TECHNISCHE UNIVERSITÄT DRESDEN

Department of Computer Science Institute for System Architecture, Chair for Computer Networks

Application Development for Mobile and Ubiquitous Computing

Seminar Task

Final Presentation

Group No. 5

Team: Franz Nieschalk, Felix Wenzel

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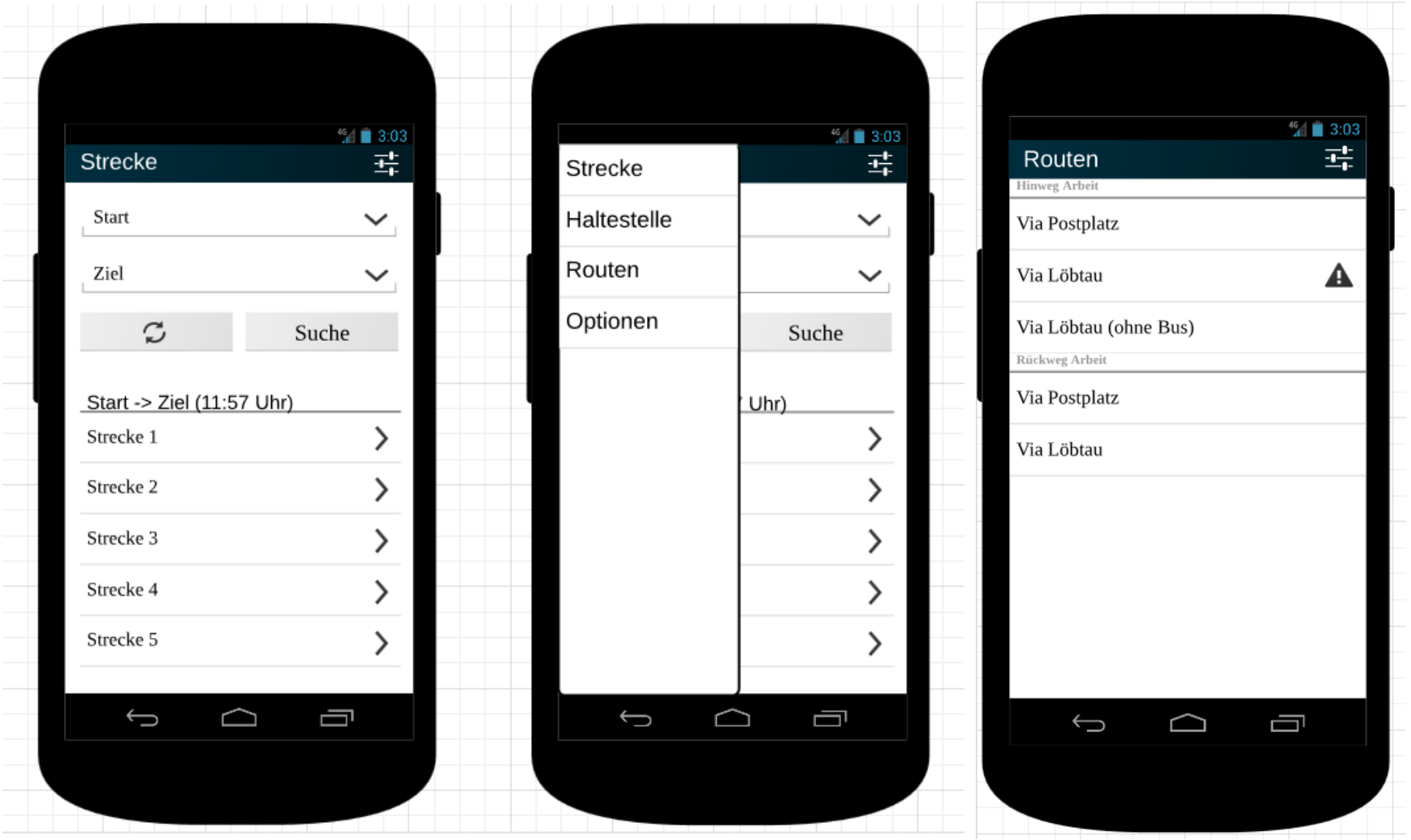
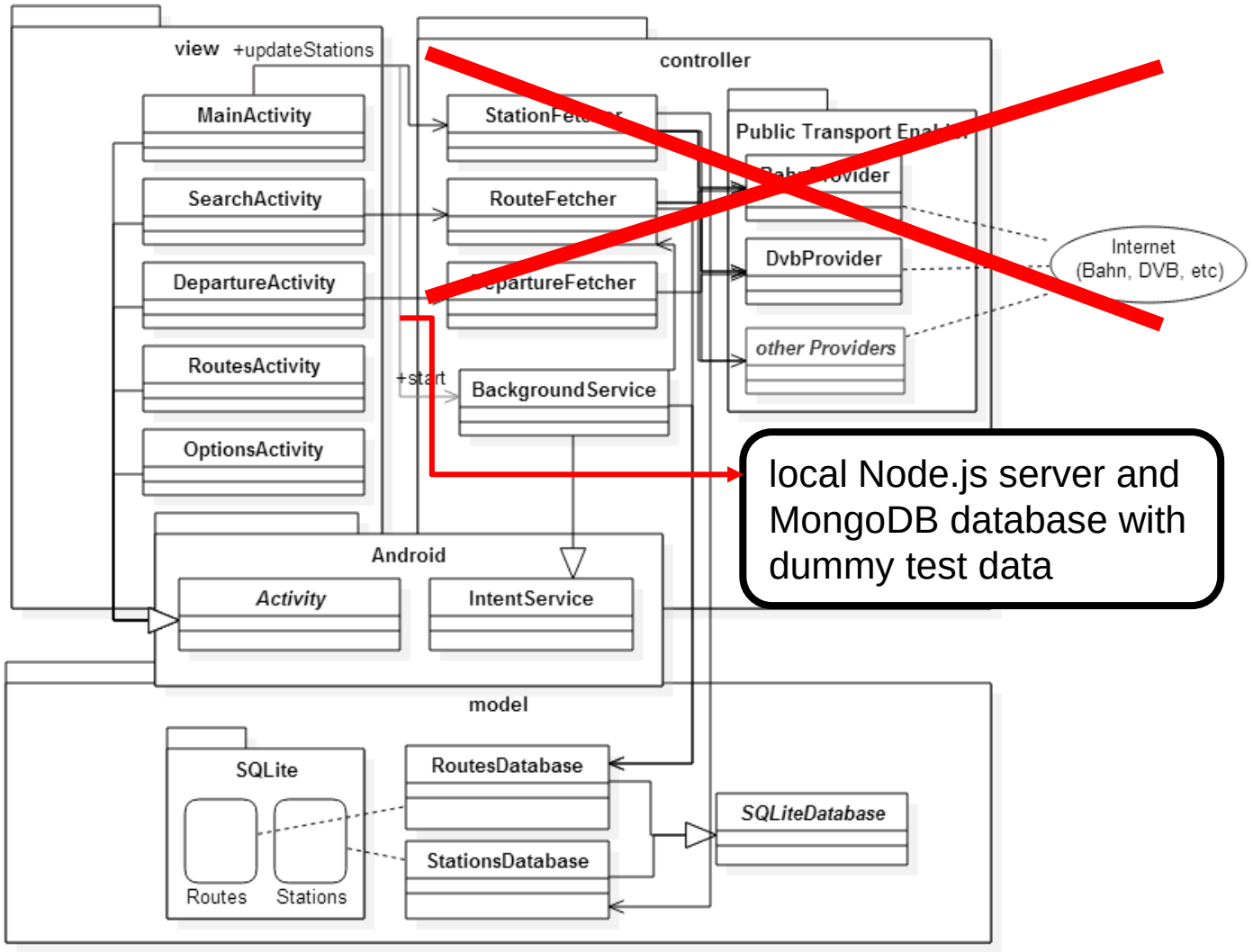
Retrospection - Original Plans



