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First Presentation

App Idea and Basic Concept

Mensa Navigator "Foodi"

Challenges of Mobile Computing



Location

- usage depends on location
- different application scenarios
- different views



Battery

- cellular data uses up battery
- location services use up battery



Connectivity

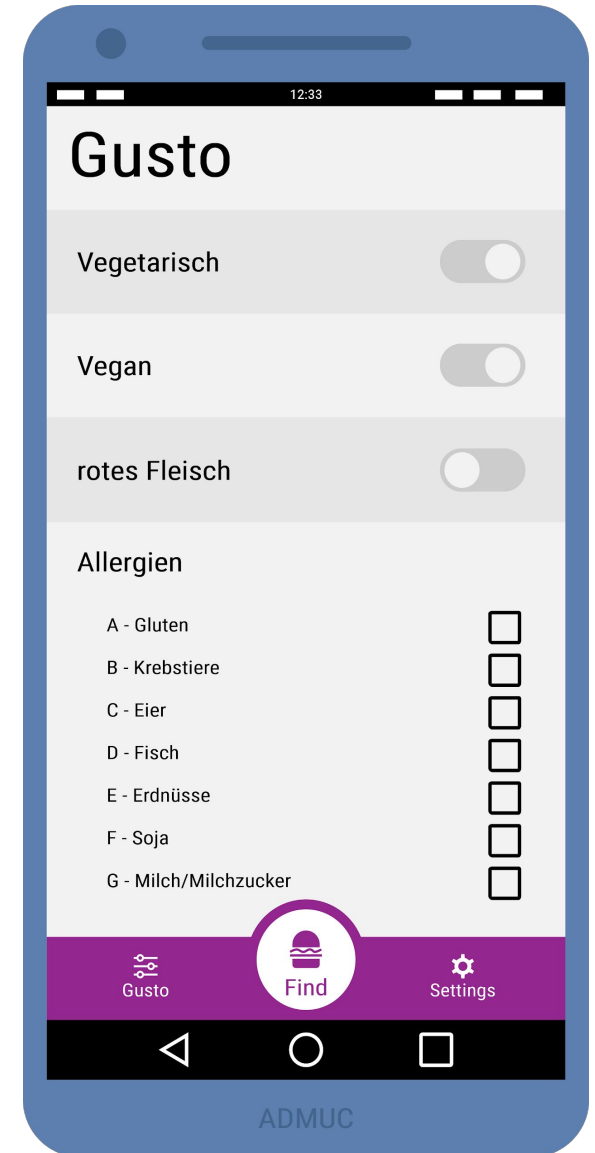
- Offline
 - can't fetch data
 - app is inaccessible
- Cellular Data
 - limited data plan
 - comparatively slow

Application Scenario

- it's noon, you are hungry
- what can I get for lunch
- meal suggestions based on your location and meal preferences
- only display meals that correspond to your preferences
- navigate to the canteen

Use Cases - Preferences

- set eating habits with toggles
- set allergies in checklist
- letter codes based on Studentenwerk



