TECHNISCHE UNIVERSITÄT DRESDEN

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

# Application Development for Mobile and Ubiquitous Computing

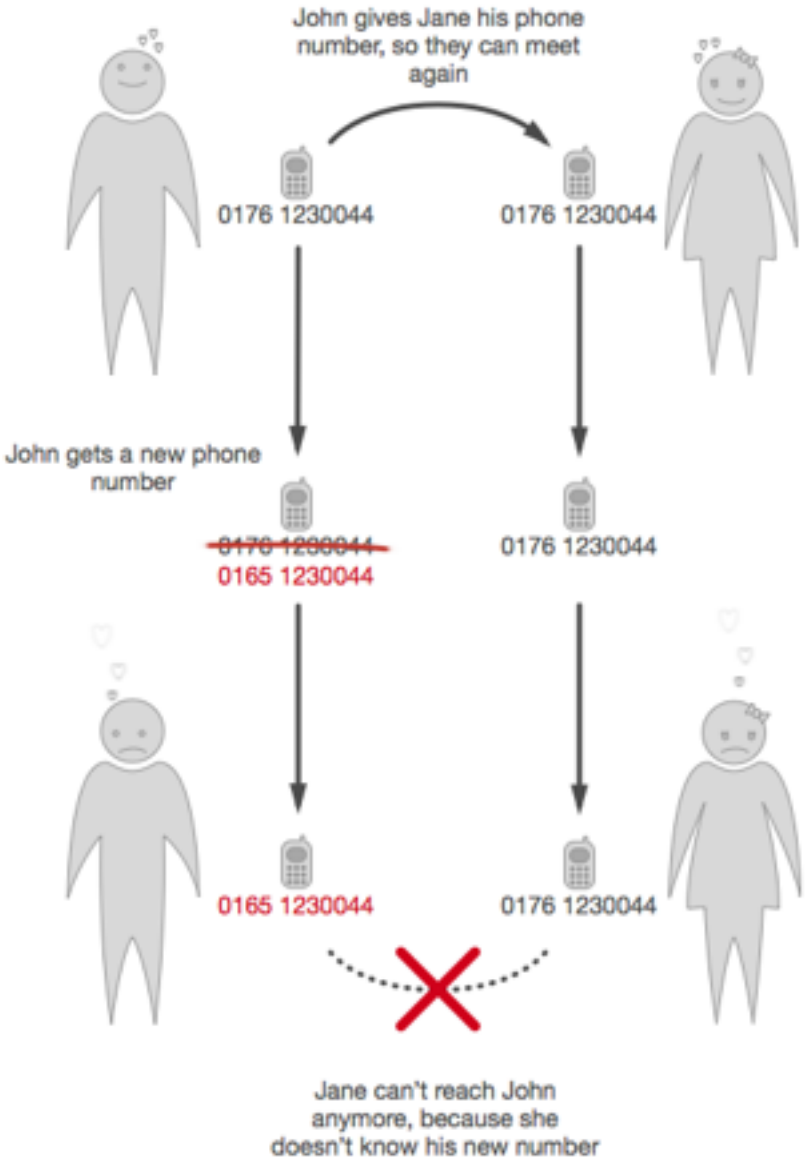
## Seminar Task
## First Presentation

GroupNo. 11
Team: Max Kattner, Florian Schmidt

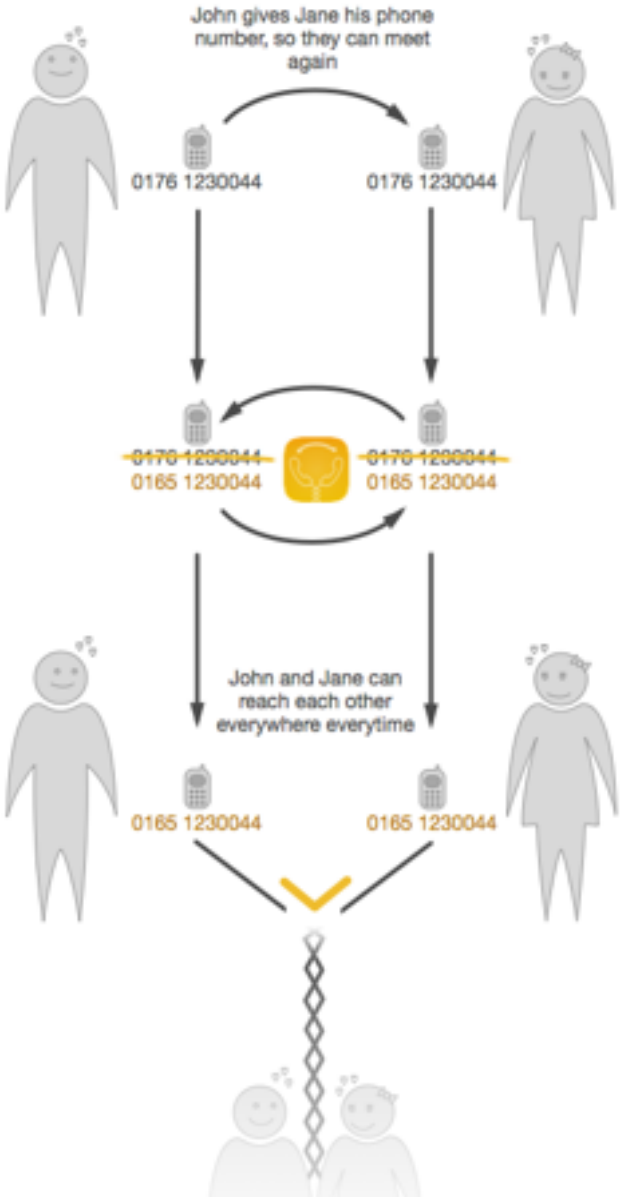
# Agenda

- Application scenario
- Technologies
- Challenges
- Work plan

# Application Scenario

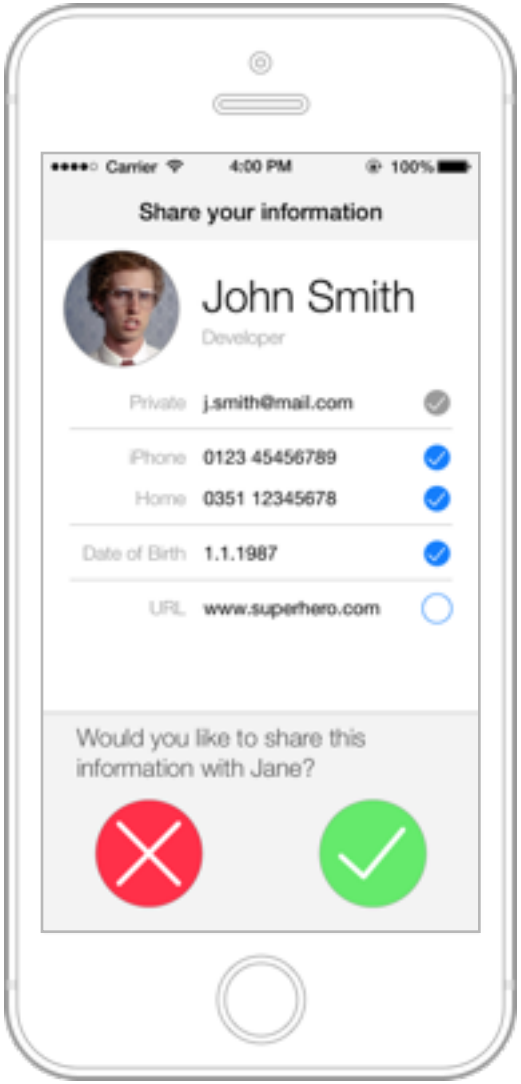