Retrospection - Changes



Context and Adaptation Concepts

- **time**: first start / weekly ->
  caching: station IDs for search terms

- **time**: intervals that depend on saved routes ->
  prefetching: updated route information

- **connection type**: detect WIFI or mobile data ->
  prioritizing: if mobile data, cache early routes first

Caching of station IDs

- **why needed?**
  the "PublicTransportEnabler" library needed station IDs for basically every request

- **context detection**
  set up an "AlarmManager" repeating alarm (weekly) but check on startup if it is already set

- **implementation**
  request all stations and save their IDs and names in the local SQLite database

Prefetching of routes

- **why needed?**
  favorite routes should be available when needed

- **context detection**
  again using the “AlarmManager”, but times of intervals depend on the groups the routes are organized in (an hour before the first route time)

- **implementation**
  request the routes again and compare if there are problems (a bus is late, e.g.) on a route, if so send a notification

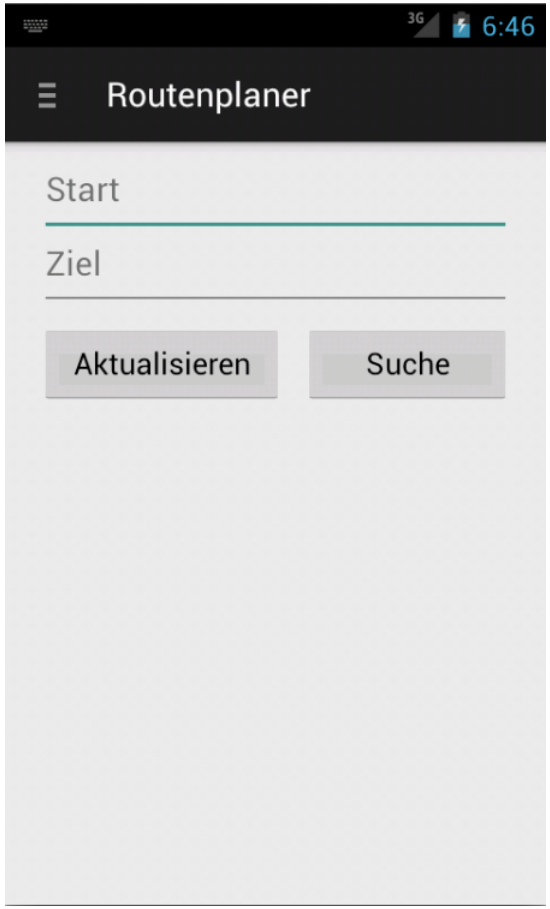
Prioritizing route checks

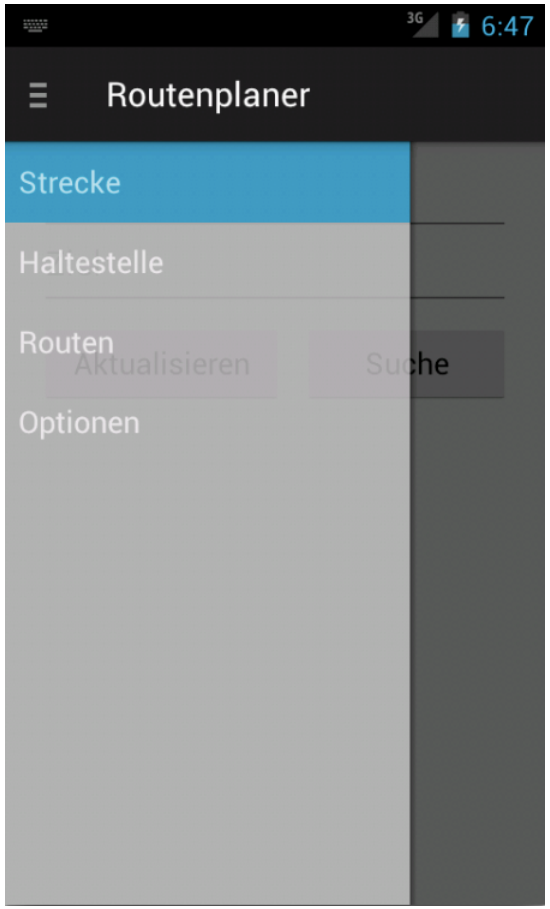
- **why needed?**
  to request the next needed routes first

