

# **CanteenManager**

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im Wintersemester 2018/19

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PROJEKTARBEIT

SE bb

MOC5x

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# Kapitel 1

## Lösungsidee

Grundsätzlich war die Idee, die aus dem Übungskurs bekannten Konzepte und Technologien noch einmal in einem eigenen Projekt selbst zu verwenden, das Wissen zu fundieren und erweitern.

Da ich mich nicht damit zufrieden geben wollte, nur die bekannten Dinge zu wiederholen, bediente ich mich weiterer Elemente, wie dem DrawerLayout mit seitlicher Navigation und einer Hauptaktivität, die je nach Auswahl des Navigationselements die eine oder die andere View als Fragment an die gewünschte Position lädt.

Am Kernkonzept konnte man in diesem Projekt nicht viel verändern: die gesamten Daten kommen über eine REST-Schnittstelle in die Applikation. In dieser muss man sich – da es sich um eine reine Verwaltungs-App handelt – zunächst anmelden. Danach gelangt der Benutzer direkt zur Stammdateneingabe. Bekannte Formularelemente werden zur Manipulation der Daten genutzt. Am Ende der Eingabemaske kann man die noch nicht gespeicherten Daten auf den ursprünglich geladenen Stand zurücksetzen.

Die Adresse des Imbiss kann man entweder über das Texteingabefeld oder über das Google Map Fragment eingeben, per Klick auf die richtige Stelle auf der Karte. Die beiden Eingabemöglichkeiten synchronisieren sich stets gegenseitig noch vor Speichern.

Über das Burger-Menü-Symbol oder Klick ganz links auf den Bildschirmrand kann die seitliche Navigation geöffnet werden. Dadurch kann man in die Ansicht der Rezensionenstatistiken bzw. der Verwaltung der Bewertungsbeiträge gelangen. Dort kann man unliebsame Bewertungen (von Neidern etc.) einfach löschen. Es wird gegengefragt, ob man das wirklich tun will. Bei Bestätigung wird die Bewertung gelöscht und das Interface über FirebaseMessaging neu geladen.

## Kapitel 2

# Architektur

Die Architektur gleicht der von „CanteenChecker,,“, wobei der Unterschied der ist, dass in der Hauptaktivität „MainActivity,,“ das Hauptlayout mit einem Drawer- und einem AppBar-Layout realisiert sind, wobei im „Hauptbereich,,“ die Fragmente der Stammdatenverwaltung bzw. der Bewertungsverwaltung ausgetauscht und neu erstellt wird.

Am Start öffnet ein „Splash screen,,“, der das Logo des „CanteenManager,,“ anzeigt, danach wird die „LoginActivity,,“ angezeigt. Dieser ruft nach Eingabe und Bestätigung des Buttons die Gültigkeit der eingegeben Daten ab, und leitet den Benutzer bei validen Eingaben zur „MainActivity,,“ durch.

Im Fragment „CanteenFragment,,“ sitzt noch das Fragment für die Google Maps API. Dies wird bei Eingabe einer neuen Adresse bzw. bei Klick auf eine Stelle der Karte versuchen, einen neuen gültigen Standort samt Adresse zu finden. Die Oberfläche hält den geladenen Stand der zum Benutzerkonto gehörenden Kantine, und dieser kann am Ende der Eingabemaske wiederhergestellt werden. Beim Speichern werden die Daten an den REST-Service geleitet und danach sofort wieder nachgeladen.

Im „RatingsFragment,,“ findet sich einerseits ein „ReviewFragment,,“, welches die Statistiken über alle Kantinebewertungen enthält, und eine Liste von Bewertungen in einer RecyclerView, in der die einzelnen Bewertungen eingesehen und gelöscht werden können.

Die App arbeitet zudem noch mit einer ServiceProxy-Klasse, wobei die *retrofit* API genutzt wird. Das angepasste und erweiterte FirebaseMessagingService sorgt für die Verständigung der Fragmente um Aktualisierungen an den Daten der Kantinendaten bzw.-bewertungen. Zu guter Letzt gibt es in der ServiceProxy-Klasse noch Proxyklassen für die per JSON serialisierten im Body der HTTP-Abfragen und -Antworten befindlichen Daten, und um diese in die Domänenklassen umwandeln zu können. Die Domänenklasse „Ratings,,“ implementiert das Interface „Comparable,,“, damit die Ratings im „RatingsFragment,,“ nach Datum absteigend sortiert präsentiert werden.

# Kapitel 3

## Quelltext

### 3.1 Domänenklassen

#### 3.1.1 Canteen

```
1 package com.example.canteenchecker.canteenmanager.core;
2
3 import java.util.Collection;
4
5 public class Canteen {
6
7     private final String id;
8     private String name;
9
10    private String address;
11    private String phoneNumber;
12    private String website;
13
14    private String meal;
15    private float mealPrice;
16
17    private float averageRating;
18    private int averageWaitingTime;
19
20    Collection<Rating> ratings;
21
22    public Canteen(String id, String name, String address, String phoneNumber,
23        String website,
24        String meal, float mealPrice, float averageRating,
25        int averageWaitingTime, Collection<Rating> ratings) {
26
27        this.id = id;
28        this.name = name;
29
30        this.address = address;
31        this.phoneNumber = phoneNumber;
32        this.website = website;
33
34        this.meal = meal;
35        this.mealPrice = mealPrice;
```

```
35
36     this.averageRating = averageRating;
37     this.averageWaitingTime = averageWaitingTime;
38
39     this.ratings = ratings;
40 }
41
42 /**
43  * Getter
44  */
45 public String getId() {
46     return id;
47 }
48
49 public String getName() {
50     return name;
51 }
52
53 public String getAddress() {
54     return address;
55 }
56
57 public String getPhoneNumber() {
58     return phoneNumber;
59 }
60
61 public String getWebsite() {
62     return website;
63 }
64
65 public String getMeal() {
66     return meal;
67 }
68
69 public float getMealPrice() {
70     return mealPrice;
71 }
72
73 public float getAverageRating() {
74     return averageRating;
75 }
76
77 public int getAverageWaitingTime() {
78     return averageWaitingTime;
79 }
80
81 public Collection<Rating> getRatings() {
82     return ratings;
83 }
84
85 /**
86  * Setter with logic
87  */
88 public void setName(String name) {
89     if (!name.isEmpty()) {
90         this.name = name;
91     }
```

```
92     }
93
94     public void setAddress(String address) {
95         if (!address.isEmpty()) {
96             this.address = address;
97         }
98     }
99
100    public void setPhoneNumber(String phoneNumber) {
101        if (!phoneNumber.isEmpty()) {
102            this.phoneNumber = phoneNumber;
103        }
104    }
105
106    public void setWebsite(String website) {
107        if (!website.isEmpty()) {
108            this.website = website;
109        }
110    }
111
112    public void setMeal(String meal) {
113        if (!meal.isEmpty()) {
114            this.meal = meal;
115        }
116    }
117
118    public void setMealPrice(float mealPrice) {
119        if (mealPrice > 0) {
120            this.mealPrice = mealPrice;
121        }
122    }
123
124    public void setAverageRating(float averageRating) {
125        if (averageRating > 0) {
126            this.averageRating = averageRating;
127        }
128    }
129
130    public void setAverageWaitingTimeWaitingTime(int waitingTime) {
131        if (waitingTime > 0) {
132            this.averageWaitingTime = waitingTime;
133        }
134    }
135
136 }
```

### 3.1.2 IClickedListener

```
1 package com.example.canteenchecker.canteenmanager.core;
2
3 public interface IClickedListener {
4     void onClicked(String id);
5 }
```

### 3.1.3 Rating

```
1 package com.example.canteenchecker.canteenmanager.core;
```

```
2
3 import java.text.SimpleDateFormat;
4
5 public class Rating implements Comparable<Rating> {
6
7     private final String id;
8     private final String userName;
9     private final String remark;
10    private final int ratingPoints;
11    private final long timeStamp;
12    private final String date;
13
14    public Rating(String id, String userName, String remark, int ratingPoints, long
        timeStamp) {
15        this.id = id;
16        this.userName = userName;
17        this.remark = remark;
18        this.ratingPoints = ratingPoints;
19
20        this.timeStamp = timeStamp;
21        this.date = (new SimpleDateFormat("dd.MM.yyyy HH:mm"))
22            .format(new java.util.Date(timeStamp));
23    }
24
25    public String getId() {
26        return id;
27    }
28
29    public String getUserName() {
30        return userName;
31    }
32
33    public String getRemark() {
34        return remark;
35    }
36
37    public int getRatingPoints() {
38        return ratingPoints;
39    }
40
41    public long getTimeStamp() {
42        return timeStamp;
43    }
44
45    public String getDate() {
46        return date;
47    }
48
49    @Override
50    public int compareTo(Rating other) {
51        if (other != null) {
52            if (other.timeStamp < this.timeStamp) {
53                return 1;
54            } else if (other.timeStamp > this.timeStamp) {
55                return -1;
56            }
57        }
58    }
59 }
```



```
58         return 0;
59     }
60
61     @Override
62     public String toString() {
63         StringBuilder sb = new StringBuilder();
64
65         sb.append(getId());
66         sb.append(" ");
67         sb.append("(");
68         sb.append(getUserName());
69         sb.append(")");
70         sb.append(": ");
71         sb.append(getRemark());
72
73         return sb.toString();
74     }
75 }
```

### 3.1.4 ReviewData

```
1 package com.example.canteenchecker.canteenmanager.core;
2
3 import java.util.ArrayList;
4 import java.util.Collection;
5
6 public class ReviewData {
7
8     private final float averageRating;
9     private final int totalRatings;
10    private final int ratingsOne;
11    private final int ratingsTwo;
12    private final int ratingsThree;
13    private final int ratingsFour;
14    private final int ratingsFive;
15    private final int totalRatingsOfMostCommonGrade;
16
17    public ReviewData(float averageRating, int totalRatings,
18                      int ratingsOne, int ratingsTwo, int ratingsThree,
19                      int ratingsFour, int ratingsFive) {
20        this.averageRating = averageRating;
21        this.totalRatings = totalRatings;
22        this.ratingsOne = ratingsOne;
23        this.ratingsTwo = ratingsTwo;
24        this.ratingsThree = ratingsThree;
25        this.ratingsFour = ratingsFour;
26        this.ratingsFive = ratingsFive;
27        totalRatingsOfMostCommonGrade =
28            Math.max(Math.max(Math.max(Math.max(ratingsOne, ratingsTwo),
29            ratingsThree), ratingsFour), ratingsFive);
30    }
31
32    public float getAverageRating() {
33        return averageRating;
34    }
35
36    public int getTotalRatings() {
```

```
37         return totalRatings;
38     }
39
40     public int getRatingsOne() {
41         return ratingsOne;
42     }
43
44     public int getRatingsTwo() {
45         return ratingsTwo;
46     }
47
48     public int getRatingsThree() {
49         return ratingsThree;
50     }
51
52     public int getRatingsFour() {
53         return ratingsFour;
54     }
55
56     public int getRatingsFive() {
57         return ratingsFive;
58     }
59
60     public int getTotalRatingsOfMostCommonGrade() {
61         return totalRatingsOfMostCommonGrade;
62     }
63
64 }
```

