

# **CanteenManager**

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PROJEKTARBEIT

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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 import android.widget.Button;
4
5 public interface IClickedListener {
6     void onClicked(String id, Button button);
7 }
```

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

```

```
123     ProxyRating[] ratings;
124
125     ProxyCanteen(String canteenId, String name, String address, String phone,
126                 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
154 private static class ProxyNewCanteen {
155
156     final int canteenId;
157     final String name;
158
159     final String address;
160     final String phone;
161     final String website;
162
163     final String meal;
164     final float mealPrice;
165
166     final float averageRating;
167     final int averageWaitingTime;
168
169     ProxyNewCanteen(String canteenId, String name, String address, String phone,
170                     String website, String meal, float mealPrice, float
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                     //startActivity(Canteen.Activity.createIntent(LoginActivity.this));
72                     startActivity(MainActivity.createIntent(LoginActivity.this));
73                     setResult(Activity.RESULT_OK);
74                     finish();
75                 } else {
76                     // or not ...
77                     edtPassWord.setText(null);
78                     Toast.makeText(LoginActivity.this, R.string.msg_LoginFailed,
79                         Toast.LENGTH_LONG).show();
80                     setUIEnabled(true);
81                 }
82             }
83         }.execute(edtUserName.getText().toString(), edtPassWord.getText().toString());
84     }
85
86     private void setUIEnabled(boolean enabled) {
87         edtUserName.setEnabled(enabled);
88         edtPassWord.setEnabled(enabled);
89         btnLogIn.setEnabled(enabled);
90     }
91 }
```

```
88     }  
89 }
```

### 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                 }  
47             }  
48         );  
49     }  
50 }  
51  
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);
```

```

93         edtCanteenAddress.addTextChangedListener(new TextWatcher() {
94             @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                     Address address = addresses.get(0);
180
181                     if (address != null) {
182                         edtCanteenAddress.setText(address.getAddressLine(0));
183
184                         if (marker != null) {
185                             marker.remove();
186                         }
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             }); // setOnMapClickListener()
198         }
199     }); // getMapAsync()
200     return view;

```

```

201     }
202
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(String.format("%.2f", canteen.getMealPrice()

```



```
253
254 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         mpfMap.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         float mealPrice;
301         try {
302             mealPrice = Float.parseFloat(edtSetCanteenMealPrice.getText()
303 .toString().replaceAll(",", "."));
304         } catch (Exception e) {
305             mealPrice = this.canteen.getMealPrice();
306         }
307     }
```

```

308         setUIEnabled(false);
309         viwProgress.setVisibility(View.VISIBLE);
310         viwContent.setVisibility(View.GONE);
311         new AsyncTask<Object, Void, Void>() {
312             @Override
313             protected Void doInBackground(Object... objects) {
314                 new ServiceProxy().updateCanteen((String) objects[0],
315                     new Canteen((String) objects[1], (String) objects[2],
316                         (String) objects[3], (String) objects[4],
317                         (String) objects[5], (String) objects[6],
318                         (float) objects[7], (float) objects[8],
319                         (int) objects[9], null));
320                 return null;
321             }
322
323             @Override
324             protected void onPostExecute(Void v) {
325                 new AsyncTask<Void, Void, Canteen>() {
326                     @Override
327                     protected Canteen doInBackground(Void... voids) {
328                         try {
329                             return new ServiceProxy().getCanteen();
330                         } catch (IOException e) {
331                             Log.e(TAG, getString(R.string.msg_LoadingCanteenFailed),
332                                 e);
333                         }
334                         return null;
335                     }
336
337                     @Override
338                     protected void onPostExecute(Canteen canteen) {
339                         if (canteen != null) {
340                             CanteenFragment.this.canteen = canteen;
341                             setUIFields();
342                             updateMap(canteen.getAddress());
343                         } else {
344                             Log.e(TAG, getString(R.string.msg_LoadingCanteenFailed))
345                                 ;
346                         }
347                         setUIEnabled(true);
348                         viwProgress.setVisibility(View.GONE);
349                         viwContent.setVisibility(View.VISIBLE);
350                     }
351                 }.execute();
352             }.execute(
353                 CanteenManagerApplication.getInstance().getAuthenticationToken(),
354                 canteen.getId(),//1
355                 edtCanteenName.getText().toString(),//2
356                 edtCanteenAddress.getText().toString(),//3
357                 edtCanteenPhone.getText().toString(),//4
358                 edtCanteenWeb.getText().toString(),//5
359                 edtSetCanteenMeal.getText().toString(),//6
360                 mealPrice,//7
361                 canteen.getAverageRating(),//8
362                 sbaCanteenSetWaitingTime.getProgress()//9

```

