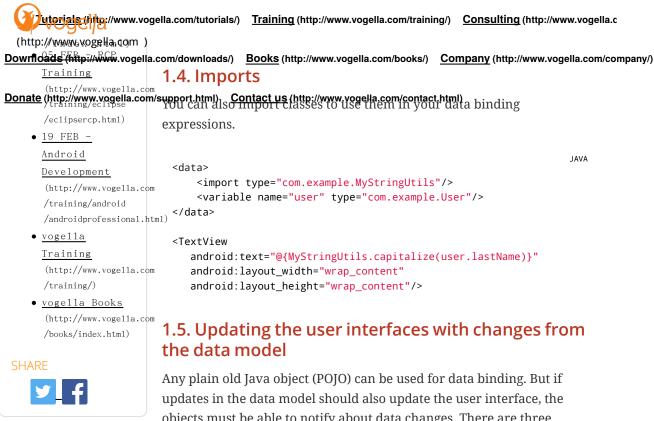
Events may be bound to handler methods directly, similar to the way android:onClick can be assigned to a method in the activity. Event attribute names are governed by the name of the listener method with a few exceptions. For example, View.OnLongClickListener has a method onLongClick(), so the attribute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

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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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.

JAVA

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```
utorials (http://www.vogella.com/tutorials/) <u>Training</u> (http://www.vogella.com/training/) <u>Consulting</u> (http://www.vogella.c
  (http://www.vogeHangom)
Downfloads (http://www.vogella.com/dpwploads() το Books (http://www.vogella.com/company/)
       Training
                                import android.databinding.Bindable;
Donate (http://www.vogella.com/support.html) Contact us (http://www.vogella.com/contact.html) training/eclipse import java.util.Observable;
       /eclipsercp.html)
     • 19 FEB -
                                public class TemperatureData extends BaseObservable {
                                     private String celsius;
       Android
       <u>Development</u>
                                     public TemperatureData(String celsius) {
       (http://www.voge11a.com
                                         this.celsius = celsius;
       /training/android
       /androidprofessional.html)
     • voge11a
                                     @Bindable
       Training
                                     public String getCelsius() {
                                         return celsius;
       (http://www.vogella.com
       /training/)
     • vogella Books
                                     public void setCelsius(String celsius) {
        (http://www.vogella.com
                                         this.celsius = celsius;
       /books/index.html)
                                         notifyPropertyChanged(BR.celsius);
                                     }
                                }
                                     Define a relevant getter
```

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 a observable class, you can also use ObservableField and its subclass for properties.

```
JAVA
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.

```
JAVA
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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# 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.

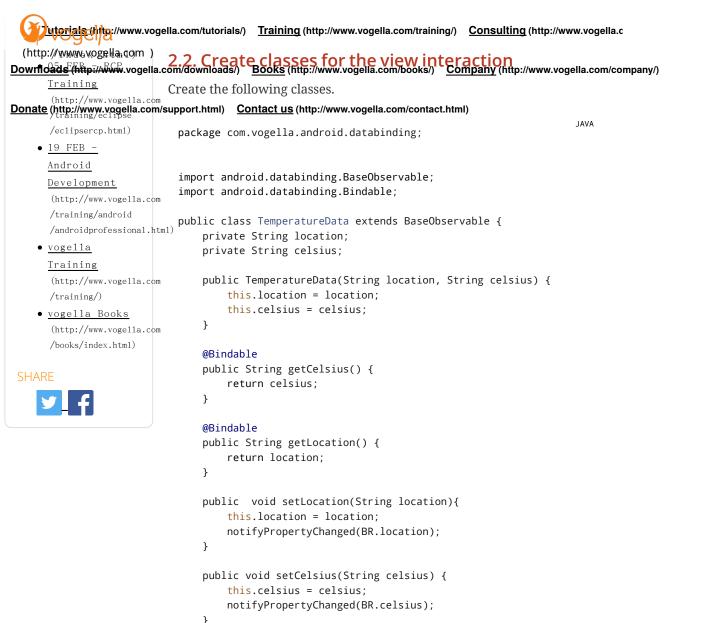
#### 2.1. Activate the usage of data binding

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...]
```



