

# RESTful Services

Funshine

# Teil 3: Parsen von JSON-Objekten

# WeatherActivity.java

```
public void downloadWeatherData(Location location) {
    final String fullCoords = URL_COORD + location.getLatitude() + "&lon=" + location.getLongitude();
    final String url = URL_BASE + fullCoords + URL_UNITS + URL_API_KEY;

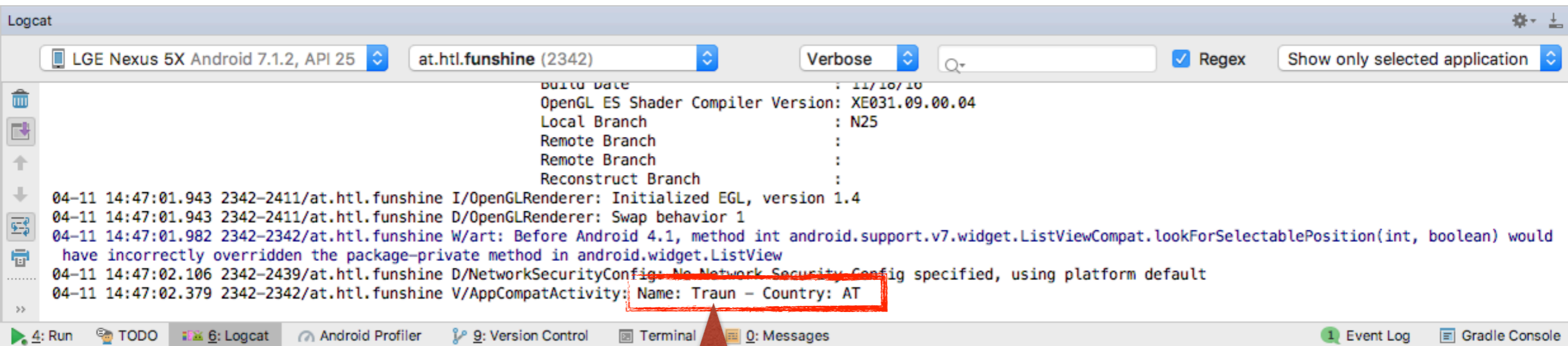
    final JsonObjectRequest jsonRequest = new JsonObjectRequest(
        Request.Method.GET,
        url,
        null, // hier könnte man JSON-Daten im body mitschicken
        new Response.Listener<JSONObject>() {
            @Override
            public void onResponse(JSONObject response) {
                try {
                    JSONObject city = response.getJSONObject("city");
                    String cityName = city.getString("name");
                    String country = city.getString("country");

                    Log.v(LOG_TAG, "Name: " + cityName + " - Country: " + country);

                } catch (JSONException e) {
                    Log.e(LOG_TAG, e.getLocalizedMessage());
                }
            }
        }, new Response.ErrorListener() {
            @Override
            public void onErrorResponse(VolleyError error) {
                Log.v(LOG_TAG, "Err: " + error.getLocalizedMessage());
            }
        });

    Volley.newRequestQueue(this).add(jsonRequest);
}
```