```
363     }
364
365     private void setUIEnabled(boolean enabled) {
366         edtCanteenName.setEnabled(enabled);
367         edtCanteenAddress.setEnabled(enabled);
368         edtCanteenPhone.setEnabled(enabled);
369         edtCanteenWeb.setEnabled(enabled);
370         edtSetCanteenMeal.setEnabled(enabled);
371         edtSetCanteenMealPrice.setEnabled(enabled);
372         sbaCanteenSetWaitingTime.setEnabled(enabled);
373         btnCanteenSave.setEnabled(enabled);
374         btnChangesRevert.setEnabled(enabled);
375     }
376
377 }
```

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

```

```

        broadcastReceiver,
94         MyFirebaseMessagingService.createCanteenChangedIntentFilter());
95
96         updateRatings();
97
98         return view;
99     }
100
101     @Override
102     public void onDestroyView() {
103         super.onDestroyView();
104
105         LocalBroadcastManager.getInstance(getActivity()).unregisterReceiver(
        broadcastReceiver);
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, final Button button) {
136         if (CanteenManagerApplication.getInstance().isAuthenticated()) {
137             button.setEnabled(false);
138             //authenticated
139             final View view = LayoutInflater.from(getActivity()).inflate(R.layout.
        dialog_delete_rating, null);
140             new AlertDialog.Builder(getActivity())
141                 .setTitle(R.string.dlgDeleteRating_title)
142                 .setView(view)
143                 .setNegativeButton(R.string.dlgDeleteRating_negativeButton, new
        DialogInterface.OnClickListener() {
144                     @Override
145                     public void onClick(DialogInterface dialog, int which) {

```

```

146         dialog.dismiss();
147         button.setEnabled(true);
148     }
149 })
150     .setPositiveButton(getString(R.string.
dlgDeleteRating_positiveButton), new DialogInterface.OnClickListener() {
151         @Override
152         public void onClick(DialogInterface dialog, int which) {
153             dialog.dismiss();
154             new AsyncTask<String, Void, Boolean>() {
155                 @Override
156                 protected Boolean doInBackground(String... strings)
157             {
158                 try {
159                     return new ServiceProxy().deleteRating(
strings[0], ratingId);
160                 } catch (IOException e) {
161                     Log.e(TAG, "Review creation failed", e);
162                 }
163                 return null;
164             }
165             @Override
166             protected void onPostExecute(Boolean b) {
167                 Toast.makeText(getActivity(),
b ? getString(R.string.msg_ratingDeleted
168 ) : getString(R.string.msg_ratingNotDeleted),
Toast.LENGTH_SHORT).show();
169             }
170         }.execute(
CanteenManagerApplication.getInstance().
171 getAuthenticationToken()
172 );
173     }
174 }
175 })
176 .create()
177 .show();
178 } else {
179     //not authenticated
180     startActivityForResult(LoginActivity.createIntent(getActivity()),
LOGIN_FOR_REVIEW_DELETION);
181 }
182 }
183 }
184
185 private static class RatingsAdapter extends RecyclerView.Adapter<RatingsAdapter.
ViewHolder> {
186
187     private IClickedListener clickedListener;
188
189     public RatingsAdapter(IClickedListener cl) {
190         super();
191         if (cl != null) {
192             clickedListener = cl;
193         }
194     }
195 }

```

```

196     static class ViewHolder extends RecyclerView.ViewHolder {
197         private final TextView txvUserName = itemView.findViewById(R.id.
txvUserName);
198         private final TextView txvRemark = itemView.findViewById(R.id.txvRemark)
;
199         private final RatingBar rtbRating = itemView.findViewById(R.id.rtbRating
);
200         private final TextView txvTimestamp = itemView.findViewById(R.id.
txvTimestamp);
201         private final Button btnDelete = itemView.findViewById(R.id.btnDelete);
202
203         private IClickedListener clickedListener;
204
205         public ViewHolder(View itemView) {
206             super(itemView);
207         }
208     }
209
210     @Override
211     public ViewHolder onCreateViewHolder(ViewGroup parent, int viewType) {
212         View view = LayoutInflater.from(parent.getContext())
                .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(), holder.btnDelete
);
231                 }
232             }
233         });
234     }
235 }
236
237 private final List<Rating> ratingList = new ArrayList<>();
238
239 void displayRatings(Collection<Rating> ratings) {
240     ratingList.clear();
241     if (ratings != null) {
242         ratingList.addAll(ratings);
243     }
244     notifyDataSetChanged();
245 }
246