## 3.2 ServiceProxy

```
1 package com.example.canteenchecker.canteenmanager.proxy;
2
3 import android.util.Log;
4
5 import com.example.canteenchecker.canteenmanager.CanteenManagerApplication;
6 import com.example.canteenchecker.canteenmanager.R;
7 import com.example.canteenchecker.canteenmanager.core.Canteen;
8 import com.example.canteenchecker.canteenmanager.core.Rating;
9 import com.example.canteenchecker.canteenmanager.core.ReviewData;
10
11 import java.io.IOException;
12 import java.util.ArrayList;
13 import java.util.Collection;
14
15 import okhttp3.ResponseBody;
16 import retrofit2.Call;
17 import retrofit2.Retrofit;
18 import retrofit2.converter.gson.GsonConverterFactory;
19 import retrofit2.http.Body;
20 import retrofit2.http.DELETE;
21 import retrofit2.http.GET;
22 import retrofit2.http.Header;
23 import retrofit2.http.POST;
24 import retrofit2.http.PUT;
25 import retrofit2.http.Path;
```

```
26
27 public class ServiceProxy {
28
29     // ADMIN --> https://canteencheckeradmin.azurewebsites.net/
30     // Test user: S1610307038/S1610307038
31     // SWAGGER --> https://canteenchecker.azurewebsites.net/swagger/ui/index
32     private static final String SERVICE_BASE_URL = "https://canteenchecker.
    azurewebsites.net/";
33     private static final String TAG = ServiceProxy.class.toString();
34
35     private final Proxy proxy = new Retrofit.Builder()
36         .baseUrl(SERVICE_BASE_URL)
37         .addConverterFactory(GsonConverterFactory.create())
38         .build()
39         .create(Proxy.class);
40
41     public Canteen getCanteen() throws IOException {
42         if (CanteenManagerApplication.getInstance().isAuthenticated()) {
43             String authToken = CanteenManagerApplication.getInstance().
    getAuthenticationToken();
44             ProxyCanteen canteen =
45                 proxy.getCanteen(String.format("Bearer %s", authToken)).execute
    ().body();
46             return canteen != null ? canteen.toCanteen() : null;
47         }
48         return null;
49     }
50
51     public Collection<Rating> getRatings() throws IOException {
52         Canteen canteen = this.getCanteen();
53         if (canteen == null) return null;
54
55         ArrayList<Rating> result = new ArrayList<>();
56         result.addAll(canteen.getRatings());
57         return result.isEmpty() ? null : result;
58     }
59
60     public ReviewData getReviewsDataForCanteen(String canteenId) throws IOException
    {
61         ProxyReviewData reviewData = proxy.getReviewDataForCanteen(canteenId).
    execute().body();
62         return reviewData != null ? reviewData.toReviewData() : null;
63     }
64
65     public String authenticate(String userName, String password) throws IOException
    {
66         return proxy.postLogin(new ProxyLogin(userName, password)).execute().body();
67     }
68
69     public boolean deleteRating(String authToken, String ratingId) throws
    IOException {
70         return proxy.deleteRating(String.format("Bearer %s", authToken), Integer.
    parseInt(ratingId))
71             .execute().isSuccessful();
72     }
73
74     public void updateCanteen(String authToken, Canteen canteen) {
```

```

75     try {
76         proxy.putCanteen(String.format("Bearer %s", authToken),
77             new ProxyNewCanteen(canteen.getId(), canteen.getName(),
78                 canteen.getAddress(), canteen.getPhoneNumber(), canteen.
getWebsite(),
79                 canteen.getMeal(), canteen.getMealPrice(), canteen.
getAverageRating(),
80                 canteen.getAverageWaitingTime()))).execute();
81     } catch (IOException ex) {
82         Log.e(TAG, String.valueOf(R.string.msg_LoadingCanteenFailed), ex);
83     }
84 }
85
86 private interface Proxy {
87
88     @POST("/Admin/Login")
89     Call<String> postLogin(@Body ProxyLogin login);
90
91     @GET("/Public/Canteen/{id}/Rating?nrOfRatings=0")
92     Call<ProxyReviewData> getReviewDataForCanteen(@Path("id") String canteenId);
93
94     /**
95      * New REST-Methods for CanteenManager:
96      */
97     @GET("/Admin/Canteen")
98     Call<ProxyCanteen> getCanteen(@Header("Authorization") String
authenticationToken);
99
100     @PUT("/Admin/Canteen")
101     Call<Void> putCanteen(@Header("Authorization") String authenticationToken,
@Body ProxyNewCanteen updateModel);
102
103     @DELETE("/Admin/Canteen/Rating/{id}")
104     Call<ResponseBody> deleteRating(@Header("Authorization") String
authenticationToken, @Path("id") int ratingId);
105
106 }
107
108 private static class ProxyCanteen {
109
110     int canteenId;
111     String name;
112
113     String address;
114     String phone;
115     String website;
116
117     String meal;
118     float mealPrice;
119
120     float averageRating;
121     int averageWaitingTime;
122
123     ProxyRating[] ratings;
124
125     ProxyCanteen(String canteenId, String name, String address, String phone,
String website, String meal, float mealPrice, float

```

```
        averageRating,
127         int averageWaitingTime, ProxyRating[] ratings) {
128
129         this.canteenId = Integer.parseInt(canteenId);
130         this.name = name;
131         this.address = address;
132         this.phone = phone;
133         this.website = website;
134         this.meal = meal;
135         this.mealPrice = mealPrice;
136         this.averageRating = averageRating;
137         this.averageWaitingTime = averageWaitingTime;
138         this.ratings = ratings;
139     }
140
141     Canteen toCanteen() {
142         Collection<Rating> ratingList = new ArrayList<>();
143         if (ratings != null) {
144             for (ProxyRating rating : ratings) {
145                 ratingList.add(rating.toRating());
146             }
147         }
148         return new Canteen(String.valueOf(canteenId), name, address, phone,
website,
149             meal, mealPrice, averageRating, averageWaitingTime, ratingList);
150     }
151 }
152
153 private static class ProxyNewCanteen {
154
155     final int canteenId;
156     final String name;
157
158     final String address;
159     final String phone;
160     final String website;
161
162     final String meal;
163     final float mealPrice;
164
165     final float averageRating;
166     final int averageWaitingTime;
167
168     ProxyNewCanteen(String canteenId, String name, String address, String phone,
169         String website, String meal, float mealPrice, float
170         averageRating,
171         int averageWaitingTime) {
172
173         this.canteenId = Integer.parseInt(canteenId);
174         this.name = name;
175         this.address = address;
176         this.phone = phone;
177         this.website = website;
178         this.meal = meal;
179         this.mealPrice = mealPrice;
180         this.averageRating = averageRating;
```

```
181         this.averageWaitingTime = averageWaitingTime;
182     }
183 }
184
185
186     private static class ProxyRating {
187
188         int ratingId;
189         String username;
190         String remark;
191         int ratingPoints;
192         long timestamp;
193
194         Rating toRating() {
195             return new Rating(String.valueOf(ratingId), username, remark,
196                 ratingPoints, timestamp);
197         }
198     }
199
200     private static class ProxyReviewData {
201
202         float average;
203         int totalCount;
204         int[] countsPerGrade;
205
206         private int getRatingsForGrade(int grade) {
207             grade--;
208             return countsPerGrade != null && grade >= 0
209                 && grade < countsPerGrade.length ? countsPerGrade[grade] : 0;
210         }
211
212         ReviewData toReviewData() {
213             return new ReviewData(average, totalCount, getRatingsForGrade(1),
214                 getRatingsForGrade(2), getRatingsForGrade(3), getRatingsForGrade
215                 (4),
216                 getRatingsForGrade(5));
217         }
218     }
219
220     private static class ProxyLogin {
221
222         final String username;
223         final String password;
224
225         ProxyLogin(String userName, String password) {
226             this.username = userName;
227             this.password = password;
228         }
229
230     }
231 }
```

### 3.3 FirebaseMessagingService

```
1 package com.example.canteenchecker.canteenmanager.service;
2
3 import android.content.Intent;
4 import android.content.IntentFilter;
5 import android.support.v4.content.LocalBroadcastManager;
6
7 import com.google.firebase.messaging.FirebaseMessagingService;
8 import com.google.firebase.messaging.RemoteMessage;
9
10 import java.util.Map;
11
12 public class MyFirebaseMessagingService extends FirebaseMessagingService {
13
14     public static IntentFilter createCanteenChangedIntentFilter() {
15         return new IntentFilter(CANTEEN_CHANGED_INTENT_ACTION);
16     }
17
18     public static String extractCanteenId(Intent intent) {
19         return intent.getStringExtra(CANTEEN_CHANGED_INTENT_CANTEEN_ID);
20     }
21
22     private static final String CANTEEN_CHANGED_INTENT_ACTION = "CanteenChanged";
23     private static final String CANTEEN_CHANGED_INTENT_CANTEEN_ID = "CanteenId";
24
25     private static final String REMOTE_MESSAGE_TYPE_KEY = "type";
26     private static final String REMOTE_MESSAGE_TYPE_VALUE = "canteenDataChanged";
27     private static final String REMOTE_MESSAGE_CANTEEN_ID_KEY = "canteenId";
28
29     @Override
30     public void onMessageReceived(RemoteMessage remoteMessage) {
31         Map<String, String> data = remoteMessage.getData();
32         if (REMOTE_MESSAGE_TYPE_VALUE.equals(data.get(REMOTE_MESSAGE_TYPE_KEY))) {
33             // --> this is a "canteenDataChanged" message
34             String canteenId = data.get(REMOTE_MESSAGE_CANTEEN_ID_KEY);
35
36             //TODO send local broadcast
37             Intent intent = new Intent(CANTEEN_CHANGED_INTENT_ACTION);
38             if (canteenId != null) {
39                 intent.putExtra(CANTEEN_CHANGED_INTENT_CANTEEN_ID, canteenId);
40             }
41             LocalBroadcastManager.getInstance(this).sendBroadcast(intent);
42         }
43     }
44 }
```

## 3.4 UI Klassen

### 3.4.1 SplashActivity

```
1 package com.example.canteenchecker.canteenmanager.ui;
2
3 import android.content.Intent;
4 import android.os.Bundle;
5 import android.os.Handler;
6 import android.support.annotation.Nullable;
7 import android.support.v7.app.AppCompatActivity;
```

```
8
9 public class SplashActivity extends AppCompatActivity {
10
11     @Override
12     protected void onCreate(@Nullable Bundle savedInstanceState) {
13         super.onCreate(savedInstanceState);
14
15         new Handler().postDelayed(new Runnable() {
16             @Override
17             public void run() {
18                 // fake procedure to show splash for 2 secs
19                 Intent intent = LoginActivity.createIntent(SplashActivity.this);
20                 startActivity(intent);
21                 finish();
22             }
23         }, 2000);
24     }
25 }
```

### 3.4.2 LoginActivity

```
1 package com.example.canteenchecker.canteenmanager.ui;
2
3 import android.app.Activity;
4 import android.content.Context;
5 import android.content.Intent;
6 import android.os.AsyncTask;
7 import android.os.Bundle;
8 import android.support.annotation.Nullable;
9 import android.support.v7.app.AppCompatActivity;
10 import android.util.Log;
11 import android.view.View;
12 import android.widget.Button;
13 import android.widget.EditText;
14 import android.widget.Toast;
15
16 import com.example.canteenchecker.canteenmanager.CanteenManagerApplication;
17 import com.example.canteenchecker.canteenmanager.R;
18 import com.example.canteenchecker.canteenmanager.proxy.ServiceProxy;
19
20 import java.io.IOException;
21
22 public class LoginActivity extends AppCompatActivity {
23
24     private static final String TAG = LoginActivity.class.toString();
25
26     public static Intent createIntent(Context context) {
27         return new Intent(context, LoginActivity.class);
28     }
29
30     private EditText edtUserName;
31     private EditText edtPassWord;
32     private Button btnLogIn;
33
34     @Override
35     protected void onCreate(@Nullable Bundle savedInstanceState) {
36
```



```
37     super.onCreate(savedInstanceState);
38     setContentView(R.layout.activity_login);
39
40     edtUserName = findViewById(R.id.edtUserName);
41     edtPassWord = findViewById(R.id.edtPassWord);
42     btnLogIn = findViewById(R.id.btnLogIn);
43
44     btnLogIn.setOnClickListener(new View.OnClickListener() {
45         @Override
46         public void onClick(View v) {
47             login();
48         }
49     });
50 }
51
52 private void login() {
53     setUIEnabled(false);
54     new AsyncTask<String, Void, String>() {
55         @Override
56         protected String doInBackground(String... strings) {
57             try {
58                 return new ServiceProxy().authenticate(strings[0], strings[1]);
59             } catch (IOException e) {
60                 Log.e(TAG, getString(R.string.msg_LoginFailed), e);
61                 return null;
62             }
63         }
64
65         @Override
66         protected void onPostExecute(String s) {
67             if (s != null) {
68                 //authentication finished with success ...
69                 CanteenManagerApplication.getInstance().setAuthenticationToken(s
70             );
71
72                 //startActivity(CanteenActivity.createIntent(LoginActivity.this));
73                 startActivity(MainActivity.createIntent(LoginActivity.this));
74                 setResult(Activity.RESULT_OK);
75                 finish();
76             } else {
77                 // or not ...
78                 edtPassWord.setText(null);
79                 Toast.makeText(LoginActivity.this, R.string.msg_LoginFailed,
80                     Toast.LENGTH_LONG).show();
81                 setUIEnabled(true);
82             }
83         }
84     }.execute(edtUserName.getText().toString(), edtPassWord.getText().toString()
85 );
86 }
87
88 private void setUIEnabled(boolean enabled) {
89     edtUserName.setEnabled(enabled);
90     edtPassWord.setEnabled(enabled);
91     btnLogIn.setEnabled(enabled);
92 }
```

