

Application Development for Mobile and Ubiquitous Computing

Campus Surfing

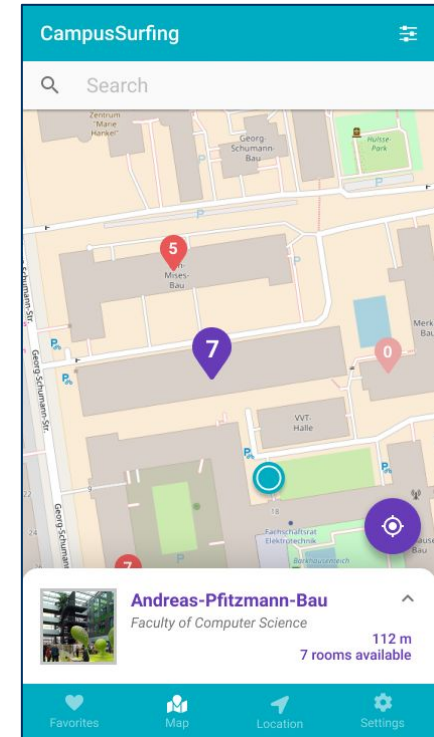
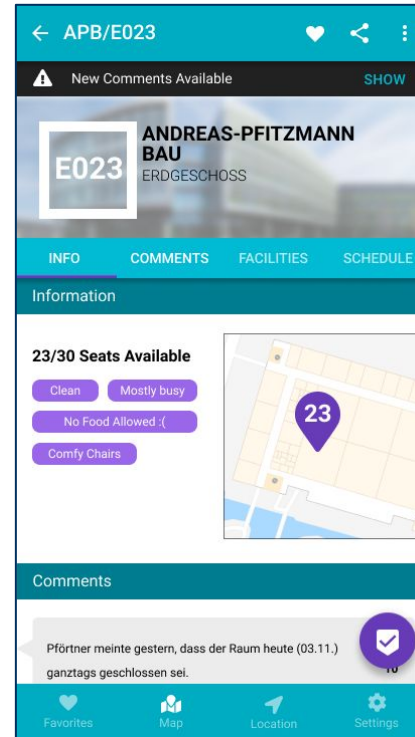
Adaptation Concepts