# Probelauf



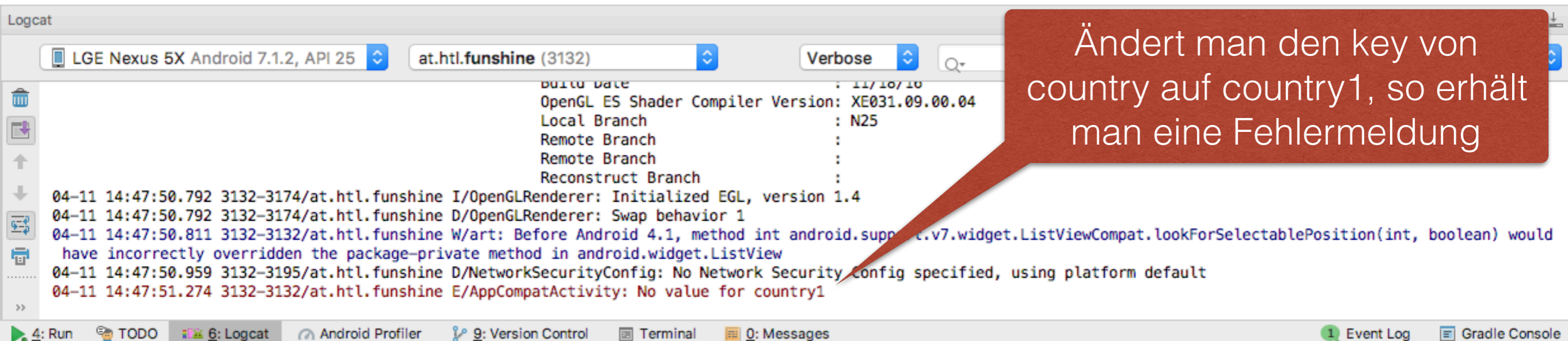
Logcat

LGE Nexus 5X Android 7.1.2, API 25 | at.htl.funshine (2342) | Verbose |  Regex | Show only selected application

```
built Date : 11/10/10
OpenGL ES Shader Compiler Version: XE031.09.00.04
Local Branch : N25
Remote Branch :
Remote Branch :
Reconstruct Branch :
04-11 14:47:01.943 2342-2411/at.htl.funshine I/OpenGLRenderer: Initialized EGL, version 1.4
04-11 14:47:01.943 2342-2411/at.htl.funshine D/OpenGLRenderer: Swap behavior 1
04-11 14:47:01.982 2342-2342/at.htl.funshine W/art: Before Android 4.1, method int android.support.v7.widget.ListViewCompat.lookForSelectablePosition(int, boolean) would have incorrectly overridden the package-private method in android.widget.ListView
04-11 14:47:02.106 2342-2439/at.htl.funshine D/NetworkSecurityConfig: No Network Security Config specified, using platform default
04-11 14:47:02.379 2342-2342/at.htl.funshine V/AppCompatActivity: Name: Traun - Country: AT
```

4: Run | TODO | 6: Logcat | Android Profiler | 9: Version Control | Terminal | 0: Messages | 1 Event Log | Gradle Console

Die Stadt wird (korrekt) angezeigt



Logcat

LGE Nexus 5X Android 7.1.2, API 25 | at.htl.funshine (3132) | Verbose |  Regex | Show only selected application

```
built Date : 11/10/10
OpenGL ES Shader Compiler Version: XE031.09.00.04
Local Branch : N25
Remote Branch :
Remote Branch :
Reconstruct Branch :
04-11 14:47:50.792 3132-3174/at.htl.funshine I/OpenGLRenderer: Initialized EGL, version 1.4
04-11 14:47:50.792 3132-3174/at.htl.funshine D/OpenGLRenderer: Swap behavior 1
04-11 14:47:50.811 3132-3132/at.htl.funshine W/art: Before Android 4.1, method int android.support.v7.widget.ListViewCompat.lookForSelectablePosition(int, boolean) would have incorrectly overridden the package-private method in android.widget.ListView
04-11 14:47:50.959 3132-3195/at.htl.funshine D/NetworkSecurityConfig: No Network Security Config specified, using platform default
04-11 14:47:51.274 3132-3132/at.htl.funshine E/AppCompatActivity: No value for country1
```

4: Run | TODO | 6: Logcat | Android Profiler | 9: Version Control | Terminal | 0: Messages | 1 Event Log | Gradle Console

Ändert man den key von country auf country1, so erhält man eine Fehlermeldung

# Welche Daten brauchen wir?

- Zunächst werden die Messpunkte (list) in einem Array gespeichert
- Wir erhalten 40 Elemente, brauchen aber nur 5

```
{
  "cod": "200",
  "message": 0.0462,
  "cnt": 40,
  "list": [
    {
      "dt": 1491858000,
      "main": {
        "temp": 285.14,
        "temp_min": 284.311,
        "temp_max": 285.14,
        "pressure": 967.58,
        "sea_level": 1030.32,
        "grnd_level": 967.58,
        "humidity": 82,
        "temp_kf": 0.83
      },
      "weather": [
        {
          "id": 500,
          "main": "Rain",
          "description": "light rain",
          "icon": "10n"
        }
      ]
    },
    {
      "dt": 1491858000,
      "main": {
        "temp": 285.14,
        "temp_min": 284.311,
        "temp_max": 285.14,
        "pressure": 967.58,
        "sea_level": 1030.32,
        "grnd_level": 967.58,
        "humidity": 82,
        "temp_kf": 0.83
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        "grnd_level": 967.58,
        "humidity": 82,
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      ]
    },
    {
      "dt": 1491858000,
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        "temp_max": 285.14,
        "pressure": 967.58,
        "sea_level": 1030.32,
        "grnd_level": 967.58,
        "humidity": 82,
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          "main": "Rain",
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        "temp_max": 285.14,
        "pressure": 967.58,
        "sea_level": 1030.32,
        "grnd_level": 967.58,
        "humidity": 82,
        "temp_kf": 0.83
      },
      "weather": [
        {
          "id": 500,
          "main": "Rain",
          "description": "light rain",
          "icon": "10n"
        }
      ]
    }
  ],
  "clouds": {
    "all": 0
  },
  "wind": {
    "speed": 0,
    "deg": 0
  },
  "rain": {
    "1h": 0,
    "3h": 0,
    "6h": 0
  },
  "sys": {
    "pod": "d"
  },
  "dt_txt": "2017-04-10 21:00:00"
}
```

