TECHNISCHE UNIVERSITÄT DRESDEN

DRESDEN concept

Application Development for Mobile and

Ubiquitous Computing

SEMINAR TASK

ADAPTION CONCEPT PRESENTATION

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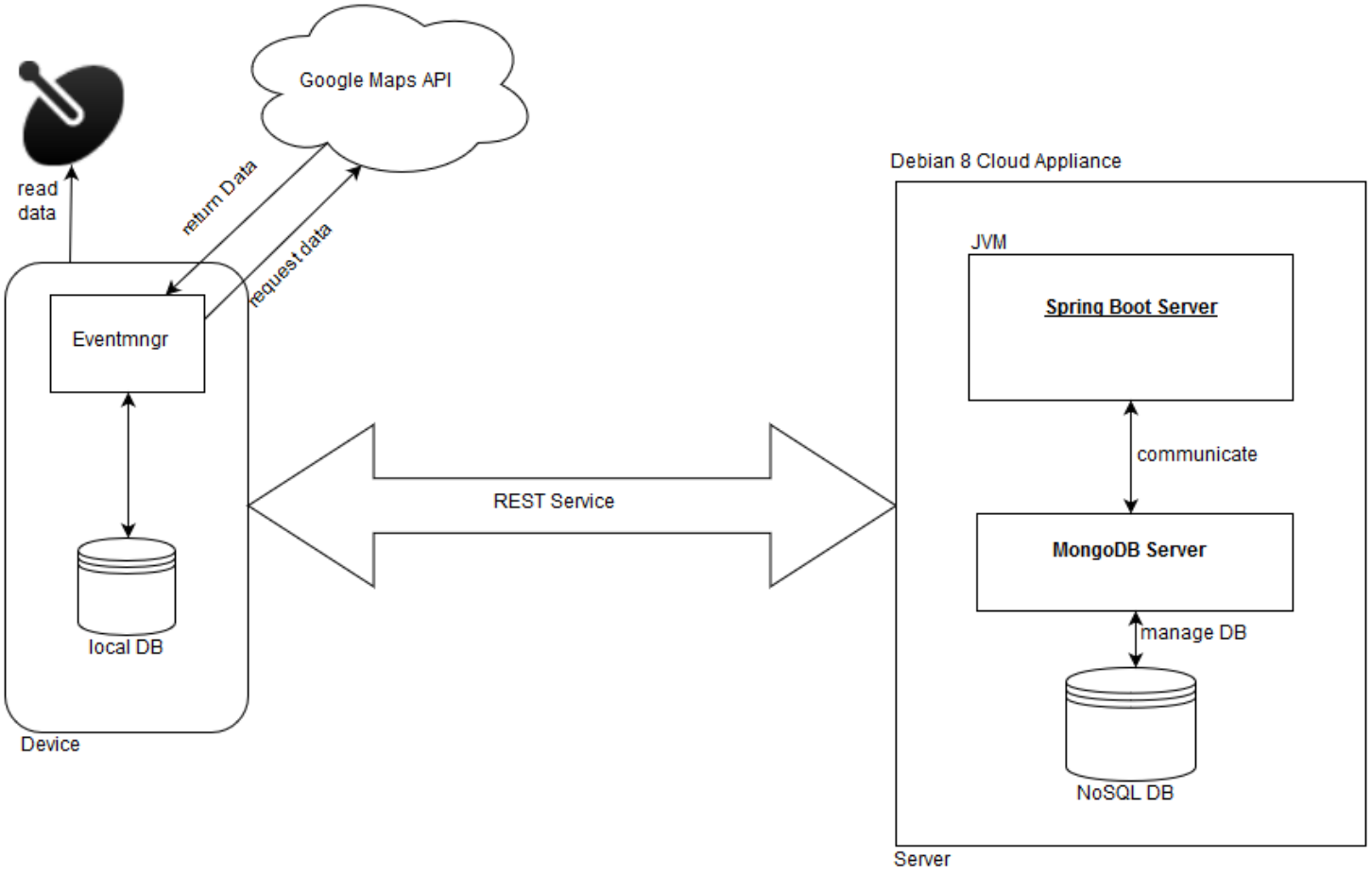
Dresden, 16. Dezember 2016