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





}

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

JAVA

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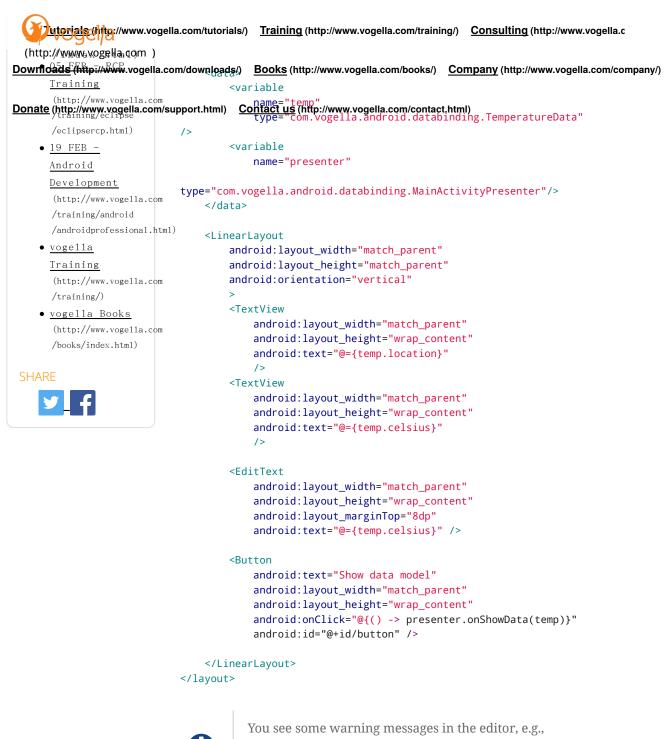
```
utorials (http://www.vogella.com/tutorials/) <u>Training</u> (http://www.vogella.com/training/) <u>Consulting</u> (http://www.vogella.c
  (http://www.kogella.gom)
Downfloads (http://www.vogella.com/downloads/)er Books (http://www.vogella.com/books/) Company (http://www.vogella.com/company/)
       <u>Training</u>
                                      public interface Presenter {
Donate (http://www.vogella.com/support.html) void onShowData(TemperatureData temperatureData); Contact us (http://www.vogella.com/contact.html)
        /eclipsercp.html)
                                      public interface View {
     • 19 FEB -
                                          void showData(TemperatureData temperatureData);
       Android
       <u>Development</u>
        (http://www.voge11a.com
                                 }
        /training/android
        /androidprofessional.html)
     • <u>vogella</u>
                                                                                                               JAVA
                                 package com.vogella.android.databinding;
       Training
        (http://www.vogella.com
                                 import android.content.Context;
        /training/)
     • <u>vogella Books</u>
                                 public class MainActivityPresenter implements
        (http://www.vogella.com
                                 MainActivityContract.Presenter {
        /books/index.html)
                                     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);
                                 }
```

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

Change the layout to the following.

XML

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

we ignore these warnings.

because you used hard-codes strings. For this exercise,

JAVA

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## 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

```
utorials (http://www.vogella.com/tutorials/) <u>Training</u> (http://www.vogella.com/training/) <u>Consulting</u> (http://www.vogella.c
  (http://www.yogella.gom)
                          Adjust your MVP contract to start the second activity.
Downfloads (http://www.vogella.com/downloads/) Books (http://www.vogella.com/books/) Company (http://www.vogella.com/company/)
      Training
/eclipsercp.html)
                            public interface MainActivityContract {
    • 19 FEB -
                                 public interface Presenter {
      Android
                                     void onShowData(TemperatureData temperatureData);
      <u>Development</u>
                                     void showList();
      (http://www.voge11a.com
      /training/android
      /androidprofessional.html)
                                public interface View {
    • voge11a
                                     void showData(TemperatureData temperatureData);
      Training
      (http://www.vogella.com
                            }
      /training/)
    • vogella Books
       (http://www.vogella.com
                          Implement this new behavior in MainActivityPresenter to start the
      /books/index.html)
                           second activity.
                                                                                                JAVA
                            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.

XML

```
utorials (http://www.vogella.com/tutorials/) <u>Training</u> (http://www.vogella.com/training/) <u>Consulting</u> (http://www.vogella.c
  (http://www.kogella.gom)
Dowrfloads (http://www.vogella.com/downloads/)
                                           Books (http://www.vogella.com/books/) Company (http://www.vogella.com/company/)
      Training
                                      <variable
(http://www.vogella.com/support.html)

Donate (http://www.vogella.com/support.html)
                                        /eclipsercp.html)
     • 19 FEB -
                                      <variable
                                           name="presenter"
      Android
      <u>Development</u>
                              type="com.vogella.android.databinding.MainActivityPresenter"/>
       (http://www.voge11a.com
       /training/android
       /androidprofessional.html)
                                  <LinearLayout
     • voge11a
                                      android:layout_width="match_parent"
      Training
                                      android:layout_height="match_parent"
       (http://www.vogella.com
                                      android:orientation="vertical"
       /training/)
                                      <TextView
    • vogella Books
                                           android:layout_width="match_parent"
       (http://www.vogella.com
                                           android:layout_height="wrap_content"
       /books/index.html)
                                           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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Create the following layout called rowlayout.xml.