# downloadWeatherData(...)

die Daten werden  
geparst

```
final JsonObjectRequest jsonRequest = new JsonObjectRequest(
    Request.Method.GET,
    url,
    null, // hier könnte man JSON-Daten im body mitschicken
    new Response.Listener<JsonObject>() {
        @Override
        public void onResponse(JsonObject response) {
            try {
                JsonObject city = response.getJSONObject("city");
                String cityName = city.getString("name");
                String country = city.getString("country");

                JSONArray list = response.getJSONArray("list");

                for (int i = 0; i < 5; i++) {
                    JsonObject obj = list.getJSONObject(i);
                    JsonObject main = obj.getJSONObject("main");
                    Double currentTemp = main.getDouble("temp");
                    Double maxTemp = main.getDouble("temp_max");
                    Double minTemp = main.getDouble("temp_min");

                    JSONArray weatherArr = obj.getJSONArray("weather");
                    JsonObject weather = weatherArr.getJSONObject(0);
                    String weatherType = weather.getString("main");

                    String rawDate = obj.getString("dt_txt");
                }

                Log.v(LOG_TAG, "Name: " + cityName + " - Country: " + country);
            } catch (JSONException e) {
                Log.e(LOG_TAG, e.getLocalizedMessage());
            }
        }
    }, new Response.ErrorListener() {
        @Override
        public void onErrorResponse(VolleyError error) {
            Log.v(LOG_TAG, "Err: " + error.getLocalizedMessage());
        }
    });
```

```
{
  "cod": "200",
  "message": 0.0462,
  "cnt": 40,
  "list": [
    {
      "dt": 1491858000,
      "main": {
        "temp": 285.14,
        "temp_min": 284.311,
        "temp_max": 285.14,
        "pressure": 967.58,
        "sea_level": 1030.32,
        "grnd_level": 967.58,
        "humidity": 82,
        "temp_kf": 0.83
      },
      "weather": [
        {
          "id": 500,
          "main": "Rain",
          "description": "light rain",
          "icon": "10n"
        }
      ],
      "clouds": { },
      "wind": { },
      "rain": { },
      "sys": { },
      "dt_txt": "2017-04-10 21:00:00"
    }
  ]
}
```

Create New Class

Name:

Kind:

Superclass:

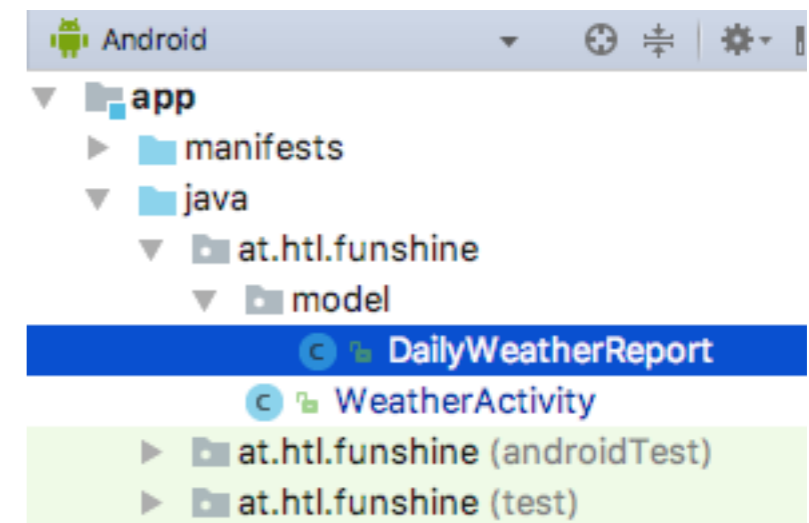
Interface(s):

Package:

Visibility:  Public  Package Private

Modifiers:  None  Abstract  Final

Show Select Overrides Dialog



# DailyWeatherReport.java

```
package at.htl.funshine.model;

public class DailyWeatherReport {

    private String cityName;
    private String country;
    private int currentTemp;
    private int maxTemp;
    private int minTemp;
    private String weather;
    private String formattedDate;

    public DailyWeatherReport(String cityName, String country, int currentTemp, int maxTemp,
                               int minTemp, String weather, String rawDate) {
        this.cityName = cityName;
        this.country = country;
        this.currentTemp = currentTemp;
        this.maxTemp = maxTemp;
        this.minTemp = minTemp;
        this.weather = weather;
        this.formattedDate = rawDateToPretty(rawDate);
    }

    public String rawDateToPretty(String rawDate) {
        return "May 1";
    }

    //region Getter
    ...
    //endregion
}
```



```
private GoogleApiClient mGoogleApiClient;  
private final int PERMISSION_LOCATION = 111;  
private List<DailyWeatherReport> weatherReportList = new ArrayList<>();
```

```
final JsonObjectRequest jsonRequest = new JsonObjectRequest(  
    Request.Method.GET,  
    url, null, new Response.Listener<JSONObject>() {  
        @Override  
        public void onResponse(JSONObject response) {  
            try {  
                JSONObject city = response.getJSONObject("city");  
                String cityName = city.getString("name");  
                String country = city.getString("country");  
  
                JSONArray list = response.getJSONArray("list");  
  
                for (int i = 0; i < 5; i++) {  
                    JSONObject obj = list.getJSONObject(i);  
                    JSONObject main = obj.getJSONObject("main");  
                    Double currentTemp = main.getDouble("temp");  
                    Double maxTemp = main.getDouble("temp_max");  
                    Double minTemp = main.getDouble("temp_min");  
  
                    JSONArray weatherArr = obj.getJSONArray("weather");  
                    JSONObject weather = weatherArr.getJSONObject(0);  
                    String weatherType = weather.getString("main");  
  
                    String rawDate = obj.getString("dt_txt");  
  
                    DailyWeatherReport report = new DailyWeatherReport(  
                        cityName, country, currentTemp.intValue(), maxTemp.intValue(),  
                        minTemp.intValue(), weatherType, rawDate);  
                    Log.v(LOG_TAG, "Printing vom class: " + report.getWeather());  
                    weatherReportList.add(report);  
                }  
  
                Log.v(LOG_TAG, "Name: " + cityName + " - Country: " + country);  
            } catch (JSONException e) {  
                Log.e(LOG_TAG, e.getLocalizedMessage());  
            }  
        }, new Response.ErrorListener() {  
            @Override  
            public void onErrorResponse(VolleyError error) {  
                Log.v(LOG_TAG, "Err: " + error.getLocalizedMessage());  
            }  
        });  
});
```

# Probelauf

```
Logcat
LGE Nexus 5X Android 7.1.2, API 25
at.htl.funshine (7887)
Verbose
Regex
Show only selected application

reconstruct branch
04-11 15:20:47.279 7887-7905/at.htl.funshine I/OpenGLRenderer: Initialized EGL, version 1.4
04-11 15:20:47.279 7887-7905/at.htl.funshine D/OpenGLRenderer: Swap behavior 1
04-11 15:20:47.306 7887-7887/at.htl.funshine W/art: Before Android 4.1, method int android.support.v7.widget.ListViewCompat.lookForSelectablePosition(int, boolean) would
have incorrectly overridden the package-private method in android.widget.ListView
04-11 15:20:47.374 7887-7911/at.htl.funshine D/NetworkSecurityConfig: No Network Security Config specified, using platform default
04-11 15:20:47.572 7887-7887/at.htl.funshine V/AppCompatActivity: Printing vom class: Clouds
04-11 15:20:47.572 7887-7887/at.htl.funshine V/AppCompatActivity: Printing vom class: Clear
04-11 15:20:47.572 7887-7887/at.htl.funshine V/AppCompatActivity: Printing vom class: Clear
04-11 15:20:47.572 7887-7887/at.htl.funshine V/AppCompatActivity: Printing vom class: Clouds
04-11 15:20:47.573 7887-7887/at.htl.funshine V/AppCompatActivity: Printing vom class: Clouds
04-11 15:20:47.573 7887-7887/at.htl.funshine V/AppCompatActivity: Name: Traun - Country: AT
```

4: Run   6: TODO   6: Logcat   Android Profiler   9: Version Control   Terminal   0: Messages   1: Event Log   Gradle Console



Noch  
Fragen?