EventManagr

Architecture



Technologies

Spring Boot and Data Framework

- Database Management
- Delivers REST API

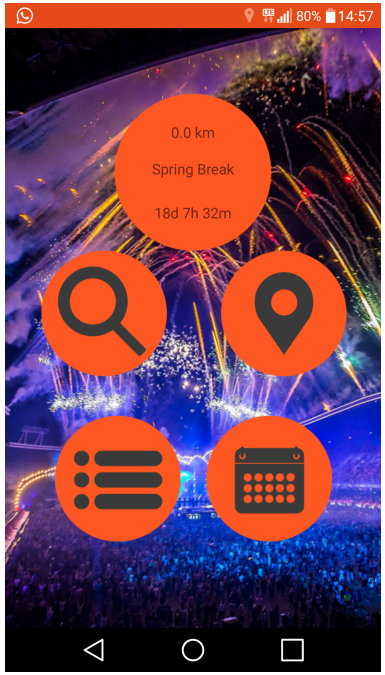
Location Tracking

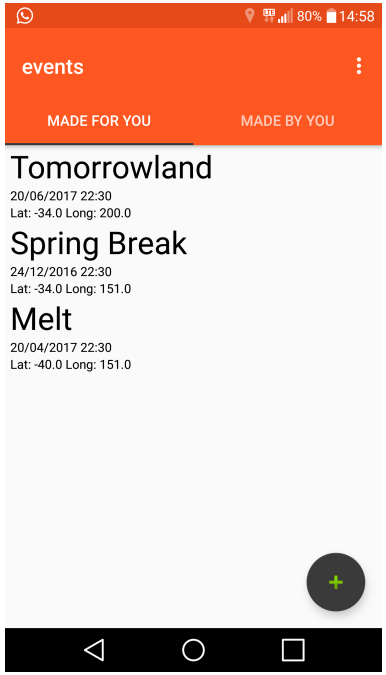
- GPS, WiFi, GSM
- Google Maps

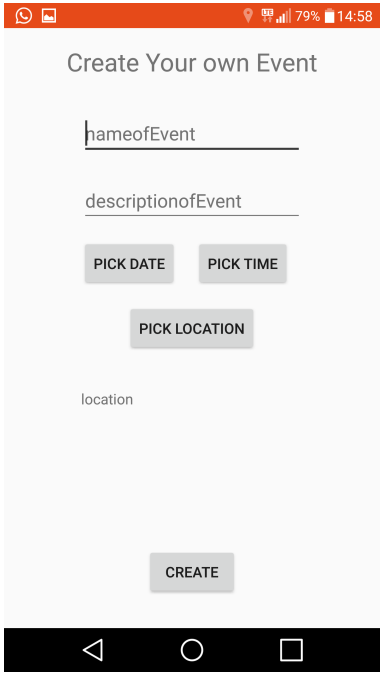
Development

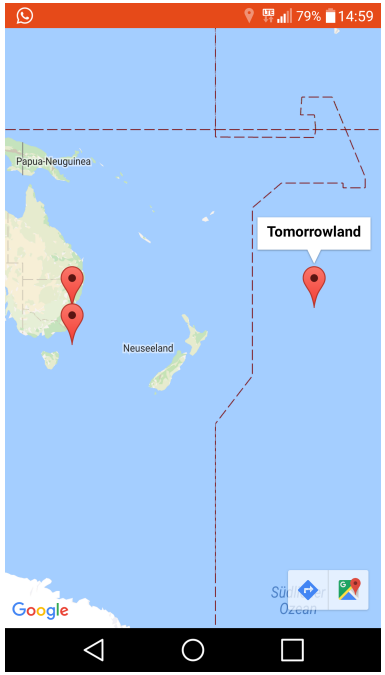
- Android SDK
- Java JDK
- Android Studio IDE
- IntelliJ IDEA

Current state









current contexts and adaptions

Location context

- get location via GPS/Network
- use of Android LocationManager class to process raw data
- Google Maps to process location data
- index event database by location

Offline Challenge

- cache events on mobile phone
- pick location while offline
- show event map offline (as far as map was loaded)

current contexts and adaptions

Battery Life/Energy consumptions

- only fetch nearby events
- auto fetch/refresh only for own events
- low level energy: fetch events in lower frequency (only refresh events that you could addend
- higher level: fetch events on regular base

```
int level = batteryStatus.getIntExtra(BatteryManager.EXTRA_LEVEL, -1);
int scale = batteryStatus.getIntExtra(BatteryManager.EXTRA_SCALE, -1);
float batteryPct = level / (float)scale;
```

Data Traffic

- run data intensive tasks on server

current contexts and future adaptions

Offline Challenge

- rate offline
- notify about next event

Connectivity

- manage data by connection type
- on wifi: auto fetch all saved future events (refresh on regular basis)
- on mobile network: fetch only nearby events (auto fetch less frequent)

```
boolean isWiFi = activeNetwork.getType() == ConnectivityManager.TYPE_WIFI;
```

work plan

- adaption concept 18.11.2016
- first prototype 4.12.2016
- begin of testing 1.1.2017
- final presentation 27.1.2017