### 3.4.3 MainActivity

```
1 package com.example.canteenchecker.canteenmanager.ui;
2
3 import android.content.Context;
4 import android.content.Intent;
5 import android.os.Bundle;
6 import android.support.annotation.Nullable;
7 import android.support.design.widget.NavigationView;
8 import android.support.v4.view.GravityCompat;
9 import android.support.v4.widget.DrawerLayout;
10 import android.support.v7.app.ActionBar;
11 import android.support.v7.app.AppCompatActivity;
12 import android.support.v7.widget.Toolbar;
13 import android.view.Menu;
14 import android.view.MenuItem;
15
16 import com.example.canteenchecker.canteenmanager.CanteenManagerApplication;
17 import com.example.canteenchecker.canteenmanager.R;
18
19 public class MainActivity extends AppCompatActivity {
20
21     private DrawerLayout mDrawerLayout;
22     private final String TAG = MainActivity.class.toString();
23
24     public static Intent createIntent(Context context) {
25         Intent intent = new Intent(context, MainActivity.class);
26         return intent;
27     }
28
29     @Override
30     protected void onCreate(@Nullable Bundle savedInstanceState) {
31         super.onCreate(savedInstanceState);
32         setContentView(R.layout.activity_main);
33
34         mDrawerLayout = findViewById(R.id.drawer_layout);
35
36         Toolbar toolbar = findViewById(R.id.toolbar);
37         setSupportActionBar(toolbar);
38
39         ActionBar actionBar = getSupportActionBar();
40         if (actionBar != null) {
41             actionBar.setDisplayHomeAsUpEnabled(true);
42             actionBar.setHomeAsUpIndicator(R.drawable.ic_menu);
43         }
44
45         NavigationView navigationView = findViewById(R.id.nav_view);
46         navigationView.setNavigationItemSelectedListener(
47             new NavigationView.OnNavigationItemSelectedListener() {
48                 @Override
49                 public boolean onNavigationItemSelected(MenuItem menuItem) {
50                     menuItem.setChecked(true);
51                     mDrawerLayout.closeDrawers();
52
53                     int id = menuItem.getItemId();
54
```

```

55         switch (id) {
56             case R.id.nav_editCanteen:
57                 MainActivity.this.getSupportFragmentManager().
beginTransaction()
58                     .replace(R.id.content_frame,
59                             CanteenFragment.create())
60                     .addToBackStack(null)
61                     .commit();
62                 return true;
63
64             case R.id.nav_manageRatings:
65                 String canteenId = CanteenManagerApplication.
getInstance()
66                     .getCanteenId();
67
68                 MainActivity.this.getSupportFragmentManager().
beginTransaction()
69                     .replace(R.id.content_frame,
70                             RatingsFragment.create(canteenId))
71                     .addToBackStack(null)
72                     .commit();
73                 return true;
74             default:
75                 return false;
76         }
77     }
78 });
79
80     // set standard fragment
81     MainActivity.this.getSupportFragmentManager().beginTransaction()
82         .replace(R.id.content_frame,
83                 CanteenFragment.create())
84         .addToBackStack(null)
85         .commit();
86
87 }
88
89 @Override
90 public boolean onOptionsItemSelected(MenuItem item) {
91     int id = item.getItemId();
92
93     switch (id) {
94         case android.R.id.home:
95             mDrawerLayout.openDrawer(GravityCompat.START);
96             return true;
97         case R.id.mniLogout:
98             CanteenManagerApplication.getInstance().logout();
99             startActivity(LoginActivity.createIntent(MainActivity.this));
100             finish();
101             return true;
102     }
103     return super.onOptionsItemSelected(item);
104 }
105
106 @Override
107 public boolean onCreateOptionsMenu(Menu menu) {
108     getMenuInflater().inflate(R.menu.menu_main_activity, menu);

```

```
109         return super.onCreateOptionsMenu(menu);
110     }
111
112     @Override
113     public boolean onPrepareOptionsMenu(Menu menu) {
114         menu.findItem(R.id.mniLogout)
115             .setVisible(CanteenManagerApplication.getInstance().isAuthenticated
116                 ());
117         return super.onPrepareOptionsMenu(menu);
118     }
119
120     @Override
121     protected void onDestroy() {
122         super.onDestroy();
123     }
124 }
```

#### 3.4.4 CanteenFragment

```
1 package com.example.canteenchecker.canteenmanager.ui;
2
3 import android.location.Address;
4 import android.location.Geocoder;
5 import android.os.AsyncTask;
6 import android.os.Bundle;
7 import android.support.annotation.Nullable;
8 import android.support.v4.app.Fragment;
9 import android.support.v7.widget.Toolbar;
10 import android.text.Editable;
11 import android.text.TextWatcher;
12 import android.util.Log;
13 import android.view.LayoutInflater;
14 import android.view.View;
15 import android.view.ViewGroup;
16 import android.widget.Button;
17 import android.widget.EditText;
18 import android.widget.LinearLayout;
19 import android.widget.ProgressBar;
20 import android.widget.SeekBar;
21 import android.widget.TextView;
22 import android.widget.Toast;
23
24 import com.example.canteenchecker.canteenmanager.CanteenManagerApplication;
25 import com.example.canteenchecker.canteenmanager.R;
26 import com.example.canteenchecker.canteenmanager.core.Canteen;
27 import com.example.canteenchecker.canteenmanager.proxy.ServiceProxy;
28 import com.google.android.gms.maps.CameraUpdateFactory;
29 import com.google.android.gms.maps.GoogleMap;
30 import com.google.android.gms.maps.OnMapReadyCallback;
31 import com.google.android.gms.maps.SupportMapFragment;
32 import com.google.android.gms.maps.UiSettings;
33 import com.google.android.gms.maps.model.BitmapDescriptorFactory;
34 import com.google.android.gms.maps.model.LatLng;
35 import com.google.android.gms.maps.model.Marker;
36 import com.google.android.gms.maps.model.MarkerOptions;
37
38 import java.io.IOException;
```

```
39 import java.text.NumberFormat;
40 import java.util.ArrayList;
41 import java.util.List;
42 import java.util.Timer;
43 import java.util.TimerTask;
44
45 public class CanteenFragment extends Fragment {
46
47     private static final String TAG = CanteenFragment.class.toString();
48     private static final String CANTEEN_ID_KEY = "canteenId";
49     private static final int DEFAULT_MAP_ZOOM_FACTOR = 17;
50
51     public static Fragment create() {
52         CanteenFragment canteenFragment = new CanteenFragment();
53         Bundle arguments = canteenFragment.getArguments();
54         if (arguments == null) {
55             arguments = new Bundle();
56         }
57         canteenFragment.setArguments(arguments);
58         return canteenFragment;
59     }
60
61     private Canteen canteen;
62     private Marker marker;
63
64     private View viwProgress;
65     private View viwContent;
66
67     private EditText edtCanteenName;
68     private EditText edtCanteenAddress;
69     private EditText edtCanteenPhone;
70     private EditText edtCanteenWeb;
71     private EditText edtSetCanteenMeal;
72     private EditText edtSetCanteenMealPrice;
73     private TextView txvCanteenWaitingTime;
74     private SeekBar sbaCanteenSetWaitingTime;
75
76     private Button btnChangesRevert;
77     private Button btnCanteenSave;
78
79     private SupportMapFragment mpfMap;
80
81     @Nullable
82     @Override
83     public View onCreateView(LayoutInflater inflater, ViewGroup container,
84                             Bundle savedInstanceState) {
85
86         View view = inflater.inflate(R.layout.fragment_edit_canteen, container,
87                                     false);
88
89         viwProgress = view.findViewById(R.id.viwProgress);
90         viwContent = view.findViewById(R.id.viwContent);
91
92         edtCanteenName = view.findViewById(R.id.edtCanteenName);
93         edtCanteenAddress = view.findViewById(R.id.edtCanteenAddress);
94         edtCanteenAddress.addTextChangedListener(new TextWatcher() {
95             @Override
```

```

95         public void beforeTextChanged(CharSequence s, int start, int count, int
after) {
96             }
97
98             @Override
99             public void onTextChanged(CharSequence s, int start, int before, int
count) {
100             }
101
102             @Override
103             public void afterTextChanged(Editable s) {
104                 new Timer().schedule(
105                     new TimerTask() {
106                         @Override
107                         public void run() {
108                             updateMap(edtCanteenAddress.getText().toString());
109                         }
110                     },
111                     2000
112                 );
113             }
114         });
115
116         edtCanteenPhone = view.findViewById(R.id.edtCanteenPhone);
117         edtCanteenWeb = view.findViewById(R.id.edtCanteenWeb);
118         edtSetCanteenMeal = view.findViewById(R.id.edtSetCanteenMeal);
119         edtSetCanteenMealPrice = view.findViewById(R.id.edtSetCanteenMealPrice);
120         txvCanteenWaitingTime = view.findViewById(R.id.txvCanteenWaitingTime);
121
122         sbaCanteenSetWaitingTime = view.findViewById(R.id.sbaCanteenWaitingTime);
123         sbaCanteenSetWaitingTime.setOnSeekBarChangeListener(
124             new SeekBar.OnSeekBarChangeListener() {
125                 @Override
126                 public void onProgressChanged(SeekBar seekBar, int progress,
boolean fromUser) {
127                     txvCanteenWaitingTime.setText(String.valueOf(progress));
128                 }
129
130                 @Override
131                 public void onStartTrackingTouch(SeekBar seekBar) {
132                 }
133
134                 @Override
135                 public void onStopTrackingTouch(SeekBar seekBar) {
136                 }
137             }
138         );
139
140         btnChangesRevert = view.findViewById(R.id.btnChangesRevert);
141         btnChangesRevert.setOnClickListener(new View.OnClickListener() {
142             @Override
143             public void onClick(View v) {
144                 setUIFields();
145             }
146         });
147
148         btnCanteenSave = view.findViewById(R.id.btnCanteenSave);

```

```

149         btnCanteenSave.setOnClickListener(new View.OnClickListener() {
150             @Override
151             public void onClick(View v) {
152                 saveCanteen();
153             }
154         });
155
156         loadCanteen(); // load canteen
157
158         mpfMap = (SupportMapFragment) getChildFragmentManager()
159             .findFragmentById(R.id.mpfMap);
160         mpfMap.getMapAsync(new OnMapReadyCallback() {
161             @Override
162             public void onMapReady(final GoogleMap googleMap) {
163
164                 UiSettings uiSettings = googleMap.getUiSettings();
165                 uiSettings.setAllGesturesEnabled(false);
166                 uiSettings.setZoomControlsEnabled(true);
167
168                 googleMap.setOnMapClickListener(new GoogleMap.OnMapClickListener() {
169                     @Override
170                     public void onMapClick(LatLng point) {
171                         List<Address> addresses = new ArrayList<>();
172                         try {
173                             addresses = new Geocoder(getActivity())
174                                 .getFromLocation(point.latitude, point.longitude
175 , 1);
176                         } catch (IOException e) {
177                             e.printStackTrace();
178                         }
179
180                         Address address = addresses.get(0);
181
182                         if (address != null) {
183                             edtCanteenAddress.setText(address.getAddressLine(0));
184
185                             if (marker != null) {
186                                 marker.remove();
187                             }
188
189                             // place marker where clicked
190                             marker = googleMap.addMarker(new MarkerOptions()
191                                 .position(point).title(getString(R.string.
192 lab_canteen))
193                                 .icon(BitmapDescriptorFactory
194                                     .defaultMarker(BitmapDescriptorFactory.
195 HUE_GREEN)));
196
197                             }
198                         }); // setOnMapClickListener()
199                     }
200                 }); // getMapAsync()
201
202         return view;