```

```
247         @Override
248         public int getItemCount() {
249             return ratingList.size();
250         }
251     }
252
253 }
```

### 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 private final BroadcastReceiver broadcastReceiver = new BroadcastReceiver() {
49     @Override
50     public void onReceive(Context context, Intent intent) {
51         String canteenId = getCanteenId();
52         if (canteenId != null && canteenId.equals(MyFirebaseMessagingService.
53             extractCanteenId(intent))) {
54             updateReviews();
55         }
56     }
57 };
58
59 @Nullable
60 @Override
61 public View onCreateView(LayoutInflater inflater, @Nullable ViewGroup container,
62     Bundle savedInstanceState) {
63     View view = inflater.inflate(R.layout.fragment_reviews, container, false);
64     txvAverageRating = view.findViewById(R.id.txvAverageRating);
65     rtbAverageRating = view.findViewById(R.id.rtbAverageRating);
66     txvTotalRatings = view.findViewById(R.id.txvTotalRatings);
67     viwRatingOne = view.findViewById(R.id.viwRatingsOne);
68     viwRatingTwo = view.findViewById(R.id.viwRatingsTwo);
69     viwRatingThree = view.findViewById(R.id.viwRatingsThree);
70     viwRatingFour = view.findViewById(R.id.viwRatingsFour);
71     viwRatingFive = view.findViewById(R.id.viwRatingsFive);
72
73     LocalBroadcastManager.getInstance(getActivity())
74         .registerReceiver(broadcastReceiver, MyFirebaseMessagingService.
75             createCanteenChangedIntentFilter());
76
77     updateReviews();
78
79     return view;
80 }
81
82 @Override
83 public void onDestroyView() {
84     super.onDestroyView();
85
86     LocalBroadcastManager.getInstance(getActivity()).unregisterReceiver(
87         broadcastReceiver);
88 }
89
90 private String getCanteenId() {
91     return getArguments().getString(CANTEEN_ID_KEY);
92 }
93
94 private void updateReviews() {
95     new AsyncTask<String, Void, ReviewData>() {
96         @Override
97         protected ReviewData doInBackground(String... strings) {
98             try {
99                 return new ServiceProxy().getReviewsDataForCanteen(strings[0]);
100             } catch (IOException e) {
101                 Log.e(TAG, "");
102                 return null;
103             }
104         }
105     }.execute();
106 }

```

```

101     }
102
103     @Override
104     protected void onPostExecute(ReviewData reviewData) {
105         if (reviewData != null) {
106             txvAverageRating.setText(String.format("%.2f", reviewData.
getAverageRating()));
107             txvTotalRatings.setText(NumberFormat.getNumberInstance().format(
reviewData.getTotalRatings()));
108             rtbAverageRating.setRating(reviewData.getAverageRating());
109             setWeight(viwRatingOne, reviewData.getRatingsOne(), reviewData.
getTotalRatingsOfMostCommonGrade());
110             setWeight(viwRatingTwo, reviewData.getRatingsTwo(), reviewData.
getTotalRatingsOfMostCommonGrade());
111             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="horizontal">
85
86         <TextView
87             android:id="@+id/txvCanteenWaitingTimeLabel"
88             style="@style/cmTextView"
89             android:layout_width="wrap_content"
90             android:text="@string/txvCanteenWaitingTimeLabel_text" />
91
92         <TextView
93             android:id="@+id/txvCanteenWaitingTime"
94             style="@style/cmTextView"
95             android:layout_width="wrap_content"
96             android:textAlignment="center" />
97
98     </LinearLayout>
99
100    <SeekBar
101        android:id="@+id/sbaCanteenWaitingTime"
102        style="@style/Widget.AppCompat.SeekBar"
103        android:layout_width="match_parent"
104        android:layout_height="wrap_content"
105        android:layout_marginBottom="@dimen/distance_small"
106        android:max="60"
107        android:progress="4" />
108
109    <LinearLayout
110        android:layout_width="match_parent"
111        android:layout_height="wrap_content"
112        android:gravity="end"
113        android:orientation="horizontal">
114
115        <Button
116            android:id="@+id/btnChangesRevert"
117            style="@style/cmSecondaryButton"
118            android:textColor="@color/colorAccent"
119            android:layout_marginBottom="8dp"
120            android:text="@string/btnChangesRevert_text" />
121
122        <Button
123            android:id="@+id/btnCanteenSave"
124            style="@style/cmButton"
125            android:layout_marginBottom="@dimen/distance_small"
126            android:text="@string/btnCanteenSave_text" />

```

