

Application Development for Mobile and Ubiquitous Computing

Mensa+

End Presentation

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Application Scenario

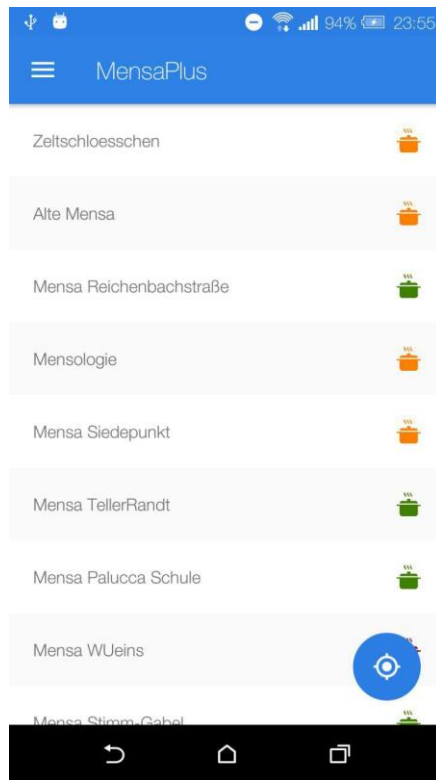
Mensa Application

- check mensa traffic
- check menu
- edit food preferences
- (in the future) check card balance



Current Result

Main Screen



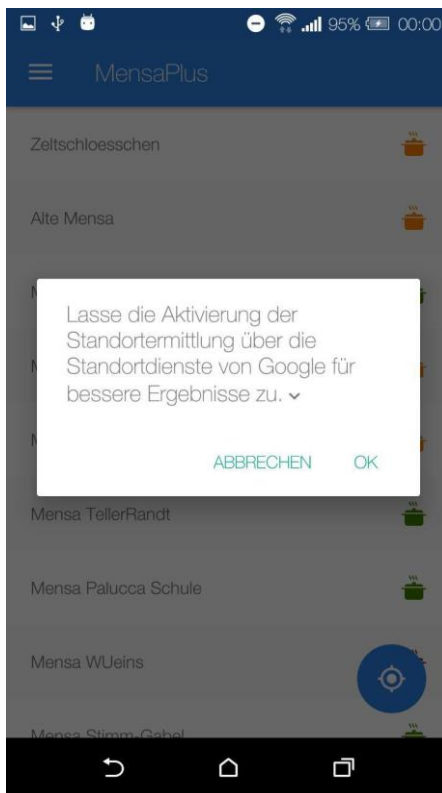
Main Screen



Sidebar

Current Result

Check-in function



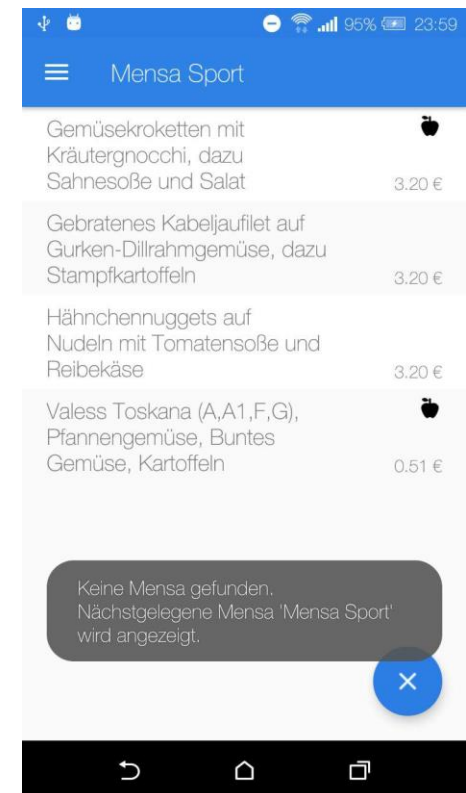
GPS available?