```

```
203     private void loadCanteen() {
204
205         new AsyncTask<String, Void, Canteen>() {
206             @Override
207             protected Canteen doInBackground(String... strings) {
208                 try {
209                     return new ServiceProxy().getCanteen();
210                 } catch (IOException e) {
211                     Log.e(TAG, getString(R.string.msg_LoadingCanteenFailed), e);
212                     return null;
213                 }
214             }
215
216             @Override
217             protected void onPostExecute(Canteen canteen) {
218                 if (canteen != null) {
219                     CanteenFragment.this.canteen = canteen;
220                     getArguments().putString(CANTEEN_ID_KEY, canteen.getId());
221                     getActivity().getIntent().putExtra(CANTEEN_ID_KEY, canteen.getId
222 ());
223                     CanteenManagerApplication.getInstance().setCanteenId(canteen.
224 getId());
225
226                     setUIFields();
227                     updateMap(canteen.getAddress());
228
229                     viwProgress.setVisibility(View.GONE);
230                     viwContent.setVisibility(View.VISIBLE);
231                 } else {
232                     Toast.makeText(getActivity(),
233                         R.string.msg_LoadingCanteenFailed, Toast.LENGTH_LONG).
234 show();
235                 }
236             }
237         }.execute(CanteenManagerApplication.getInstance().getAuthenticationToken());
238     }
239
240     private void setUIFields() {
241
242         Toolbar toolbar = getActivity().findViewById(R.id.toolbar);
243         if (toolbar != null) {
244             toolbar.setTitle(canteen.getName());
245         }
246
247         edtCanteenName.setText(canteen.getName());
248         edtCanteenAddress.setText(canteen.getAddress());
249         edtCanteenPhone.setText(canteen.getPhoneNumber());
250         edtCanteenWeb.setText(canteen.getWebsite());
251         edtSetCanteenMeal.setText(canteen.getMeal());
252         edtSetCanteenMealPrice.setText(NumberFormat.getNumberInstance().format(
253 canteen.getMealPrice()));
254         txvCanteenWaitingTime.setText(String.valueOf(canteen.getAverageWaitingTime()
255 ));
256         sbaCanteenSetWaitingTime.setProgress(canteen.getAverageWaitingTime());
257     }
258
259     private void updateMap(final String address) {
```



```

255     new AsyncTask<String, Void, LatLng>() {
256         @Override
257         protected LatLng doInBackground(String... strings) {
258             LatLng location = null;
259             Geocoder geocoder = new Geocoder(getActivity());
260             try {
261                 List<Address> addresses = geocoder.getFromLocationName(strings
262 [0], 1);
263                 if (addresses != null && addresses.size() > 0) {
264                     Address address = addresses.get(0);
265                     location = new LatLng(address.getLatitude(), address.
266 getLongitude());
267                 } else {
268                     Log.w(TAG, "Resolving failed!");
269                 }
270             } catch (IOException e) {
271                 Log.w(TAG, "Resolving of Adress failed.");
272             }
273             return location;
274         }
275     }
276
277     @Override
278     protected void onPostExecute(final LatLng latLng) {
279         mpmfMap.getMapAsync(new OnMapReadyCallback() {
280             @Override
281             public void onMapReady(GoogleMap googleMap) {
282                 googleMap.clear();
283
284                 if (latLng != null) {
285                     marker = googleMap.addMarker(new MarkerOptions()
286                         .position(latLng));
287                     googleMap
288                         .animateCamera(CameraUpdateFactory
289                             .newLatLngZoom(latLng,
290                                 DEFAULT_MAP_ZOOM_FACTOR));
291                 } else {
292                     googleMap.animateCamera(CameraUpdateFactory
293                         .newLatLngZoom(new LatLng(0, 0), 0));
294                 }
295             }
296         });
297     }
298
299     private void saveCanteen() {
300         setUIEnabled(false);
301         new AsyncTask<Object, Void, Void>() {
302             @Override
303             protected Void doInBackground(Object... objects) {
304                 new ServiceProxy().updateCanteen((String) objects[0],
305                     new Canteen((String) objects[1], (String) objects[2],
306                         (String) objects[3], (String) objects[4],
307                         (String) objects[5], (String) objects[6],
308                         (float) objects[7], (float) objects[8],
309                         (int) objects[9], null));
310                 return null;

```

```

310         }
311
312         @Override
313         protected void onPostExecute(Void v) {
314             new AsyncTask() {
315                 @Override
316                 protected Canteen doInBackground(Void... voids) {
317                     try {
318                         return new ServiceProxy().getCanteen();
319                     } catch (IOException e) {
320                         Log.e(TAG, getString(R.string.msg_LoadingCanteenFailed),
321                             e);
322                     }
323                     return null;
324                 }
325
326                 @Override
327                 protected void onPostExecute(Canteen canteen) {
328                     if (canteen != null) {
329                         CanteenFragment.this.canteen = canteen;
330                         setUIFields();
331                         updateMap(canteen.getAddress());
332                     } else {
333                         Log.e(TAG, getString(R.string.msg_LoadingCanteenFailed))
334                             ;
335                     }
336                     setUIEnabled(true);
337                 }
338             }.execute();
339
340             CanteenManagerApplication.getInstance().getAuthenticationToken(),
341             canteen.getId(),//1
342             edtCanteenName.getText().toString(),//2
343             edtCanteenAddress.getText().toString(),//3
344             edtCanteenPhone.getText().toString(),//4
345             edtCanteenWeb.getText().toString(),//5
346             edtSetCanteenMeal.getText().toString(),//6
347             Float.parseFloat(edtSetCanteenMealPrice.getText()
348                 .toString().replaceAll(",", ".")),//7
349             canteen.getAverageRating(),//8
350             sbaCanteenSetWaitingTime.getProgress()//9
351         );
352     }
353
354     private void setUIEnabled(boolean enabled) {
355         edtCanteenName.setEnabled(enabled);
356         edtCanteenAddress.setEnabled(enabled);
357         edtCanteenPhone.setEnabled(enabled);
358         edtCanteenWeb.setEnabled(enabled);
359         edtSetCanteenMeal.setEnabled(enabled);
360         edtSetCanteenMealPrice.setEnabled(enabled);
361         sbaCanteenSetWaitingTime.setEnabled(enabled);
362         btnCanteenSave.setEnabled(enabled);
363         btnChangesRevert.setEnabled(enabled);
364     }

```

```
365 }
```

### 3.4.5 RatingsFragment

```
1 package com.example.canteenchecker.canteenmanager.ui;
2
3 import android.content.BroadcastReceiver;
4 import android.content.Context;
5 import android.content.DialogInterface;
6 import android.content.Intent;
7 import android.os.AsyncTask;
8 import android.os.Bundle;
9 import android.support.annotation.Nullable;
10 import android.support.v4.app.Fragment;
11 import android.support.v4.content.LocalBroadcastManager;
12 import android.support.v4.widget.SwipeRefreshLayout;
13 import android.support.v7.app.AlertDialog;
14 import android.support.v7.widget.LinearLayoutManager;
15 import android.support.v7.widget.RecyclerView;
16 import android.util.Log;
17 import android.view.LayoutInflater;
18 import android.view.View;
19 import android.view.ViewGroup;
20 import android.widget.Button;
21 import android.widget.RatingBar;
22 import android.widget.TextView;
23 import android.widget.Toast;
24
25 import com.example.canteenchecker.canteenmanager.CanteenManagerApplication;
26 import com.example.canteenchecker.canteenmanager.R;
27 import com.example.canteenchecker.canteenmanager.core.IClickedListener;
28 import com.example.canteenchecker.canteenmanager.core.Rating;
29 import com.example.canteenchecker.canteenmanager.proxy.ServiceProxy;
30 import com.example.canteenchecker.canteenmanager.service.MyFirebaseMessagingService;
31
32 import java.io.IOException;
33 import java.util.ArrayList;
34 import java.util.Collection;
35 import java.util.Collections;
36 import java.util.List;
37
38 public class RatingsFragment extends Fragment {
39
40     private static final String TAG = RatingsFragment.class.toString();
41     private static final String CANTEEN_ID_KEY = "canteenId";
42     private static final int LOGIN_FOR_REVIEW_DELETION = 2210;
43
44     public static Fragment create(String canteenId) {
45         RatingsFragment ratingsFragment = new RatingsFragment();
46         Bundle arguments = new Bundle();
47         arguments.putString(CANTEEN_ID_KEY, canteenId);
48         ratingsFragment.setArguments(arguments);
49         return ratingsFragment;
50     }
51
52     private RatingsAdapter ratingsAdapter = new RatingsAdapter(new IClickedListener
53     () {
```

```
53         @Override
54         public void onClicked(String id) {
55             deleteRating(id);
56         }
57     });
58
59     private final BroadcastReceiver broadcastReceiver = new BroadcastReceiver() {
60         @Override
61         public void onReceive(Context context, Intent intent) {
62             String canteenId = getCanteenId();
63             if (canteenId != null && canteenId.equals(MyFirebaseMessagingService.
64                 extractCanteenId(intent))) {
65                 updateRatings();
66             }
67         }
68     };
69
70     private SwipeRefreshLayout srlRatings;
71
72     @Nullable
73     @Override
74     public View onCreateView(LayoutInflater inflater, ViewGroup container,
75                             Bundle savedInstanceState) {
76         View view = inflater.inflate(R.layout.fragment_manage_ratings, container,
77                                     false);
78
79         getChildFragmentManager().beginTransaction().replace(R.id.lnlReviews,
80             ReviewsFragment.create(getCanteenId())).commit();
81
82         RecyclerView rcvRatings = view.findViewById(R.id.rcvRatings);
83         rcvRatings.setLayoutManager(new LinearLayoutManager(getActivity()));
84         rcvRatings.setAdapter(ratingsAdapter);
85
86         srlRatings = view.findViewById(R.id.srlRatings);
87         srlRatings.setOnRefreshListener(new SwipeRefreshLayout.OnRefreshListener() {
88             @Override
89             public void onRefresh() {
90                 updateRatings();
91             }
92         });
93
94         LocalBroadcastManager.getInstance(getActivity()).registerReceiver(
95             broadcastReceiver,
96             MyFirebaseMessagingService.createCanteenChangedIntentFilter());
97
98         updateRatings();
99
100         return view;
101     }
102
103     @Override
104     public void onDestroyView() {
105         super.onDestroyView();
106
107         LocalBroadcastManager.getInstance(getActivity()).unregisterReceiver(
108             broadcastReceiver);
109     }
110 }
```

```

106     }
107
108     private String getCanteenId() {
109         return getArguments().getString(CANTEEN_ID_KEY);
110     }
111
112     private void updateRatings() {
113         srlRatings.setRefreshing(true);
114         new AsyncTask<Void, Void, Collection<Rating>>() {
115             @Override
116             protected Collection<Rating> doInBackground(Void... voids) {
117                 try {
118                     Log.v(TAG, getString(R.string.msg>LoadingRatings));
119                     return new ServiceProxy().getRatings();
120                 } catch (IOException e) {
121                     Log.e(TAG, getString(R.string.msg>LoadingRatingsFailed), e);
122                     return null;
123                 }
124             }
125
126             @Override
127             protected void onPostExecute(Collection<Rating> ratings) {
128                 Collections.sort((ArrayList<Rating>) ratings, Collections.
reverseOrder());
129                 ratingsAdapter.displayRatings(ratings);
130                 srlRatings.setRefreshing(false);
131             }
132         }.execute();
133     }
134
135     private void deleteRating(final String ratingId) {
136         if (CanteenManagerApplication.getInstance().isAuthenticated()) {
137             //authenticated
138             final View view = LayoutInflater.from(getActivity()).inflate(R.layout.
dialog_delete_rating, null);
139             new AlertDialog.Builder(getActivity())
140                 .setTitle(R.string.dlgDeleteRating_title)
141                 .setView(view)
142                 .setNegativeButton(R.string.dlgDeleteRating_negativeButton, new
DialogInterface.OnClickListener() {
143                     @Override
144                     public void onClick(DialogInterface dialog, int which) {
145                         dialog.dismiss();
146                     }
147                 })
148                 .setPositiveButton(getString(R.string.
dlgDeleteRating_positiveButton), new DialogInterface.OnClickListener() {
149                     @Override
150                     public void onClick(DialogInterface dialog, int which) {
151                         dialog.dismiss();
152                         new AsyncTask<String, Void, Boolean>() {
153                             @Override
154                             protected Boolean doInBackground(String... strings)
155                             {
156                                 try {
157                                     return new ServiceProxy().deleteRating(
strings[0], ratingId);

```

```

157         } catch (IOException e) {
158             Log.e(TAG, "Review creation failed", e);
159         }
160         return null;
161     }
162
163     @Override
164     protected void onPostExecute(Boolean b) {
165         Toast.makeText(getActivity(),
166             b ? getString(R.string.msg_ratingDeleted
167 ) : getString(R.string.msg_ratingNotDeleted),
168             Toast.LENGTH_SHORT).show();
169         //updateRatings();
170     }
171     }.execute(
172         CanteenManagerApplication.getInstance().
173         getAuthenticationToken()
174     );
175
176     }
177     })
178     .create()
179     .show();
180 } else {
181     //not authenticated
182     startActivityForResult(LoginActivity.createIntent(getActivity()),
183 LOGIN_FOR_REVIEW_DELETION);
184 }
185
186 private static class RatingsAdapter extends RecyclerView.Adapter<RatingsAdapter.
187 ViewHolder> {
188
189     private IClickedListener clickedListener;
190
191     public RatingsAdapter(IClickedListener cl) {
192         super();
193         if (cl != null) {
194             clickedListener = cl;
195         }
196     }
197
198     static class ViewHolder extends RecyclerView.ViewHolder {
199         private final TextView txvUserName = itemView.findViewById(R.id.
200 txvUserName);
201         private final TextView txvRemark = itemView.findViewById(R.id.txvRemark)
202 ;
203         private final RatingBar rtbRating = itemView.findViewById(R.id.rtbRating
204 );
205         private final TextView txvTimestamp = itemView.findViewById(R.id.
206 txvTimestamp);
207         private final Button btnDelete = itemView.findViewById(R.id.btnDelete);
208
209         private IClickedListener clickedListener;
210
211         public ViewHolder(View itemView) {
212             super(itemView);