# Application Scenario



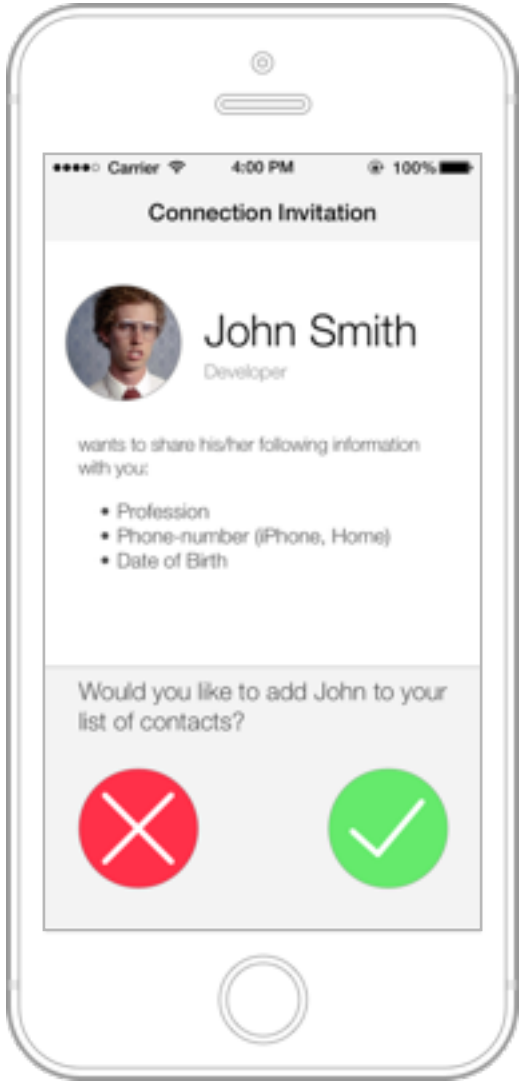
# Application Scenario

- John wants to share his data with Jane
- He can select which information he wants to send to her



# Application Scenario

- Jane gets an invitation to subscribe to John's contact data
- Whenever John changes his data, Jane's address book gets updated automatically
- Now she is always up to date and can reach John whenever she wants