XML

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```
utorials (http://www.vogella.com/tutorials/) Training (http://www.vogella.com/training/) Consulting (http://www.vogella.c
  (http://www.vogella.gom)
                                    <data>
Downfloads (http://www.vogella.com/downloads/)
                                             Books (http://www.vogella.com/books/) Company (http://www.vogella.com/company/)
       Training
                                        <variable
(http://www.vogella.com/support.html)

Donate (http://www.vogella.com/support.html)
                                          Contact us (http://www.vogella.com/contact.html)
type="com.vogella.android.databinding.TemperatureData"
       /eclipsercp.html)
     • 19 FEB -
                                    </data>
       Android
                                    <RelativeLayout
       <u>Development</u>
                                        android:layout_width="fill_parent"
       (http://www.voge11a.com
       /training/android
                               android:layout_height="?android:attr/listPreferredItemHeight"
       /androidprofessional.html)
                                        android:padding="6dip"
     • voge11a
       Training
       (http://www.vogella.com
                                        <ImageView
                                             android:id="@+id/icon"
       /training/)
                                             android:layout_width="wrap_content"
     • vogella Books
                                             android:layout_height="fill_parent"
       (http://www.vogella.com
                                             android:layout_alignParentBottom="true"
       /books/index.html)
                                             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.

```
utorials (http://www.vogella.com/tutorials/) <u>Training</u> (http://www.vogella.com/training/) <u>Consulting</u> (http://www.vogella.c
    (http://www.vogella.gom)
                                                        import android.databinding.DataBindingUtil;
Downfloads (http://www.vogella.com/μρωμίοαμε) το Βροίς (http://www.vogella.com/μρωμίοαμε).
             Training
                                                        import android.support.v7.widget.RecyclerView;
Donate (http://www.vogella.com/support.ntml) (http://www.vogella.com/support.ntml) (http://www.vogella.com/support.ntml) (http://www.vogella.com/contact.html) (http://www.vogella.com/support.ntml) (http://www.vogella.com/s
              /eclipsercp.html)
         • 19 FEB -
                                                        import
                                                        com.vogella.android.databinding.databinding.RowlayoutBinding;
             Android
             <u>Development</u>
                                                        import java.util.List;
              (http://www.vogella.com
             /training/android
                                                        public class MyAdapter extends
              /androidprofessional.html)
                                                        RecyclerView.Adapter<MyAdapter.MyViewHolder> {
          • voge11a
                                                                        private List<TemperatureData> data;
             Training
                                                                         // Provide a reference to the views for each data item
              (http://www.vogella.com
                                                                         // Complex data items may need more than one view per item,
             /training/)
                                                        and
         • vogella Books
                                                                         // you provide access to all the views for a data item in a
              (http://www.vogella.com
                                                        view holder
             /books/index.html)
                                                                        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)
                                                                        public MyViewHolder onCreateViewHolder(ViewGroup parent,
                                                        int viewType) {
                                                                                         // create a new view
                                                                                         LayoutInflater layoutInflater =
                                                        LayoutInflater.from(parent.getContext());
                                                                                         ViewDataBinding binding =
                                                        DataBindingUtil.inflate(layoutInflater, 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
```

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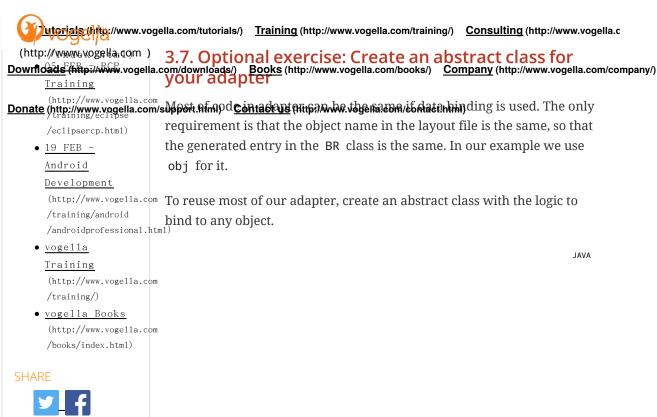
final TemperatureData temperatureData =