```

```

206     }
207 }
208
209 @Override
210 public ViewHolder onCreateViewHolder(ViewGroup parent, int viewType) {
211     View view = LayoutInflater.from(parent.getContext())
212         .inflate(R.layout.layout_rating_item, parent, false);
213     return new ViewHolder(view);
214 }
215
216 @Override
217 public void onBindViewHolder(final RatingsAdapter.ViewHolder holder, int
position) {
218     final Rating r = ratingList.get(position);
219
220     holder.txvUserName.setText(r.getUserName());
221     holder.txvRemark.setText(r.getRemark());
222     holder.rtbRating.setRating(r.getRatingPoints());
223     holder.txvTimestamp.setText(r.getDate());
224     holder.clickedListener = clickedListener;
225
226     holder.btnDelete.setOnClickListener(new View.OnClickListener() {
227         @Override
228         public void onClick(View v) {
229             if (holder.clickedListener != null) {
230                 holder.clickedListener.onClicked(r.getId());
231             }
232         }
233     });
234 }
235
236 private final List<Rating> ratingList = new ArrayList<>();
237
238 void displayRatings(Collection<Rating> ratings) {
239     ratingList.clear();
240     if (ratings != null) {
241         ratingList.addAll(ratings);
242     }
243     notifyDataSetChanged();
244 }
245
246 @Override
247 public int getItemCount() {
248     return ratingList.size();
249 }
250 }
251
252 }

```

### 3.4.6 ReviewDataFragment

```

1 package com.example.canteenchecker.canteenmanager.ui;
2
3 import android.content.BroadcastReceiver;
4 import android.content.Context;
5 import android.content.Intent;
6 import android.os.AsyncTask;

```

```
7 import android.os.Bundle;
8 import android.support.annotation.Nullable;
9 import android.support.v4.app.Fragment;
10 import android.support.v4.content.LocalBroadcastManager;
11 import android.util.Log;
12 import android.view.LayoutInflater;
13 import android.view.View;
14 import android.view.ViewGroup;
15 import android.widget.LinearLayout;
16 import android.widget.RatingBar;
17 import android.widget.TextView;
18
19 import com.example.canteenchecker.canteenmanager.R;
20 import com.example.canteenchecker.canteenmanager.core.ReviewData;
21 import com.example.canteenchecker.canteenmanager.proxy.ServiceProxy;
22 import com.example.canteenchecker.canteenmanager.service.MyFirebaseMessagingService;
23
24 import java.io.IOException;
25 import java.text.NumberFormat;
26
27 public class ReviewsFragment extends Fragment {
28
29     private static final String TAG = ReviewsFragment.class.toString();
30     private static final String CANTEEN_ID_KEY = "canteenId";
31
32     public static Fragment create(String canteenId) {
33         ReviewsFragment reviewsFragment = new ReviewsFragment();
34         Bundle arguments = new Bundle();
35         arguments.putString(CANTEEN_ID_KEY, canteenId);
36         reviewsFragment.setArguments(arguments);
37         return reviewsFragment;
38     }
39
40     private TextView txvAverageRating;
41     private RatingBar rtbAverageRating;
42     private TextView txvTotalRatings;
43     private View viwRatingOne;
44     private View viwRatingTwo;
45     private View viwRatingThree;
46     private View viwRatingFour;
47     private View viwRatingFive;
48
49     private final BroadcastReceiver broadcastReceiver = new BroadcastReceiver() {
50         @Override
51         public void onReceive(Context context, Intent intent) {
52             String canteenId = getCanteenId();
53             if (canteenId != null && canteenId.equals(MyFirebaseMessagingService.
54                 extractCanteenId(intent))) {
55                 updateReviews();
56             }
57         }
58     };
59
60     @Nullable
61     @Override
62     public View onCreateView(LayoutInflater inflater, @Nullable ViewGroup container,
63         Bundle savedInstanceState) {
```



```

62     View view = inflater.inflate(R.layout.fragment_reviews, container, false);
63     txvAverageRating = view.findViewById(R.id.txvAverageRating);
64     rtbAverageRating = view.findViewById(R.id.rtbAverageRating);
65     txvTotalRatings = view.findViewById(R.id.txvTotalRatings);
66     viwRatingOne = view.findViewById(R.id.viwRatingsOne);
67     viwRatingTwo = view.findViewById(R.id.viwRatingsTwo);
68     viwRatingThree = view.findViewById(R.id.viwRatingsThree);
69     viwRatingFour = view.findViewById(R.id.viwRatingsFour);
70     viwRatingFive = view.findViewById(R.id.viwRatingsFive);
71
72     LocalBroadcastManager.getInstance(getActivity())
73         .registerReceiver(broadcastReceiver, MyFirebaseMessagingService.
createCanteenChangedIntentFilter());
74
75     updateReviews();
76
77     return view;
78 }
79
80 @Override
81 public void onDestroyView() {
82     super.onDestroyView();
83
84     LocalBroadcastManager.getInstance(getActivity()).unregisterReceiver(
broadcastReceiver);
85 }
86
87 private String getCanteenId() {
88     return getArguments().getString(CANTEEN_ID_KEY);
89 }
90
91 private void updateReviews() {
92     new AsyncTask<String, Void, ReviewData>() {
93         @Override
94         protected ReviewData doInBackground(String... strings) {
95             try {
96                 return new ServiceProxy().getReviewsDataForCanteen(strings[0]);
97             } catch (IOException e) {
98                 Log.e(TAG, "");
99                 return null;
100             }
101         }
102     }
103
104     @Override
105     protected void onPostExecute(ReviewData reviewData) {
106         if (reviewData != null) {
107             txvAverageRating.setText(NumberFormat.getNumberInstance().format(
reviewData.getAverageRating()));
108             txvTotalRatings.setText(NumberFormat.getNumberInstance().format(
reviewData.getTotalRatings()));
109             rtbAverageRating.setRating(reviewData.getAverageRating());
110             setWeight(viwRatingOne, reviewData.getRatingsOne(), reviewData.
getTotalRatingsOfMostCommonGrade());
111             setWeight(viwRatingTwo, reviewData.getRatingsTwo(), reviewData.
getTotalRatingsOfMostCommonGrade());
112             setWeight(viwRatingThree, reviewData.getRatingsThree(),
reviewData.getTotalRatingsOfMostCommonGrade());

```

```

112         setWeight(viwRatingFour, reviewData.getRatingsFour(), reviewData
    .getTotalRatingsOfMostCommonGrade());
113         setWeight(viwRatingFive, reviewData.getRatingsFive(), reviewData
    .getTotalRatingsOfMostCommonGrade());
114     } else {
115         txvAverageRating.setText(null);
116         txvTotalRatings.setText(null);
117         rtbAverageRating.setRating(0);
118         setWeight(viwRatingOne, 0, 1);
119         setWeight(viwRatingTwo, 0, 1);
120         setWeight(viwRatingThree, 0, 1);
121         setWeight(viwRatingFour, 0, 1);
122         setWeight(viwRatingFive, 0, 1);
123     }
124 }
125
126 private void setWeight(View view, int value, int maximum) {
127     ViewGroup.LayoutParams layoutParams = view.getLayoutParams();
128     float weight = ((float) value) / maximum;
129     view.setLayoutParams(new LinearLayout.LayoutParams(layoutParams.
width, layoutParams.height, weight));
130 }
131 }.execute(getCanteenId());
132 }
133
134 }

```

## 3.5 XML

### 3.5.1 AndroidManifest

```

1 <?xml version="1.0" encoding="utf-8"?>
2 <manifest xmlns:android="http://schemas.android.com/apk/res/android"
3     xmlns:tools="http://schemas.android.com/tools"
4     package="com.example.canteenchecker.canteenmanager">
5
6     <uses-permission android:name="android.permission.INTERNET" />
7
8     <application
9         android:name=".CanteenManagerApplication"
10        android:allowBackup="false"
11        android:icon="@mipmap/ic_launcher"
12        android:label="@string/app_name"
13        android:roundIcon="@mipmap/ic_launcher_round"
14        android:supportsRtl="true"
15        android:theme="@style/MainTheme"
16        tools:ignore="GoogleAppIndexingWarning">
17
18        <activity
19            android:name=".ui.SplashActivity"
20            android:theme="@style/SplashTheme">
21            <intent-filter>
22                <action android:name="android.intent.action.MAIN" />
23                <category android:name="android.intent.category.LAUNCHER" />
24            </intent-filter>
25        </activity>

```

```
26     <activity
27         android:name=".ui.LoginActivity"
28         android:theme="@style/AppTheme" />
29     <activity android:name=".ui.MainActivity" />
30
31     <meta-data
32         android:name="com.google.android.geo.API_KEY"
33         android:value="@string/google_maps_key" />
34
35     <service android:name=".service.MyFirebaseMessagingService">
36         <intent-filter>
37             <action android:name="com.google.firebase.MESSAGING_EVENT" />
38         </intent-filter>
39     </service>
40
41 </application>
42
43 </manifest>
```

### 3.5.2 ActivityLogin

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <android.support.v7.widget.CardView xmlns:android="http://schemas.android.com/apk/
  res/android"
3     style="@style/cmCardView"
4     android:layout_width="match_parent"
5     android:layout_height="wrap_content"
6     android:fitsSystemWindows="true"
7     android:orientation="vertical">
8
9     <LinearLayout
10         android:id="@+id/ll_cv_activity_login"
11         style="@style/cmLLContentWrapper">
12
13         <TextView
14             android:id="@+id/txvLoginActivityHeader"
15             style="@style/cmTextView"
16             android:text="@string/txvLoginActivityHeader_text"
17             android:textColor="@color/colorPrimary"
18             android:textSize="@dimen/text_box_font_size" />
19
20         <android.support.v7.widget.AppCompatEditText
21             android:id="@+id/edtUserName"
22             style="@style/cmInputBox"
23             android:hint="@string/edtUserName_hint"
24             android:inputType="text" />
25
26         <android.support.v7.widget.AppCompatEditText
27             android:id="@+id/edtPassWord"
28             style="@style/cmInputBox"
29             android:hint="@string/edtPassword_hint"
30             android:inputType="textPassword" />
31
32         <LinearLayout
33             android:layout_width="match_parent"
34             android:layout_height="wrap_content"
35             android:gravity="end">
```

```

36
37         <Button
38             android:id="@+id/btnLogIn"
39             style="@style/cmButton"
40             android:text="@string/btnLogIn_text" />
41
42     </LinearLayout>
43
44 </LinearLayout>
45 </android.support.v7.widget.CardView>

```

### 3.5.3 ActivityMain

```

1 <?xml version="1.0" encoding="utf-8"?>
2 <android.support.v4.widget.DrawerLayout xmlns:android="http://schemas.android.com/
  apk/res/android"
3     xmlns:app="http://schemas.android.com/apk/res-auto"
4     android:id="@+id/drawer_layout"
5     android:layout_width="match_parent"
6     android:layout_height="match_parent"
7     android:fitsSystemWindows="true">
8
9     <android.support.design.widget.CoordinatorLayout
10         android:layout_width="match_parent"
11         android:layout_height="wrap_content">
12
13         <android.support.design.widget.AppBarLayout
14             android:layout_width="match_parent"
15             android:layout_height="wrap_content"
16             android:background="@color/colorPrimary">
17
18             <android.support.v7.widget.Toolbar
19                 android:id="@+id/toolbar"
20                 android:layout_width="match_parent"
21                 android:layout_height="?attr/actionBarSize"
22                 android:theme="@style/cmAppBar"
23                 app:title="@string/app_name" />
24         </android.support.design.widget.AppBarLayout>
25
26         <FrameLayout
27             android:id="@+id/content_frame"
28             android:layout_width="match_parent"
29             android:layout_height="match_parent" />
30
31     </android.support.design.widget.CoordinatorLayout>
32
33     <android.support.design.widget.NavigationView
34         android:id="@+id/nav_view"
35         android:layout_width="wrap_content"
36         android:layout_height="match_parent"
37         android:layout_gravity="start"
38         android:fitsSystemWindows="true"
39         app:headerLayout="@layout/nav_header"
40         app:menu="@menu/drawer_view" />
41
42 </android.support.v4.widget.DrawerLayout>

```

### 3.5.4 DialogDeleteRating

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     android:layout_width="match_parent"
4     android:layout_height="match_parent"
5     android:orientation="vertical"
6     android:padding="@dimen/distance_small">
7
8 </LinearLayout>
```