- **context detection**
  using the “ConnectivityManager” to determine if the connection type (WIFI is considered to be fast than mobile)

- **implementation**
  resort request the depending on the current time, that means next routes check their status first

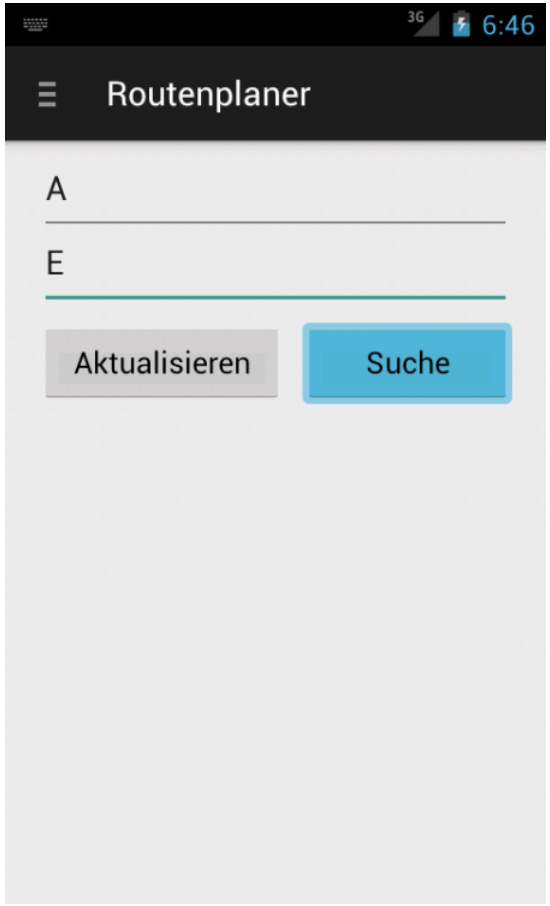
Prototype – Navigation

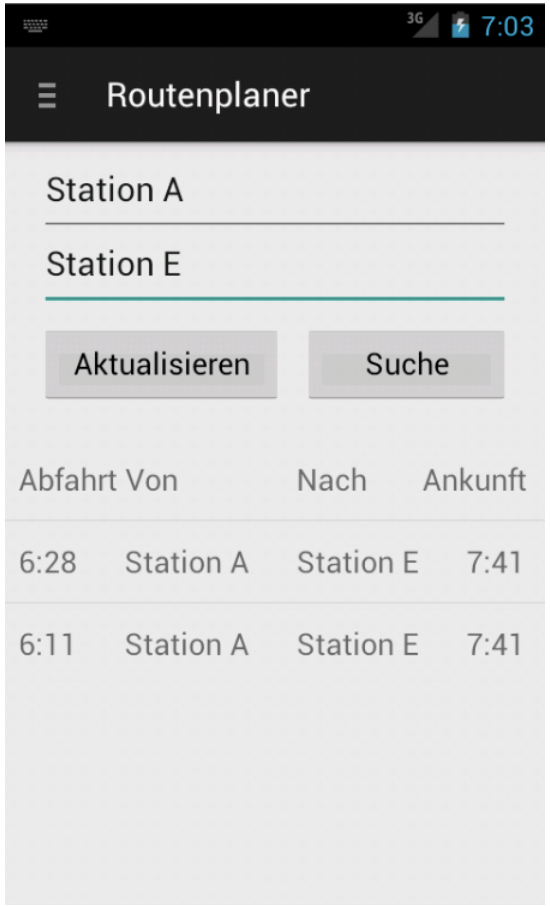


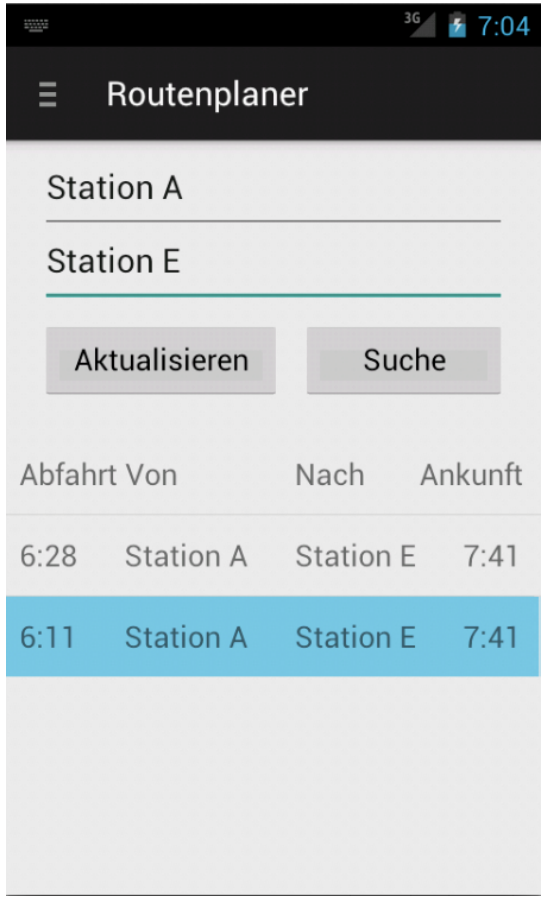


- 4 categories reached via navigation drawer

Prototype – Find routes