27.01.17



Checked-in

Group 09 – Final Presentation

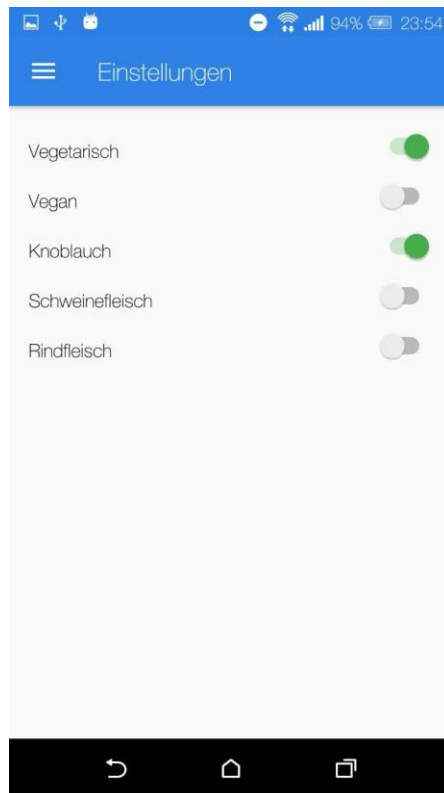


Not in a canteen

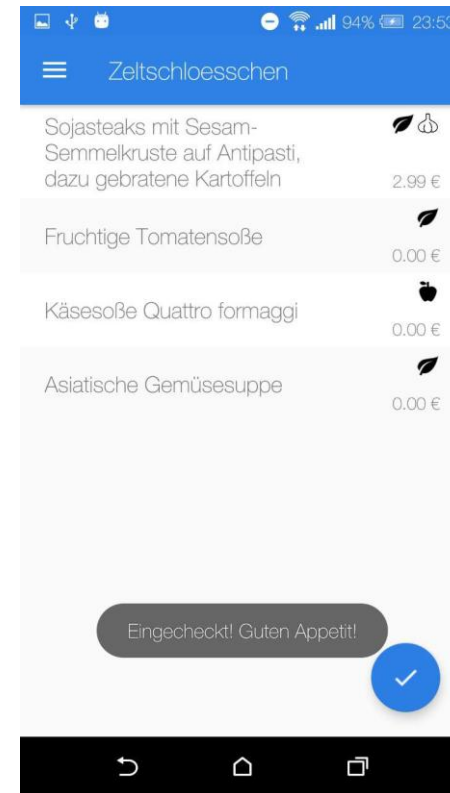
Folie 4 von 12

Current Result

User Preferences

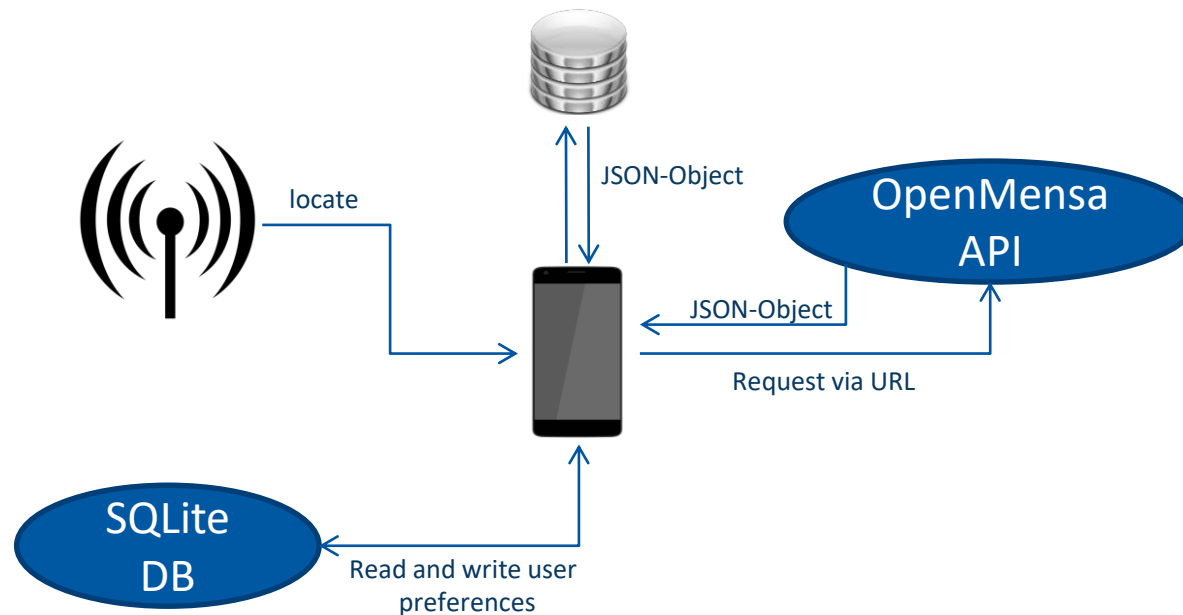


Set Preferences



Applied

Architecture



Technologies

- Android SDK
- OpenMensa API
- Location:
 - Google Play Services
- File Storage:
 - JSON
 - SQLite
 - Rest API

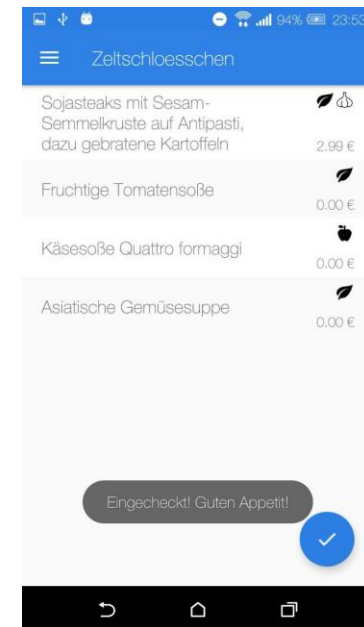


Challenges

- Usability Challenge
 - clean intuitive user interface
 - checking in automatically opens the respective menu
- Connectivity Challenge
 - Down-/Uploading only small JSON Files
- Energy Challenge
 - GPS usage only on demand using an Floating Action Button
 - disabled completely on low battery

Adaptation example – User Preferences

- User sets his preferences
- Meal Activity hides unwanted meals



Adaptation example – BatteryManager

- User has low battery