```

127
128         </LinearLayout>
129
130     </LinearLayout>
131     </android.support.v7.widget.CardView>
132 </FrameLayout>
133 </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"
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_tv_x_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

```

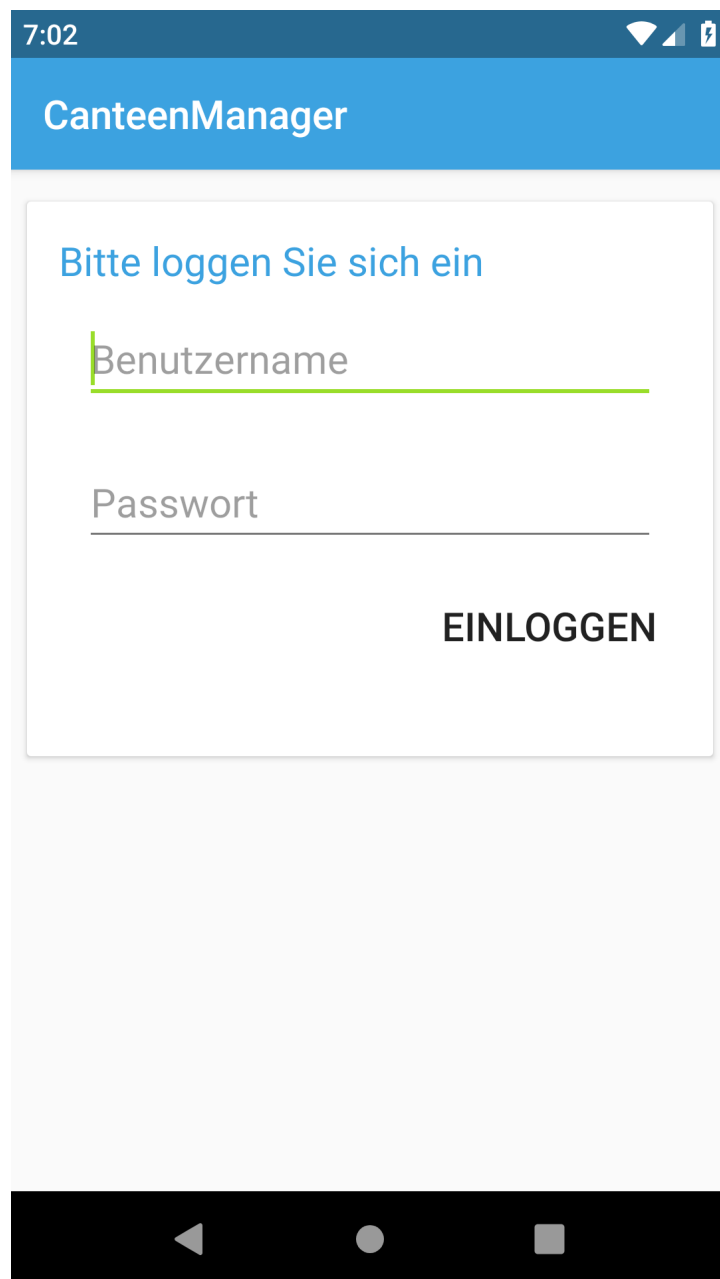
1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3     android:layout_width="match_parent"
4     android:layout_height="192dp"
5     android:background="@color/colorPrimary"
6     android:gravity="bottom"
7     android:orientation="vertical"
8     android:padding="16dp"
9     android:theme="@style/ThemeOverlay.AppCompat.Light">

```

```
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:textAppearanceLargeInverse" />
26
27 </LinearLayout>
```

## Kapitel 4

# Tests und Screenshots



The screenshot shows a mobile application interface for 'CanteenManager'. At the top, a dark blue status bar displays the time '7:02' and icons for Wi-Fi, cellular signal, and battery. Below this is a blue header bar with the text 'CanteenManager' in white. The main content area is a white card with a light gray border. Inside the card, the text 'Bitte loggen Sie sich ein' is displayed in blue. Below this, there are two input fields: 'Benutzername' with a green underline and 'Passwort' with a gray underline. To the right of the 'Passwort' field is a button labeled 'EINLOGGEN' in bold black text. The bottom of the screen shows a black Android navigation bar with back, home, and recent apps icons.