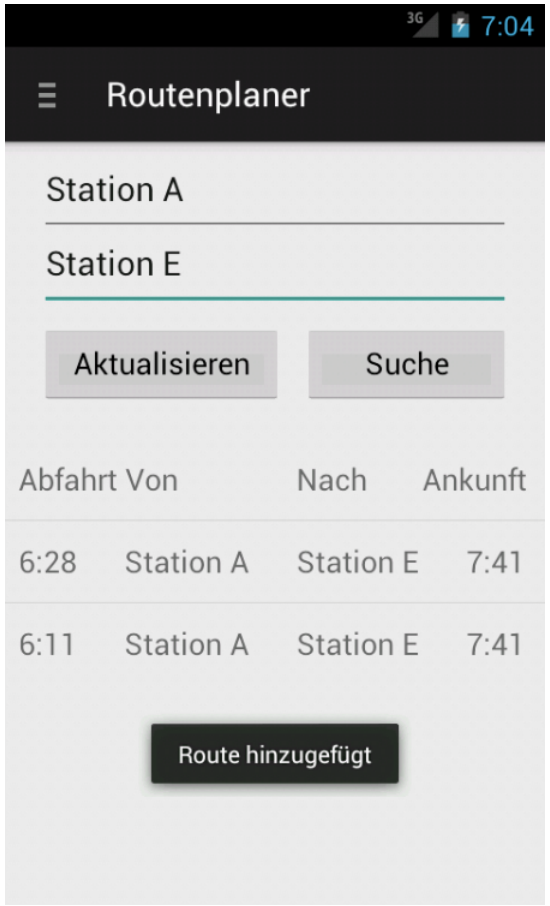






- autocomplete for station names and list of results

Prototype – Organize routes



- found routes can be saved and sorted into groups

Discussion

Features that still need improvement…

- use a real content provider instead of test server
- views should show more detailed results, e.g. the type of vehicles (bus, tram, train)
- generally more user options
- tablet-optimized UI

Possible extensions:

- use location for prioritizing
- find nearby stations by location