position) {

```
utorials thtp://www.vogella.com/tutorials/) <u>Training (http://www.vogella.com/training/)</u> <u>Consulting (http://www.vogella.com/training/)</u>
  (http://www.vogella.gom)
Downfloads (http://www.vogella.com/downloads/)
                                           Books (http://www.vogella.com/books/) Company (http://www.vogella.com/company/)
      Training
                                       // Return the size of your dataset (invoked by the layout
Donate (http://www.vogella.com/suppertainsil)

Contact us (http://www.vogella.com/suppertainsil)
                                      @Override
       /eclipsercp.html)
                                      public int getItemCount() {
     • 19 FEB -
                                           return data.size();
      Android
      Development
       (http://www.vogella.com
       /training/android
       /androidprofessional.html) Update your SecondActivity class.
     • voge11a
      Training
                                                                                                     JAVA
       (http://www.vogella.com
                              package com.vogella.android.databinding;
       /training/)
     • vogella Books
                              import android.app.Activity;
                              import android.os.Bundle;
       (http://www.vogella.com
                              import android.support.v7.widget.LinearLayoutManager;
       /books/index.html)
                              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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```
utorials (http://www.vogella.com/tutorials/) <u>Training</u> (http://www.vogella.com/training/) <u>Consulting</u> (http://www.vogella.c
    (http://www.wogeHangom)
                                                         import android.databinding.DataBindingUtil;
Downfloads (http://www.vogella.com/μρωμίοαμε) το Βροίς (http://www.vogella.com/μρωμίοαμε).
             <u>Training</u>
                                                         import android.support.v7.widget.RecyclerView;
Donate (http://www.vogella.com/support.ntml) (http://www.vogella.com/support.ntml) (http://www.vogella.com/support.ntml) (http://www.vogella.com/contact.html) (http://www.vogella.com/support.ntml) (http://www.vogella.com/s
              /eclipsercp.html)
         • 19 FEB -
                                                         import
                                                         com.vogella.android.databinding.databinding.RowlayoutBinding;
             Android
             <u>Development</u>
                                                         public abstract class MyBaseAdapter extends
              (http://www.vogella.com
                                                         RecyclerView.Adapter<MyBaseAdapter.MyViewHolder> {
             /training/android
              /androidprofessional.html)
                                                                          // Provide a reference to the views for each data item
          • voge11a
                                                                          // Complex data items may need more than one view per item,
             Training
                                                         and
                                                                          // you provide access to all the views for a data item in a
              (http://www.voge11a.com
                                                         view holder
             /training/)
                                                                         public class MyViewHolder extends RecyclerView.ViewHolder {
         • vogella Books
                                                                                          // each data item is just a string in this case
              (http://www.vogella.com
                                                                                          private final ViewDataBinding binding;
             /books/index.html)
                                                                                          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 layoutInflater =
                                                         LayoutInflater.from(parent.getContext());
                                                                                          ViewDataBinding binding =
                                                         DataBindingUtil.inflate(layoutInflater,
                                                         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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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 <u>Glide</u> (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'
```

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

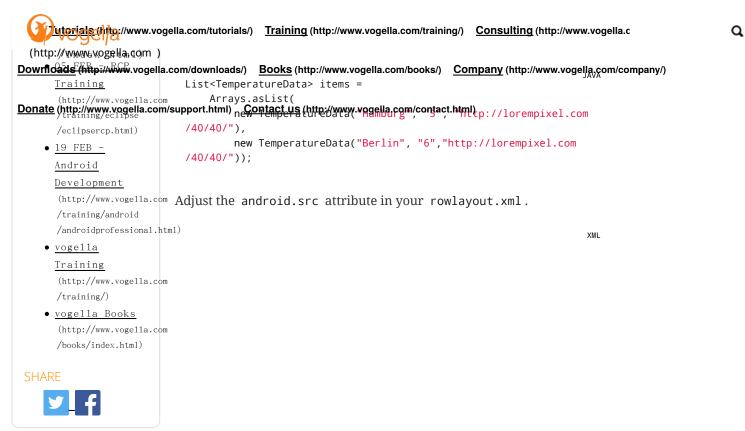
```
<uses-permission android:name="android.permission.INTERNET"></uses-
permission>
```