Abbildung 4.1: Ansicht des Login

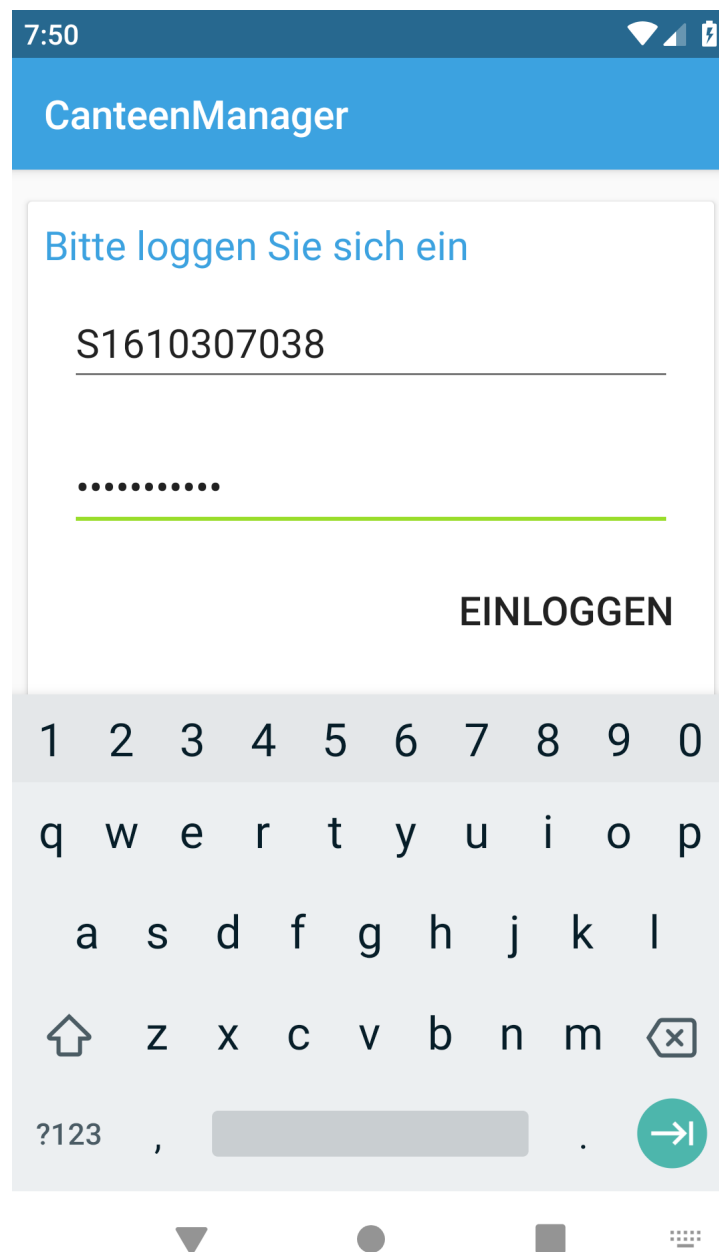
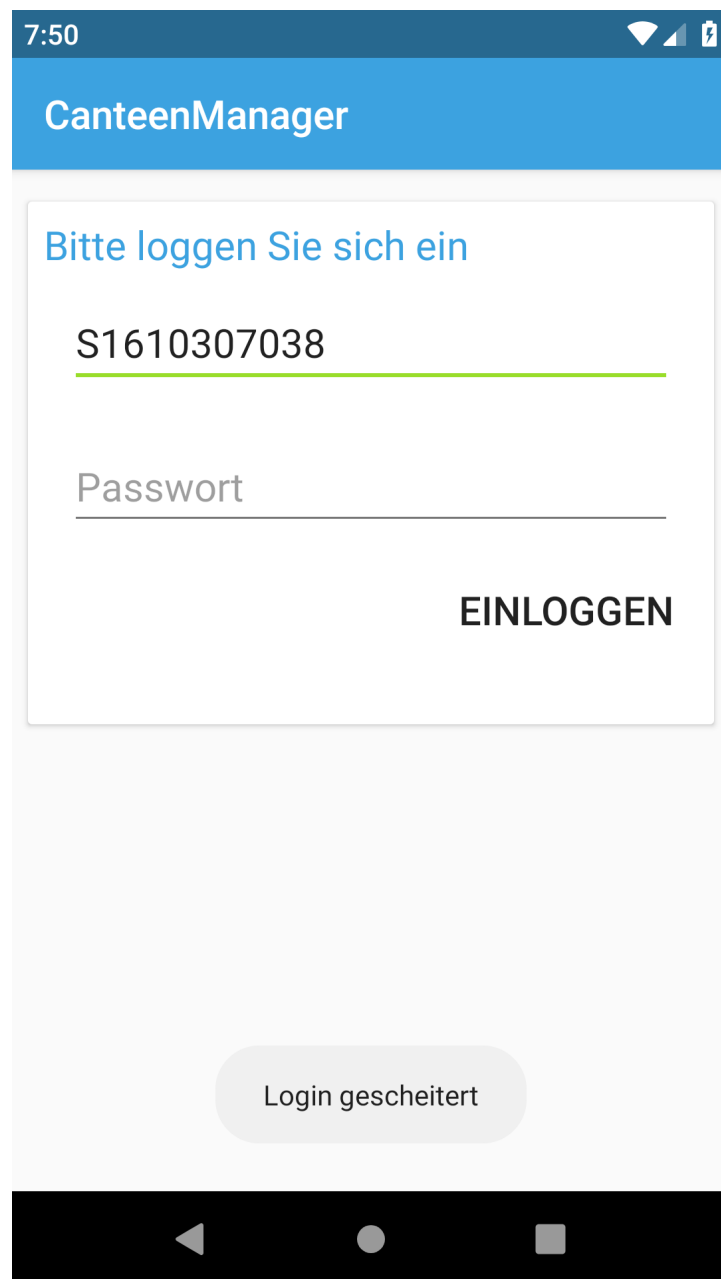