### 3.5.5 DrawerView

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <menu xmlns:android="http://schemas.android.com/apk/res/android">
3     <group android:checkableBehavior="single">
4         <item
5             android:id="@+id/nav_editCanteen"
6             android:icon="@drawable/ic_mode_edit_black"
7             android:title="@string/lab_editCanteen" />
8         <item
9             android:id="@+id/nav_manageRatings"
10            android:icon="@drawable/ic_playlist_add_check_black"
11            android:title="@string/lab_manageRatings" />
12     </group>
13 </menu>
```

### 3.5.6 FragmentEditCanteen

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <ScrollView xmlns:android="http://schemas.android.com/apk/res/android"
3     android:layout_width="match_parent"
4     android:layout_height="match_parent"
5     android:layout_marginTop="@dimen/distance_ml"
6     android:fitsSystemWindows="true">
7
8     <FrameLayout
9         android:layout_width="match_parent"
10        android:layout_height="wrap_content">
11
12        <ProgressBar
13            android:id="@+id/viwProgress"
14            android:layout_width="wrap_content"
15            android:layout_height="wrap_content"
16            android:layout_gravity="center"
17            android:visibility="visible" />
18
19        <android.support.v7.widget.CardView
20            android:id="@+id/viwContent"
21            style="@style/cmCardView"
22            android:layout_marginTop="@dimen/distance_extra_small"
23            android:layout_width="match_parent"
24            android:layout_height="wrap_content"
25            android:visibility="gone">
26
27            <LinearLayout style="@style/cmLLContentWrapper">
```

```
28
29         <TextView
30             android:id="@+id/txvModifyActivityHeader"
31             style="@style/cmTextView"
32             android:text="@string/txvModifyActivityHeader_text"
33             android:textColor="@color/colorPrimary"
34             android:textSize="@dimen/text_box_font_size" />
35
36         <android.support.v7.widget.AppCompatEditText
37             android:id="@+id/edtCanteenName"
38             style="@style/cmInputBox"
39             android:hint="@string/edtCanteenName_hint"
40             android:inputType="text" />
41
42         <android.support.v7.widget.AppCompatEditText
43             android:id="@+id/edtCanteenAddress"
44             style="@style/cmInputBox"
45             android:hint="@string/edtCanteenAddress_hint"
46             android:inputType="text" />
47
48         <fragment
49             android:id="@+id/mpfMap"
50             class="com.google.android.gms.maps.SupportMapFragment"
51             android:layout_width="match_parent"
52             android:layout_height="@dimen/canteen_details_map_height"
53             android:layout_marginTop="@dimen/distance_small" />
54
55         <include layout="@layout/layout_divider" />
56
57         <android.support.v7.widget.AppCompatEditText
58             android:id="@+id/edtCanteenPhone"
59             style="@style/cmInputBox"
60             android:hint="@string/edtCanteenPhone_hint"
61             android:inputType="text" />
62
63         <android.support.v7.widget.AppCompatEditText
64             android:id="@+id/edtCanteenWeb"
65             style="@style/cmInputBox"
66             android:hint="@string/edtCanteenWeb_hint"
67             android:inputType="text" />
68
69         <android.support.v7.widget.AppCompatEditText
70             android:id="@+id/edtSetCanteenMeal"
71             style="@style/cmInputBox"
72             android:hint="@string/edtCanteenMeal_hint"
73             android:inputType="text" />
74
75         <android.support.v7.widget.AppCompatEditText
76             android:id="@+id/edtSetCanteenMealPrice"
77             style="@style/cmInputBox"
78             android:hint="@string/edtCanteenMealPrice_hint"
79             android:inputType="text" />
80
81         <LinearLayout
82             android:layout_width="match_parent"
83             android:layout_height="wrap_content"
84             android:orientation="vertical">
```

```

85
86         <TextView
87             android:id="@+id/txvCanteenWaitingTimeLabel"
88             style="@style/cmTextView"
89             android:text="@string/txvCanteenWaitingTimeLabel_text" />
90
91         <TextView
92             android:id="@+id/txvCanteenWaitingTime"
93             style="@style/cmTextView"
94             android:textAlignment="center" />
95
96     </LinearLayout>
97
98     <SeekBar
99         android:id="@+id/sbaCanteenWaitingTime"
100         style="@style/Widget.AppCompat.SeekBar"
101         android:layout_width="match_parent"
102         android:layout_height="wrap_content"
103         android:layout_marginBottom="@dimen/distance_small"
104         android:max="60"
105         android:progress="4" />
106
107     <LinearLayout
108         android:layout_width="match_parent"
109         android:layout_height="wrap_content"
110         android:gravity="end"
111         android:orientation="horizontal">
112
113         <Button
114             android:id="@+id/btnChangesRevert"
115             style="@style/cmButton"
116             android:layout_marginBottom="8dp"
117             android:text="@string/btnChangesRevert_text"
118             android:textColor="@color/lighterGrey" />
119
120         <Button
121             android:id="@+id/btnCanteenSave"
122             style="@style/cmButton"
123             android:layout_marginBottom="@dimen/distance_small"
124             android:text="@string/btnCanteenSave_text" />
125
126     </LinearLayout>
127
128 </LinearLayout>
129 </android.support.v7.widget.CardView>
130 </FrameLayout>
131 </ScrollView>

```

### 3.5.7 FragmentManageRatings

```

1 <?xml version="1.0" encoding="utf-8"?>
2 <android.support.v7.widget.CardView xmlns:android="http://schemas.android.com/apk/
  res/android"
3     xmlns:app="http://schemas.android.com/apk/res-auto"
4     style="@style/cmCardView"
5     android:layout_width="match_parent"
6     android:layout_height="match_parent"

```

```

7      android:layout_marginTop="@dimen/distance_ml"
8      android:orientation="vertical">
9
10     <android.support.constraint.ConstraintLayout
11         android:id="@+id/viwContent"
12         style="@style/cmLLContentWrapper"
13         android:layout_width="match_parent"
14         android:layout_height="match_parent">
15
16         <TextView
17             android:id="@+id/txvReviewHeader"
18             style="@style/cmTextView"
19             android:layout_width="0dp"
20             android:layout_height="wrap_content"
21             android:text="@string/txvReviewHeader_text"
22             android:textColor="@color/colorPrimary"
23             android:textSize="@dimen/text_box_font_size"
24             app:layout_constraintEnd_toEndOf="parent"
25             app:layout_constraintStart_toStartOf="parent"
26             app:layout_constraintTop_toTopOf="parent" />
27
28         <LinearLayout
29             android:id="@+id/lnlReviews"
30             android:layout_width="0dp"
31             android:layout_height="wrap_content"
32             android:layout_margin="@dimen/distance_small"
33             android:orientation="vertical"
34             app:layout_constraintEnd_toEndOf="parent"
35             app:layout_constraintStart_toStartOf="parent"
36             app:layout_constraintTop_toBottomOf="@id/txvReviewHeader" />
37
38         <include
39             android:id="@+id/divider"
40             layout="@layout/layout_divider"
41             android:layout_width="0dp"
42             android:layout_height="1dp"
43             android:layout_marginTop="@dimen/distance_small"
44             android:layout_marginBottom="@dimen/distance_small_plus"
45             app:layout_constraintEnd_toEndOf="parent"
46             app:layout_constraintStart_toStartOf="parent"
47             app:layout_constraintTop_toBottomOf="@id/lnlReviews" />
48
49         <android.support.v4.widget.SwipeRefreshLayout
50             android:id="@+id/srlRatings"
51             android:layout_width="0dp"
52             android:layout_height="0dp"
53             app:layout_constraintBottom_toBottomOf="parent"
54             app:layout_constraintEnd_toEndOf="parent"
55             app:layout_constraintStart_toStartOf="parent"
56             app:layout_constraintTop_toBottomOf="@id/divider">
57
58             <android.support.v7.widget.RecyclerView
59                 android:id="@+id/rcvRatings"
60                 android:layout_width="match_parent"
61                 android:layout_height="match_parent"
62                 android:clipToPadding="false"
63                 android:padding="@dimen/distance_extra_small" />

```



```

64
65         </android.support.v4.widget.SwipeRefreshLayout>
66     </android.support.constraint.ConstraintLayout>
67 </android.support.v7.widget.CardView>

```

### 3.5.8 FragmentReviews

```

1  <?xml version="1.0" encoding="utf-8"?>
2  <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3      android:layout_width="match_parent"
4      android:layout_height="wrap_content"
5      android:orientation="horizontal">
6
7      <TextView
8          android:id="@+id/txvAverageRating"
9          style="@style/TextAppearance.AppCompat.Display1"
10         android:gravity="center_vertical"
11         android:layout_width="wrap_content"
12         android:layout_height="wrap_content" />
13
14     <LinearLayout
15         android:layout_width="wrap_content"
16         android:layout_height="wrap_content"
17         android:layout_marginStart="@dimen/distance_small"
18         android:layout_marginTop="@dimen/distance_ms"
19         android:orientation="vertical">
20
21         <RatingBar
22             android:id="@+id/rtbAverageRating"
23             style="@style/Widget.AppCompat.RatingBar.Small"
24             android:layout_width="wrap_content"
25             android:layout_height="wrap_content"
26             android:isIndicator="true"
27             android:numStars="5"
28             android:visibility="gone" />
29
30         <TextView
31             android:id="@+id/txvTotalRatings"
32             android:layout_width="wrap_content"
33             android:layout_height="wrap_content"
34             android:drawableEnd="@drawable/ic_people_black_18dp"
35             android:drawablePadding="@dimen/distance_extra_small" />
36     </LinearLayout>
37
38     <LinearLayout
39         android:layout_width="match_parent"
40         android:layout_height="wrap_content"
41         android:layout_marginStart="@dimen/distance_small"
42         android:layout_marginTop="@dimen/distance_small_plus"
43         android:orientation="vertical">
44
45         <LinearLayout
46             android:layout_width="match_parent"
47             android:layout_height="@dimen/rating_bar_height"
48             android:weightSum="1">
49
50             <View

```

```
51         android:id="@+id/viwRatingsFive"
52         android:layout_width="0dp"
53         android:layout_height="match_parent"
54         android:background="@color/ratingsFive" />
55     </LinearLayout>
56
57     <LinearLayout
58         android:layout_width="match_parent"
59         android:layout_height="@dimen/rating_bar_height"
60         android:weightSum="1">
61
62         <View
63             android:id="@+id/viwRatingsFour"
64             android:layout_width="0dp"
65             android:layout_height="match_parent"
66             android:background="@color/ratingsFour" />
67     </LinearLayout>
68
69     <LinearLayout
70         android:layout_width="match_parent"
71         android:layout_height="@dimen/rating_bar_height"
72         android:weightSum="1">
73
74         <View
75             android:id="@+id/viwRatingsThree"
76             android:layout_width="0dp"
77             android:layout_height="match_parent"
78             android:background="@color/ratingsThree" />
79     </LinearLayout>
80
81     <LinearLayout
82         android:layout_width="match_parent"
83         android:layout_height="@dimen/rating_bar_height"
84         android:weightSum="1">
85
86         <View
87             android:id="@+id/viwRatingsTwo"
88             android:layout_width="0dp"
89             android:layout_height="match_parent"
90             android:background="@color/ratingsTwo" />
91     </LinearLayout>
92
93     <LinearLayout
94         android:layout_width="match_parent"
95         android:layout_height="@dimen/rating_bar_height"
96         android:weightSum="1">
97
98         <View
99             android:id="@+id/viwRatingsOne"
100             android:layout_width="0dp"
101             android:layout_height="match_parent"
102             android:background="@color/ratingsOne" />
103     </LinearLayout>
104 </LinearLayout>
105
106 </LinearLayout>
```