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

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```
<mark>utorials (իիլը։</mark>//www.vogella.com/tutorials/) <u>Training</u> (http://www.vogella.com/training/) <u>Consulting</u> (http://www.vogella.c
  (http://www.wogeHangom)
                                         Glide.with(view.getContext()).
                                             Books (http://www.vogella.com/books/) Company (http://www.vogella.com/company/)
Downfloads (http://www.vogella.com/downloads/)
       Training
                                             placeholder(R.drawable.ic_listentry).
Donate (http://www.vogella.com/support.html) into(yiew): Contact us (http://www.vogella.com/contact.html) training/eclipse
       /eclipsercp.html)
     • 19 FEB -
                              Now change your data model.
       Android
       <u>Development</u>
                                                                                                         GRADLE
       (http://www.voge11a.com
                               package com.vogella.android.databinding;
       /training/android
       / {\tt androidprofessional.htm1}) \ {\tt import android.databinding.BaseObservable;}
     • <u>vogella</u>
                                import android.databinding.Bindable;
       Training
                               public class TemperatureData extends BaseObservable {
       (http://www.vogella.com
       /training/)
                                    private String location;
     • vogella Books
       (http://www.vogella.com
                                    private String celsius;
       /books/index.html)
                                    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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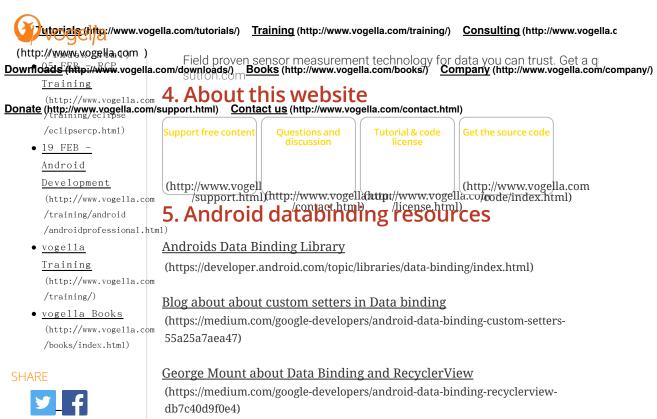


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```
<mark>utorials (իիլը։</mark>//www.vogella.com/tutorials/) <u>Training</u> (http://www.vogella.com/training/) <u>Consulting</u> (http://www.vogella.c
  (http://www.vogella.gom)
                                    <data>
Downfloads (http://www.vogella.com/downloads/)
                                             Books (http://www.vogella.com/books/) Company (http://www.vogella.com/company/)
       Training
                                         <variable
(http://www.vogella.com/support.html)

Donate (http://www.vogella.com/support.html)
                                          Contact us (http://www.vogella.com/contact.html)
type="com.vogella.android.databinding.TemperatureData"
       /eclipsercp.html)
     • 19 FEB -
                                    </data>
       Android
                                    <RelativeLayout
       <u>Development</u>
                                         android:layout_width="fill_parent"
       (http://www.voge11a.com
       /training/android
                               android:layout_height="?android:attr/listPreferredItemHeight"
       /androidprofessional.html)
                                         android:padding="6dip"
     • voge11a
       Training
       (http://www.vogella.com
                                         <ImageView
                                             android:id="@+id/icon"
       /training/)
                                             android:layout_width="wrap_content"
     • vogella Books
                                             android:layout_height="fill_parent"
       (http://www.vogella.com
                                             android:layout_alignParentBottom="true"
       /books/index.html)
                                             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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#### Dynamic view generation with Data Binding

(https://medium.com/google-developers/android-data-binding-list-tricks-ef3d5630555e)

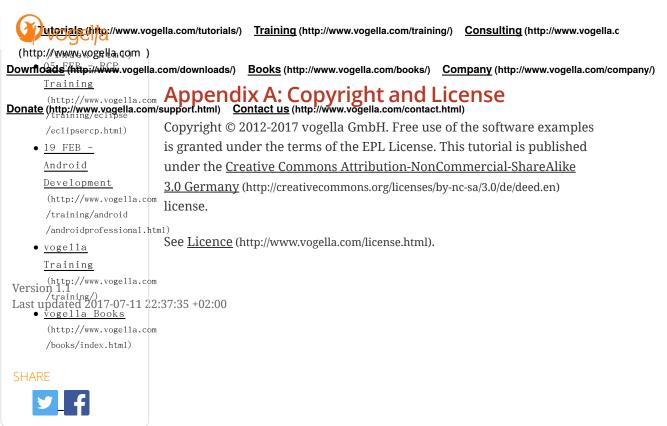
#### Video introduction into Data Binding

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

#### 5.1. vogella GmbH training and consulting support

TRAINING (http://www.vogella.com/training/)	SERVICE & SUPPORT (http://www.vogella.com /consulting/)
The vogella company provides comprehensive <u>training and education services</u> (http://www.vogella.com/training/) from experts in the areas of Eclipse RCP, Android, Git, Java, Gradle and Spring. We offer both public and inhouse training. Whichever course you decide to take, you are guaranteed to experience what many before you refer to as <u>"The best IT class I have ever attended"</u> (http://www.vogella.com/training/).	The vogella company offers  expert consulting  (http://www.vogella.com/consulting/) services, development support and coaching. Our customers range from Fortune 100 corporations to individual developers.

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