Group 12

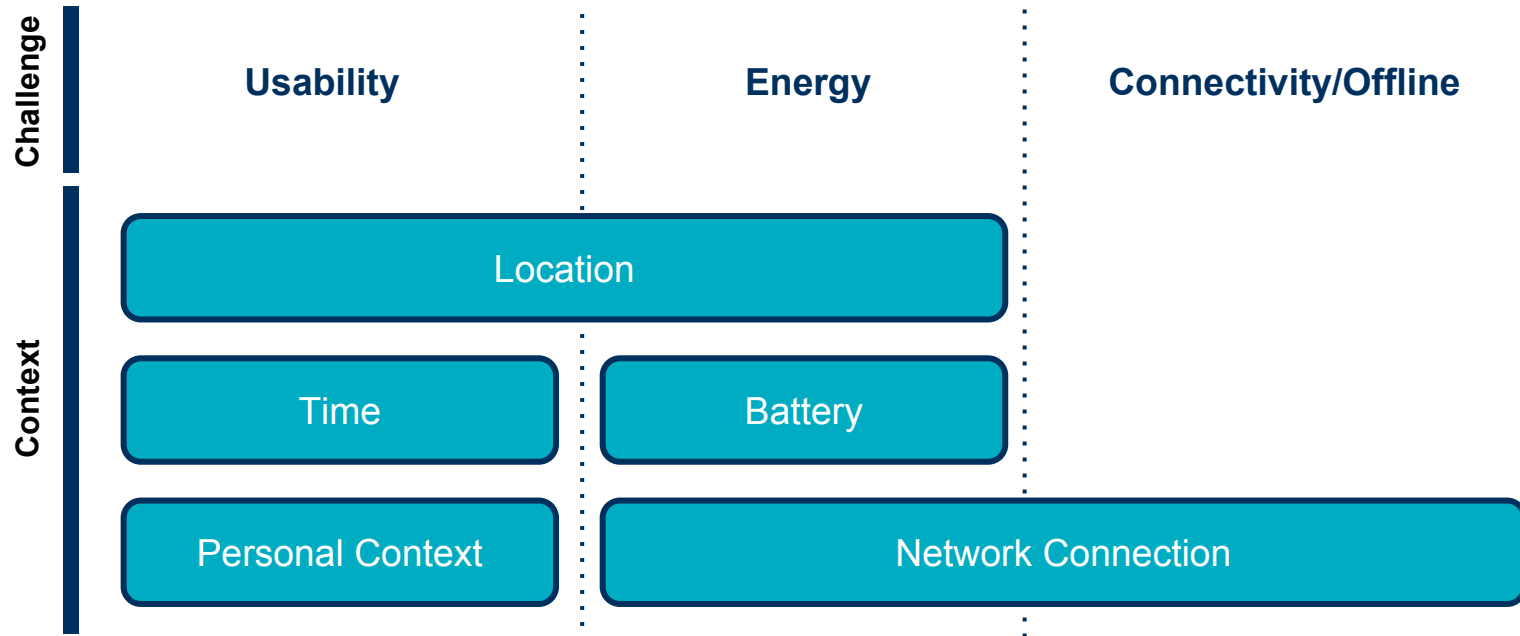
Antonio Pietzsch, Maximilian Vollstädt

Recap: Application Scenario / Idea

- search for available rooms and buildings based on:
 - current location/distance
 - time
 - individual preferences
- users can register at rooms → estimate availability
- view schedules, comment, share, mark rooms as favorites, ...



Contexts and Challenges



Adaptations - Network Connection

Connectivity/Offline Challenge



If (**online**) {

- **Prefetching** based on map interaction and keyword/filter search
- **Local Saving** of saved favorites and current room

Switch (**connection_type**) {

- **Reduction** of image and comment information

}

} Else If (**offline**) {

- **Queuing** of requests (update and fetch data)
- **Usage** of locally saved data (maps, favorite rooms, current room)

}

Adaptations - Location

Usability/Energy Challenge



If (**beacon_detected**) {

- **Bluetooth** usage for position detection
- **Filter rooms** which are close by
- ask user to **register at room**

} Else {

- **GPS** usage for position detection
- **Filter rooms** which are close by

}



Adaptations - Battery

Energy Challenge



If (**battery < 15%**) {

- Suggest **disabling bluetooth/GPS functionality**
- Update location on map only periodically
- Use GSM or WiFi for position tracking