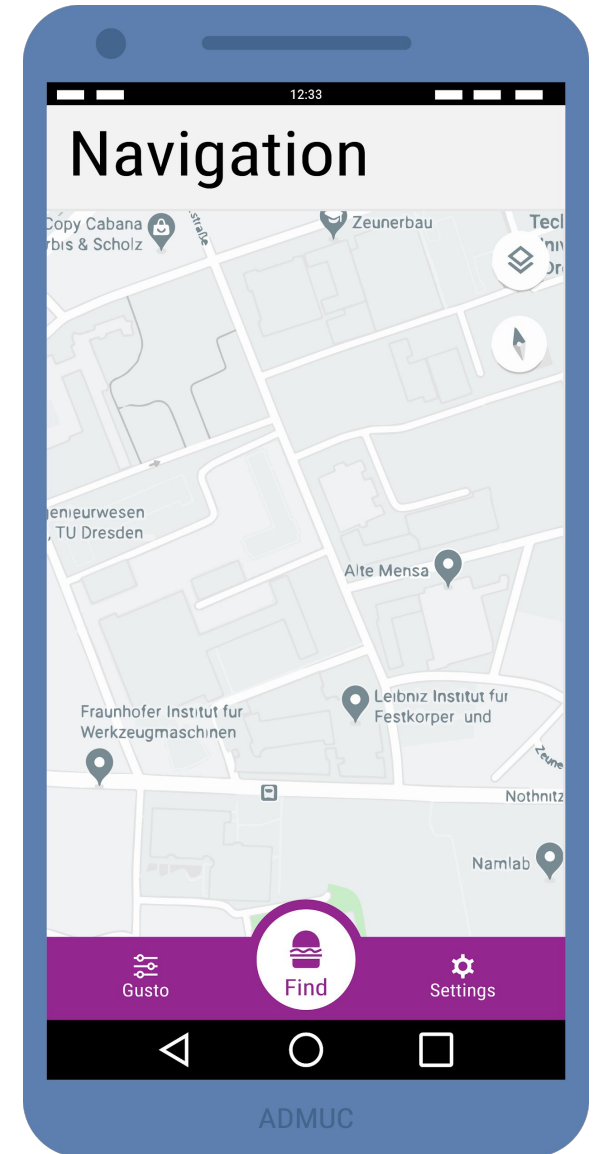
Use Cases - Finder

- start search
- meals suggestions (location, prefs)
- tap a meal for a detailed view
- tap a meal to navigate



Use Cases - Navigation

- integrated or external?
- Google Maps or OSM?
- based on canteen locations in OpenMensa
- get directions to the chosen canteen



Adaptation Concept

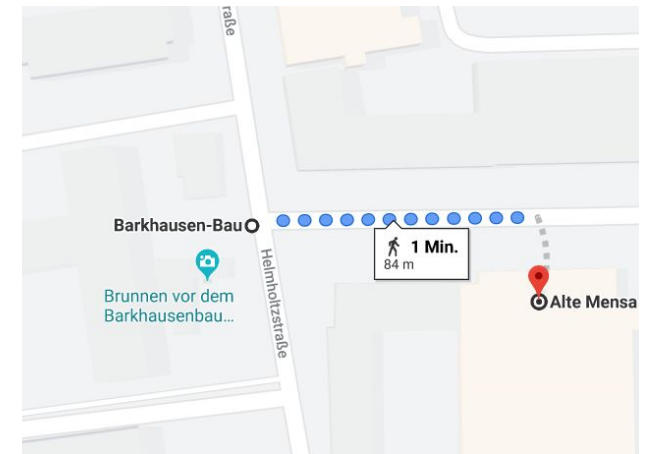
Context Features

Technical context: network



- Online
- Bad Connection
- Offline

Physical context: location



- In mensa
- Near mensa
- Far away

Adaptation Concept

Adaptation Mechanisms: Location

context



In mensa



Near mensa



Far away (> 20km)

adaptation

- Automatically load menu of current day for current mensa from cache
- Display current menu as first page
- Preload the menu of the current day for the mensas near by (if not done already)
- Do not pre-fetch any menus
- Reduce GPS frequency