# Technologies

- Client / Server architecture
- iOS application
- REST Backend using Node.js
- decentralized data —> information only on user devices most of the time
- Only updates are stored temporarily on the server
- MongoDB database for flexible & scalable data storage

# Challenges

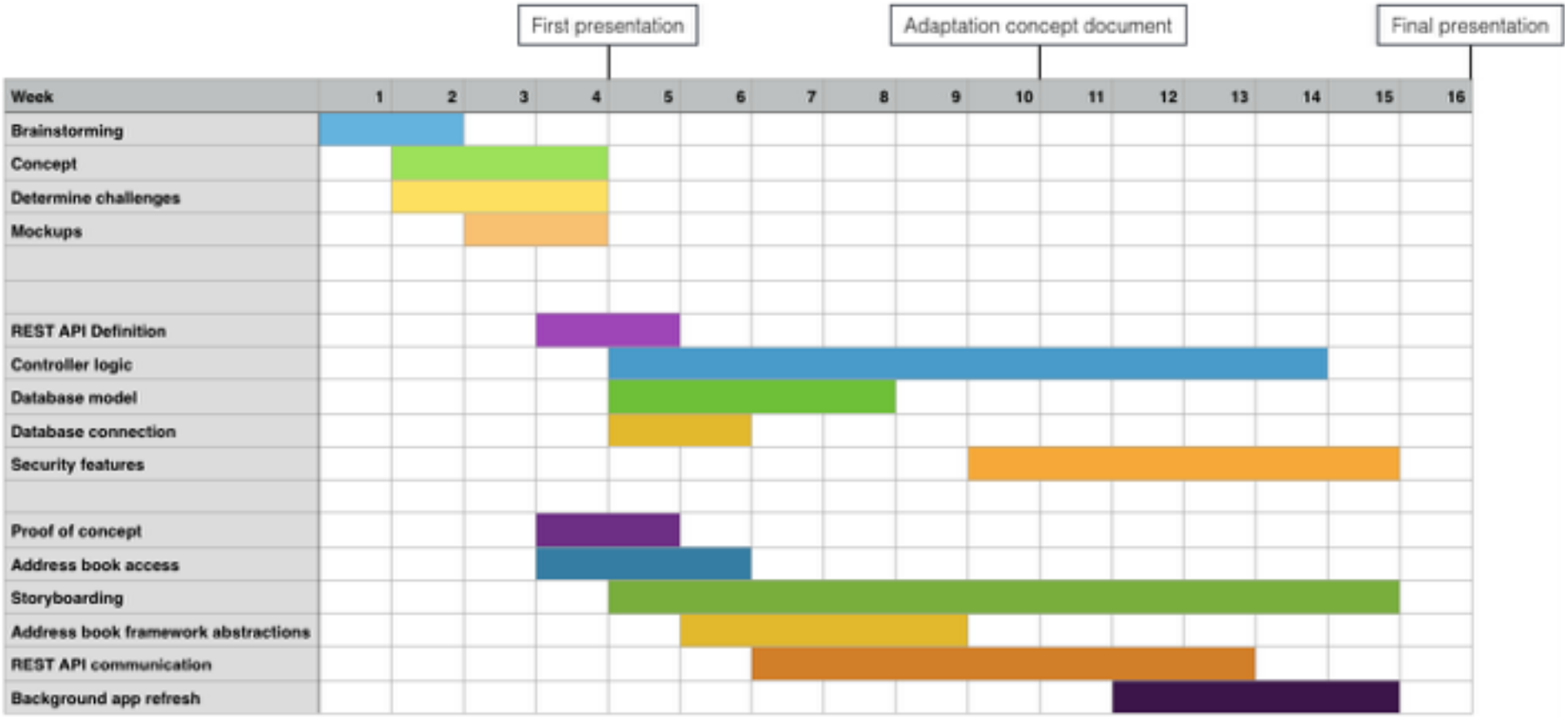
- Connectivity / offline challenge:
  - scheduled App-sync
  - caching of changes until network connection is available
  - data and functionality available offline ("nearby" function saves new subscriptions and publishes them to the server when network is available)
- Resolve conflicts due to concurrent changes
- Usability challenge:
  - no need to use the app more than necessary
  - —> Changes sync in background
  - Fun to use (Nearby discovery / sharing)

# Work plan

- REST API (Florian)
  - Definition
  - Step by step implementation, Controller logic
  - MongoDB database model
  - security features (Username/PW & Token based access)
  - Test-driven development

- iOS (Max)
  - Proof of concept
  - Address book access
  - REST API Communication
  - Background app refresh
  - push notifications

# Work plan


First presentation
Adaptation concept document
Final presentation
Week
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Brainstorming
Concept
Determine challenges
Mockups
REST API Definition
Controller logic
Database model
Database connection
Security features
Proof of concept
Address book access
Storyboarding
Address book framework abstractions
REST API communication
Background app refresh