Abbildung 4.2: Login mit eingegebenen Anmeldedaten





**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

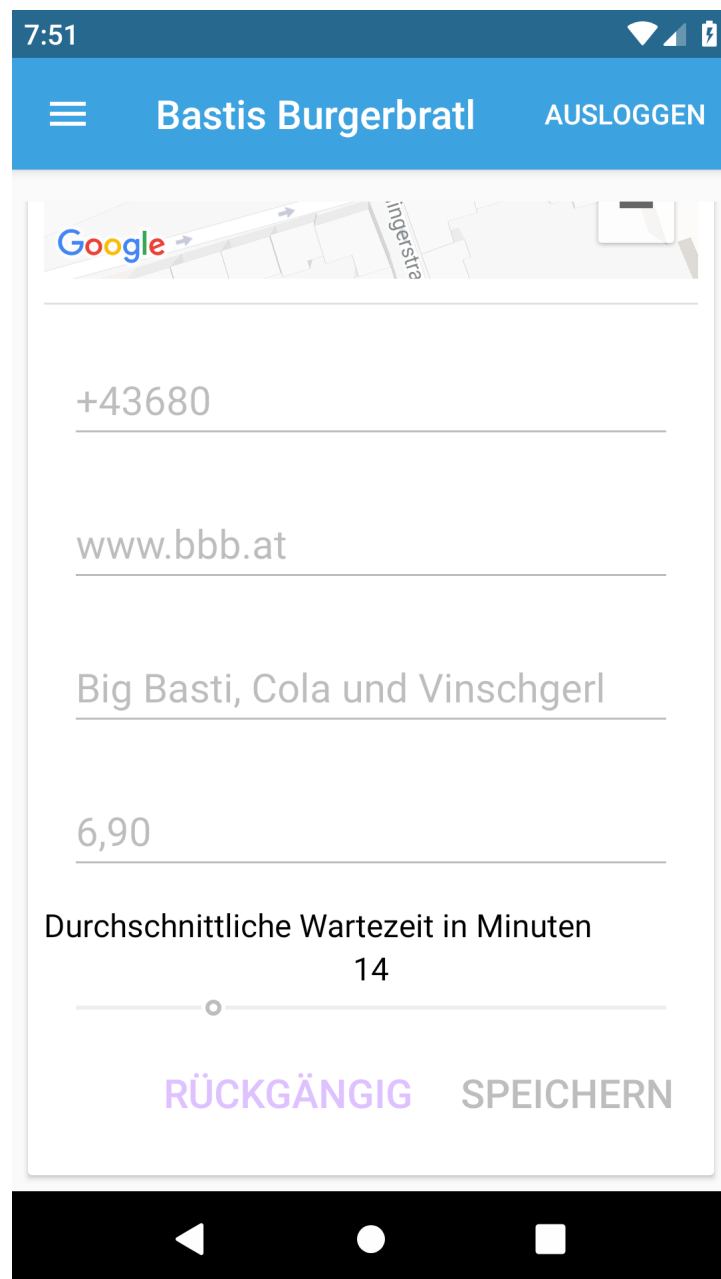