## 3.5.9 LayoutRatingItem

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     xmlns:app="http://schemas.android.com/apk/res-auto"
4     android:layout_width="match_parent"
5     android:layout_height="wrap_content"
6     android:layout_marginBottom="@dimen/distance_medium">
7
8     <android.support.constraint.ConstraintLayout
9         android:id="@+id/cl_layout_rating_item"
10        android:layout_width="match_parent"
11        android:layout_height="wrap_content">
12
13        <LinearLayout
14            android:id="@+id/ll_left"
15            android:layout_width="0dp"
16            android:layout_height="wrap_content"
17            android:layout_marginEnd="@dimen/distance_small"
18            android:orientation="vertical"
19            app:layout_constraintBottom_toBottomOf="parent"
20            app:layout_constraintEnd_toStartOf="@id/btnDelete"
21            app:layout_constraintStart_toStartOf="parent"
22            app:layout_constraintTop_toTopOf="parent">
23
24            <TextView
25                android:id="@+id/txvRemark"
26                style="@style/cmTextView"
27                android:layout_width="wrap_content"
28                android:layout_height="wrap_content" />
29
30            <RatingBar
31                android:id="@+id/rtbRating"
32                style="@style/Widget.AppCompat.RatingBar.Small"
33                android:layout_width="wrap_content"
34                android:layout_height="wrap_content"
35                android:layout_marginTop="@dimen/distance_extra_small"
36                android:layout_marginBottom="@dimen/distance_small"
37                android:isIndicator="false"
38                android:numStars="5" />
39
40            <LinearLayout
41                android:id="@+id/ll_tvx_user_time"
42                android:layout_width="match_parent"
43                android:layout_height="wrap_content"
44                android:orientation="vertical">
45
46                <TextView
47                    android:id="@+id/txvUserName"
48                    android:layout_width="wrap_content"
49                    android:layout_height="wrap_content" />
50
51                <TextView
52                    android:id="@+id/txvTimestamp"
53                    android:layout_width="wrap_content"
54                    android:layout_height="wrap_content" />
```

```

55
56         </LinearLayout>
57     </LinearLayout>
58
59     <Button
60         style="@style/Base.Widget.AppCompat.Button.Colored"
61         android:id="@+id/btnDelete"
62         android:layout_width="wrap_content"
63         android:layout_height="0dp"
64         android:text="@string/btnRatingDelete_text"
65         app:layout_constraintBottom_toBottomOf="parent"
66         app:layout_constraintEnd_toEndOf="parent"
67         app:layout_constraintStart_toEndOf="@id/ll_left"
68         app:layout_constraintTop_toTopOf="parent" />
69
70 </android.support.constraint.ConstraintLayout>
71
72 </LinearLayout>

```

### 3.5.10 MenuMainActivity

```

1 <?xml version="1.0" encoding="utf-8"?>
2 <menu xmlns:android="http://schemas.android.com/apk/res/android"
3     xmlns:app="http://schemas.android.com/apk/res-auto">
4     <item
5         android:id="@+id/mniLogout"
6         android:title="@string/mniLogout_title"
7         app:showAsAction="ifRoom" />
8 </menu>

```

### 3.5.11 NavHeader

```

1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     android:layout_width="match_parent"
4     android:layout_height="192dp"
5     android:background="@color/colorPrimaryDark"
6     android:gravity="bottom"
7     android:orientation="vertical"
8     android:padding="16dp"
9     android:theme="@style/ThemeOverlay.AppCompat.Dark">
10
11     <ImageView
12         android:layout_width="@dimen/distance_large"
13         android:layout_height="@dimen/distance_large"
14         android:layout_gravity="start"
15         android:adjustViewBounds="true"
16         android:contentDescription="@string/app_name"
17         android:paddingTop="16dp"
18         android:scaleType="fitXY"
19         android:src="@drawable/ic_canteen_checker_logo" />
20
21     <TextView
22         android:layout_width="match_parent"
23         android:layout_height="wrap_content"
24         android:text="@string/app_name"
25         android:textAppearance="?android:textAppearanceMedium" />