} Else {

- Use **GPS and bluetooth**

}

Further Adaptation Contexts

Usability Challenge

Time

Switch (**now**) {

- filter rooms which are free now/soon

}



Personal Context

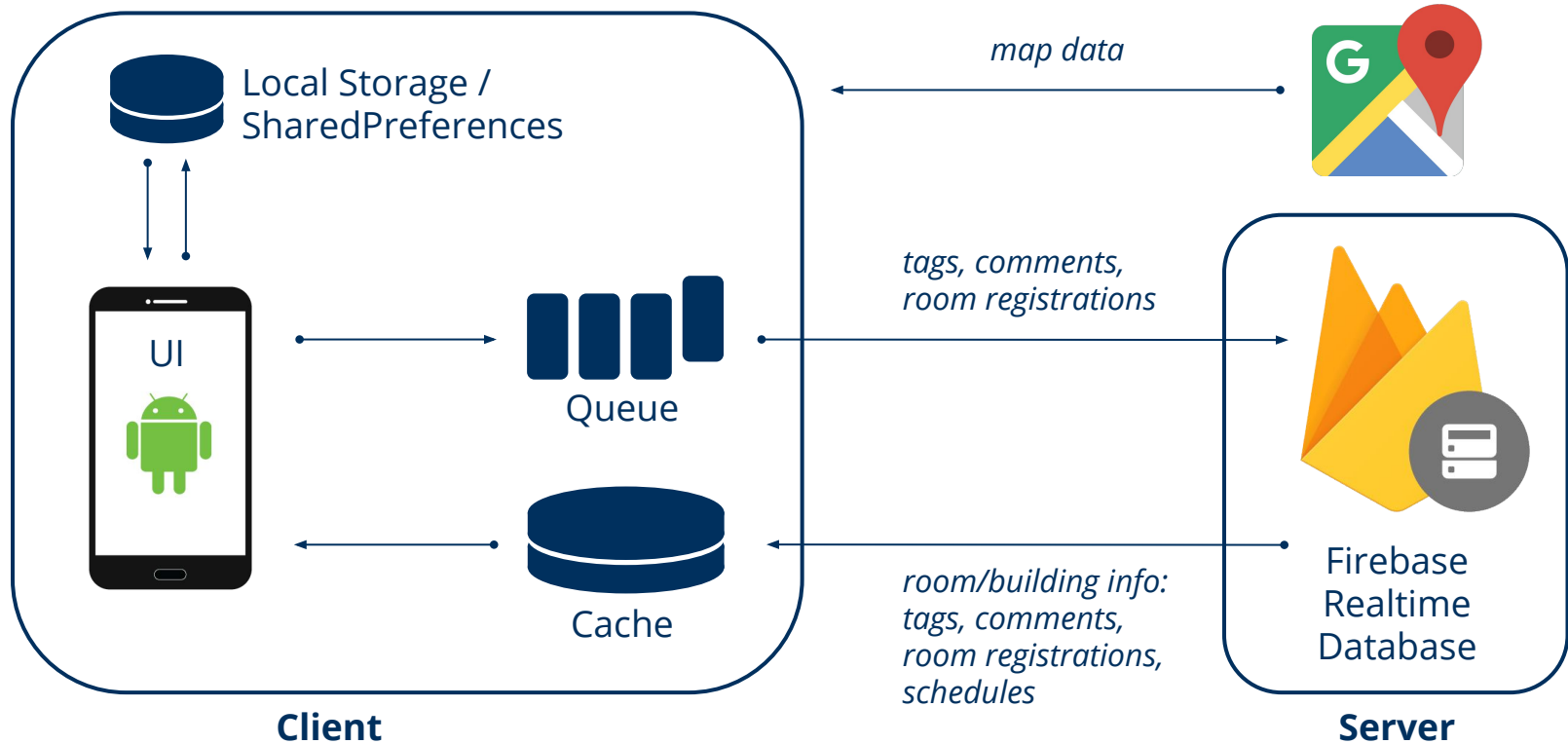
Switch (**preferred_room_properties**) {