Adaptation Concept

Adaptation Mechanisms: Network

context



WiFi/LTE



**Bad
connection**



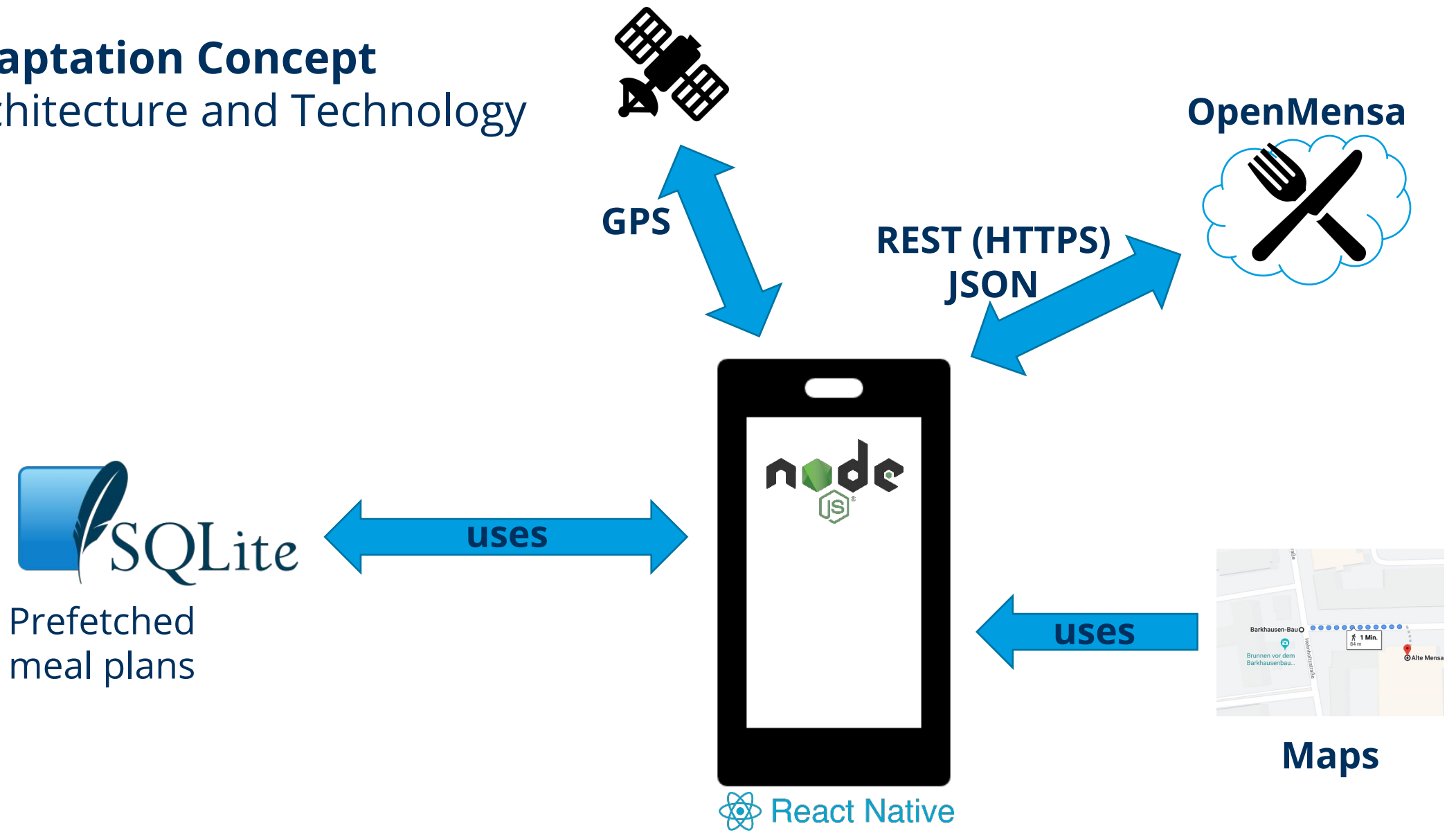
Offline

adaptation

- Fetch the mensa menu for the whole week of mensas that are in the same city
- Only load the menu for the current day of the mensa near by
- Use the cached menus

Adaptation Concept

Architecture and Technology



Work Plan

Date	Milestone
07.11.19	Submission: First Presentation
08.11.19	First Seminar Presentation - App Idea and Basic Concept
20.11.19	App Skeleton and Basic Layout
27.11.19	Open Mensa API and SQLite3 Database
04.12.19	Google Maps Integration and Location Tracking
06.12.19	Submission: Second Presentation
11.12.19	Submission: Peer Review
13.12.19	Second Presentation - Adaptation Concept
18.12.19	Offline Availability/ Data Caching
08.01.20	Testing and Bug Fixing
14.01.20	UI Polishing
24.01.20	Submission: Final Presentation
31.01.20	Final Presentation - Final App