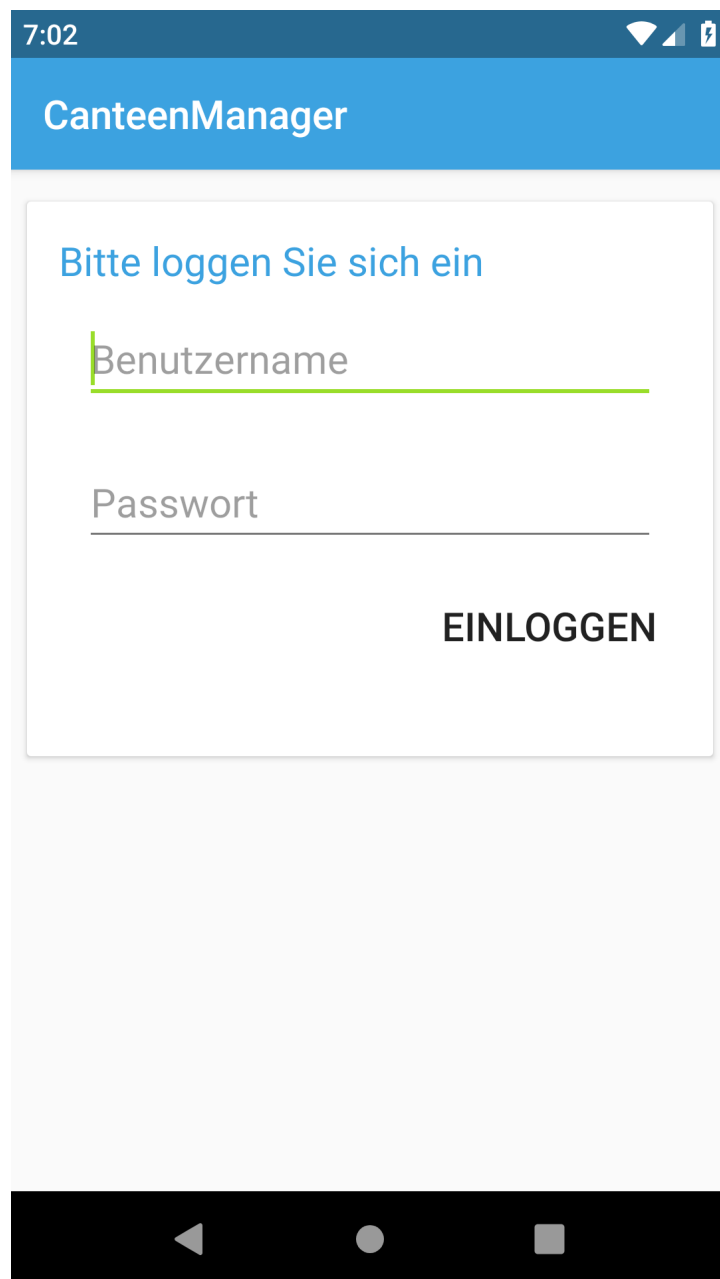
```

26

27 </LinearLayout>

## Kapitel 4

# Tests und Screenshots



The screenshot shows a mobile application interface for 'CanteenManager'. At the top, a blue header bar contains the app name. Below this, a white login card is centered on a light gray background. The card contains the instruction 'Bitte loggen Sie sich ein' in blue, followed by two input fields: 'Benutzername' with a green underline and 'Passwort' with a gray underline. A black 'EINLOGGEN' button is positioned at the bottom right of the card. The device's status bar at the top shows the time as 7:02 and icons for Wi-Fi, signal, and battery. The Android navigation bar is visible at the bottom.

7:02

**CanteenManager**

Bitte loggen Sie sich ein

Benutzername

Passwort

**EINLOGGEN**

Abbildung 4.1: Ansicht des Login

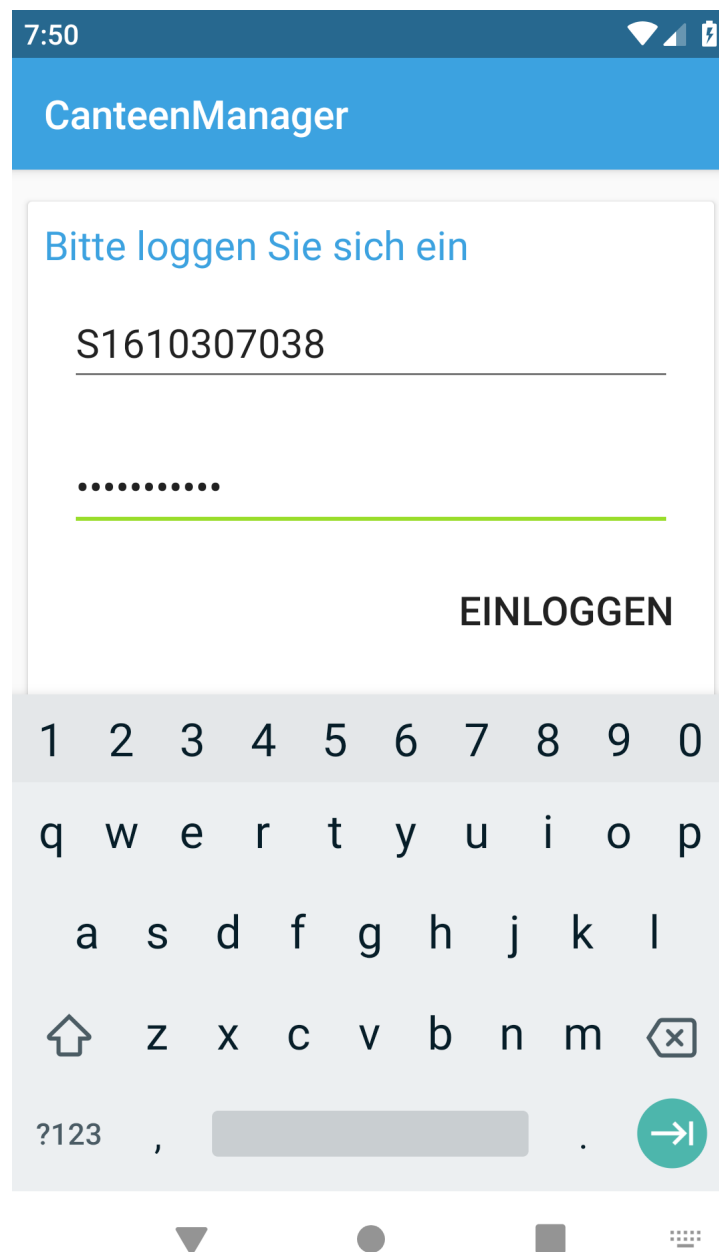
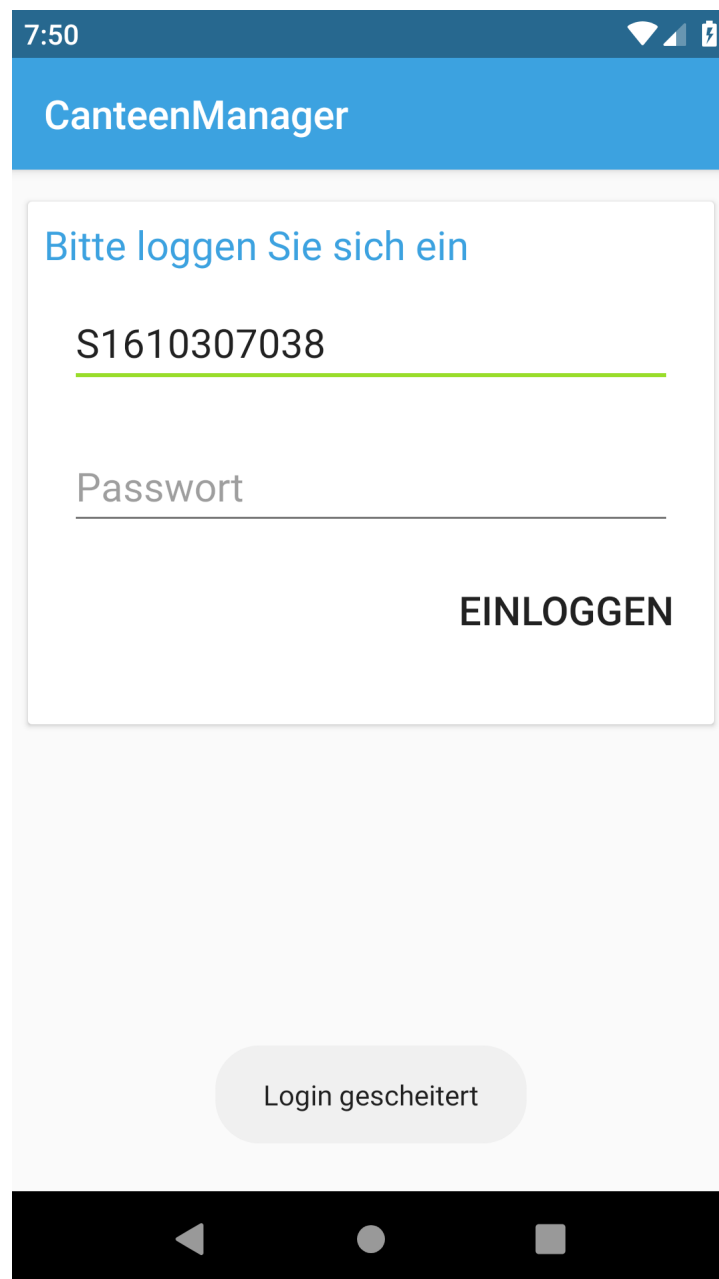


Abbildung 4.2: Login mit eingegebenen Anmeldedaten





**Abbildung 4.3:** Login fehlgeschlagen, Hinweis über Toast unten



**Abbildung 4.4:** Ansicht des oberen Bereichs der Stammdatenverwaltung, Position der Kantine mit rotem Pin



**Abbildung 4.5:** Neuauswahl eines Standorts per grünem Pin, Adresseingabefeld wurde aktualisiert



Abbildung 4.6: Google Maps hat bestimmte Position genau geortet, Pin wieder rot

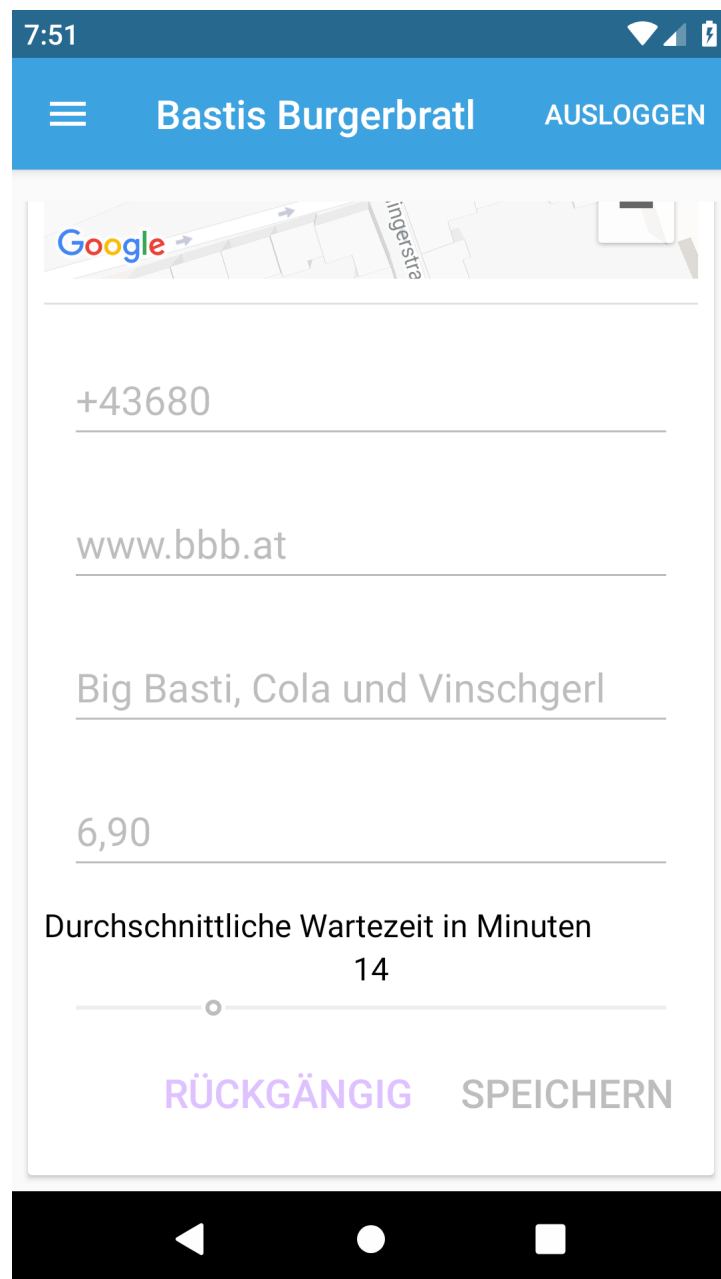


Abbildung 4.7: Gesperrte Eingabelemente nach Druck auf „Speichern,,

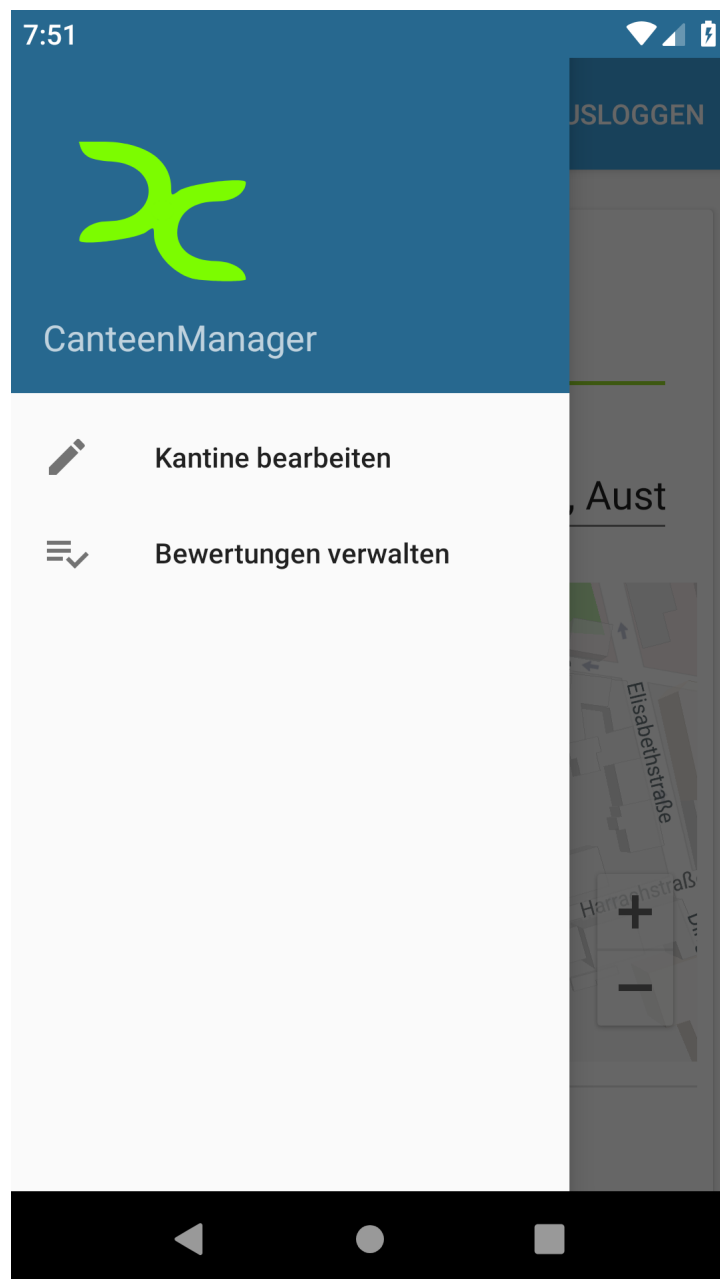


Abbildung 4.8: Ansicht der seitlichen Navigation

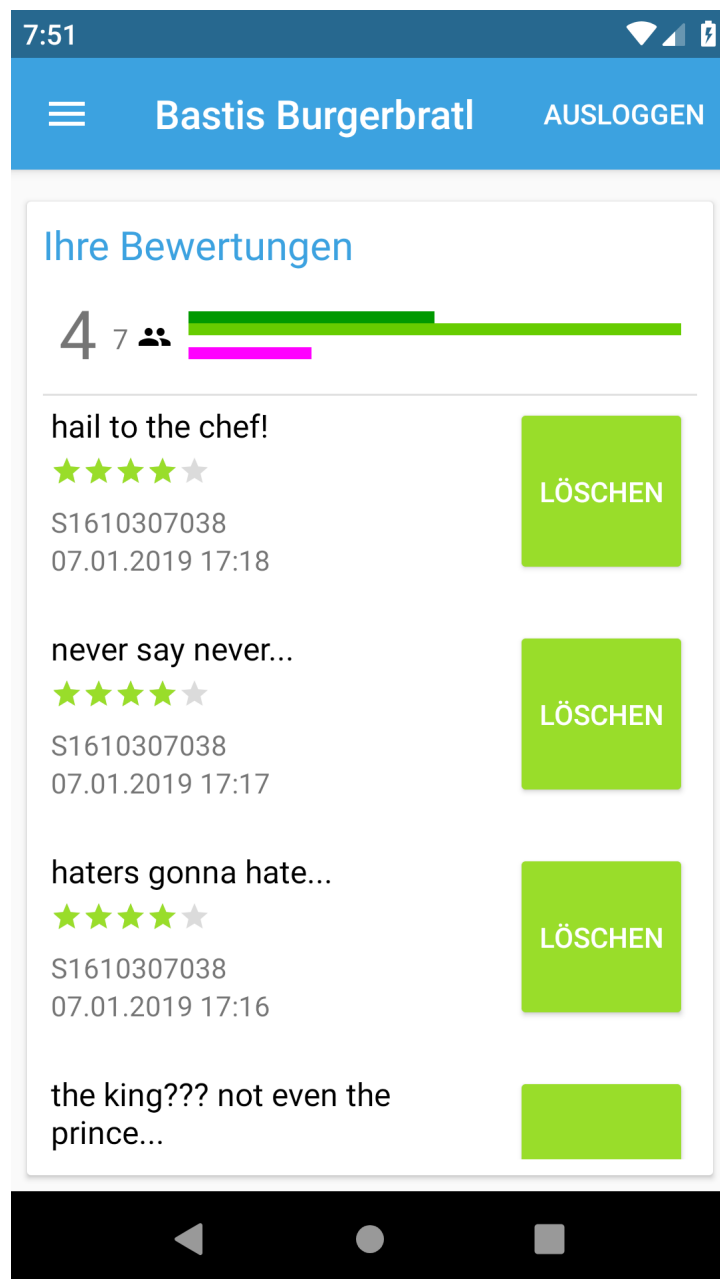


Abbildung 4.9: Ansicht der Ratings mit Review-Statistik

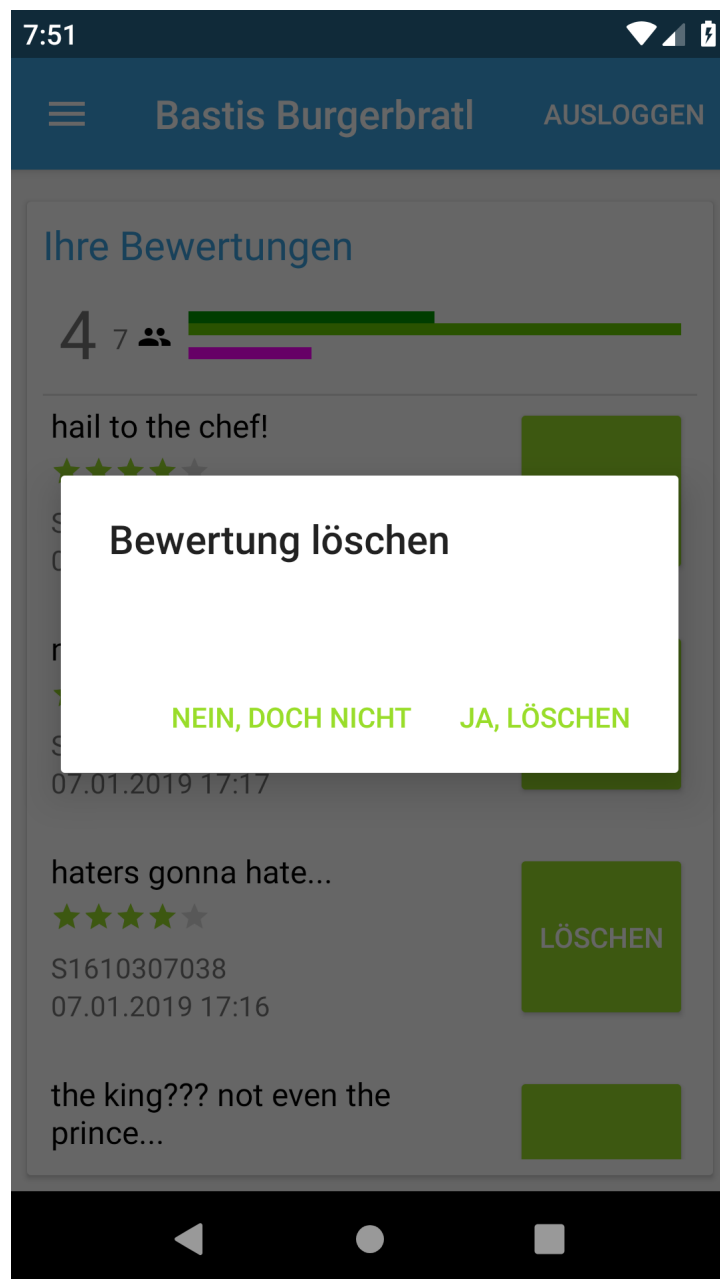


Abbildung 4.10: Ansicht des Bestätigungsdialogs nach Druck auf „Löschen,,