- filter rooms based on user preferences

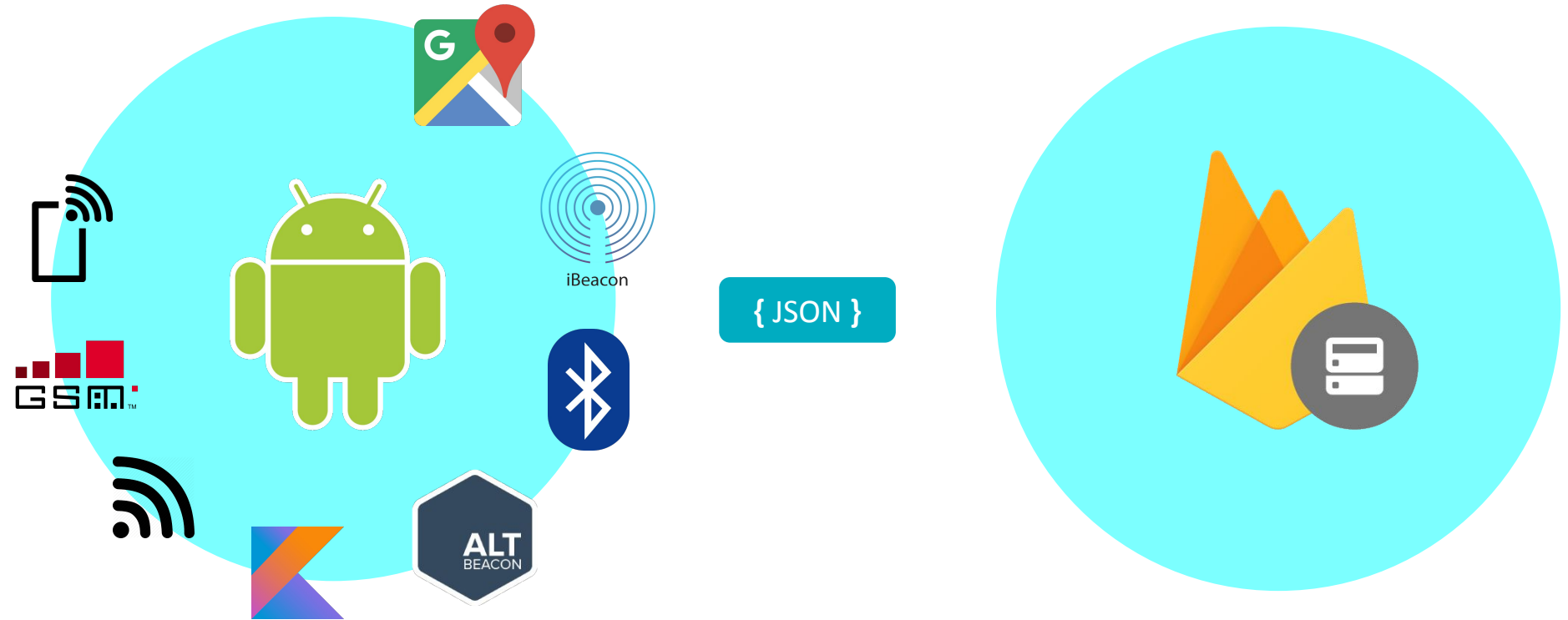
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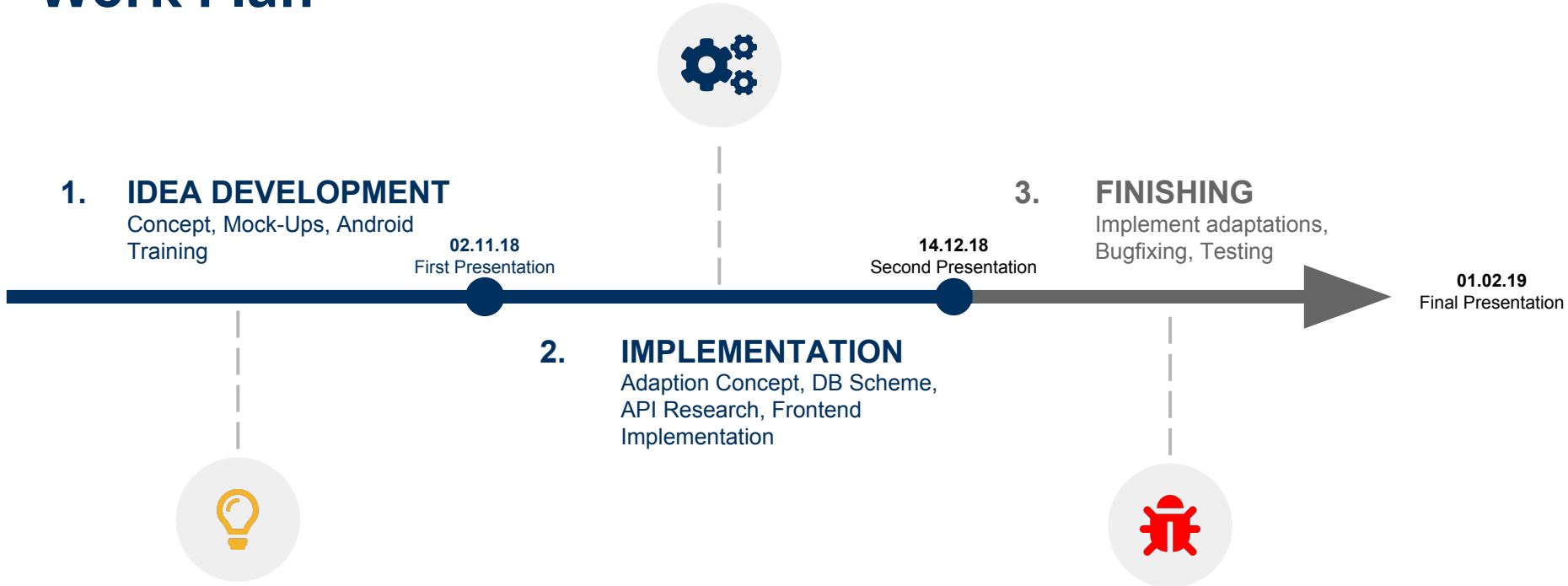
Architecture



Technologies



Work Plan



Any Questions?