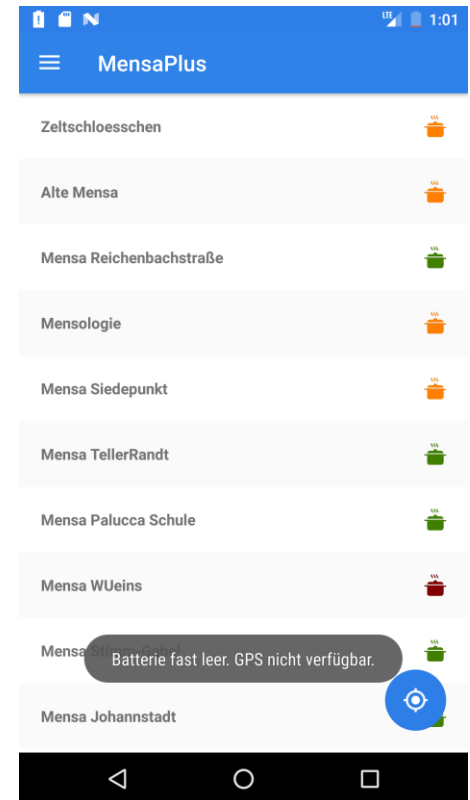
→ GPS function is disabled

```

@Override
public boolean checkGpsSettings (LocationRequest mLocationRequest, GoogleApiClient mGoogleApiClient, final Context context){
    final Activity activity = (Activity) context;
    LocationSettingsRequest.Builder builder = new LocationSettingsRequest.Builder()
        .addLocationRequest (mLocationRequest);

    PendingIntent<LocationSettingsResult> result = LocationServices.SettingsApi.checkLocationSettings(mGoogleApiClient, builder.build());

    if (batteryLow(context)) {
        Toast.makeText(context, "Batterie fast leer. GPS nicht verfügbar.", Toast.LENGTH_SHORT).show();
        return false;
    }
}
    
```



Open Tasks

- tackle Offline challenge
 - cache menus
- implement NFC functionality
- improve accuracy of canteen capacities

Lessons learnt

- Introduction into Android development
- appreciate StackOverflow
- Time management is hard



Thank you for your attention.