Abbildung 4.7: Gesperrte Eingabeelemente nach Druck auf „Speichern,,

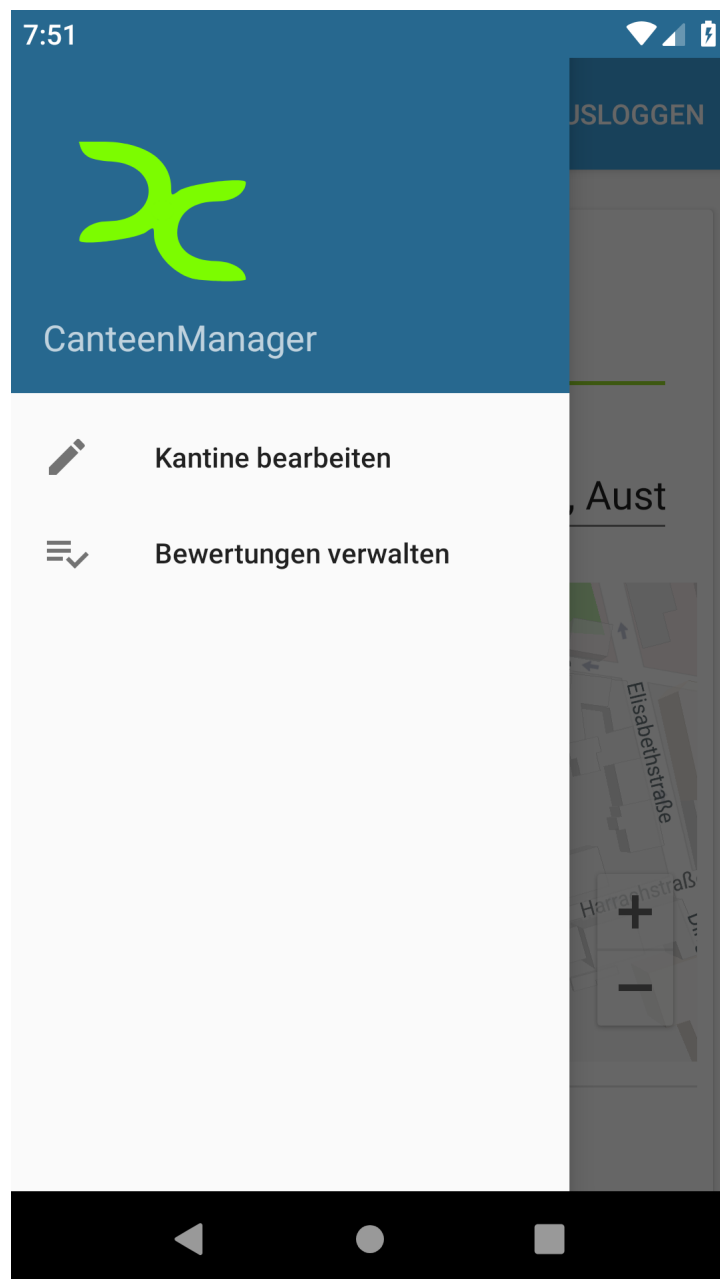


Abbildung 4.8: Ansicht der seitlichen Navigation

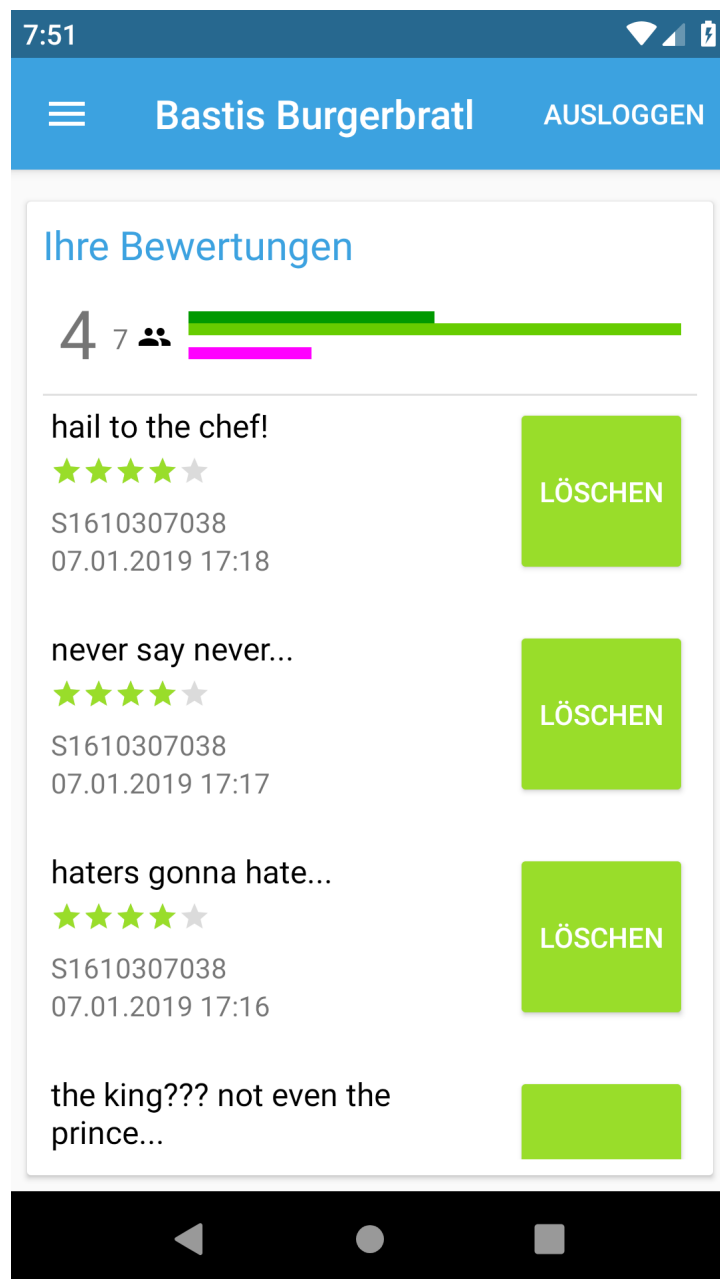


Abbildung 4.9: Ansicht der Ratings mit Review-Statistik

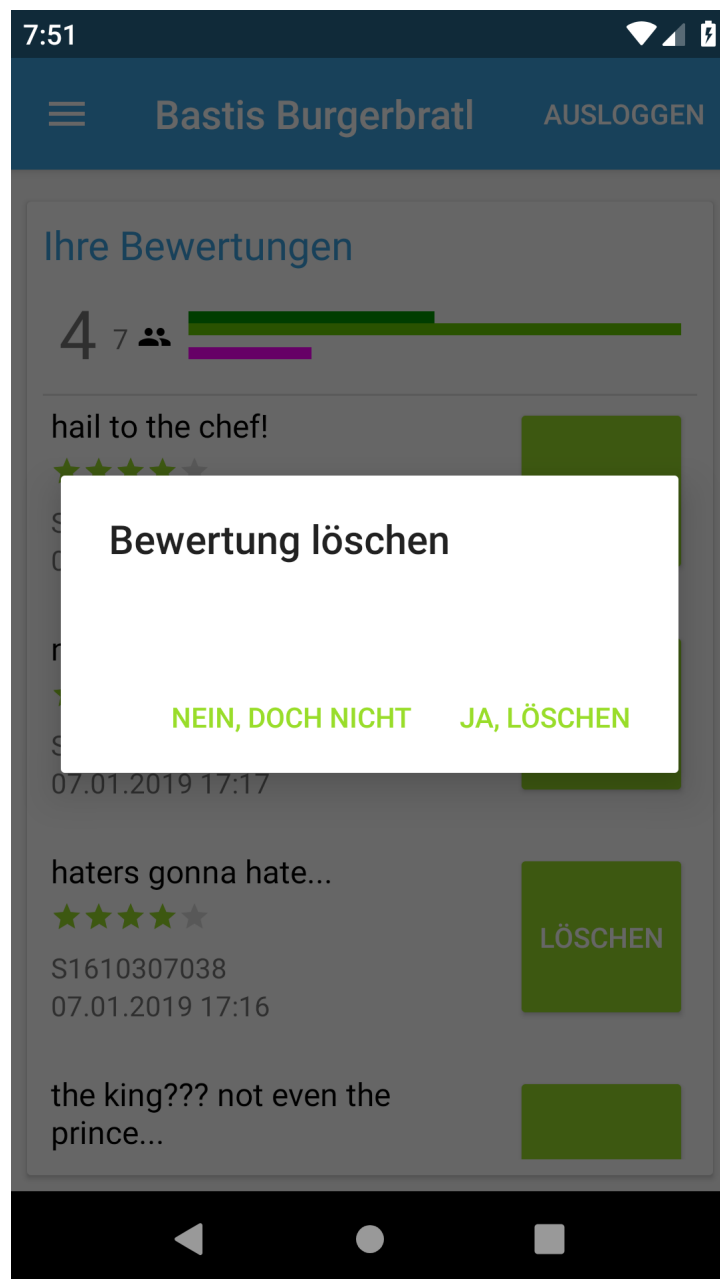


Abbildung 4.10: Ansicht des Bestätigungsdialogs nach Druck auf „Löschen,,