Institute of Systems Architecture, Chair of Computer Networks

PPchef

First presentation

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Our task: smoking tender pulled pork...

www.foodies100.co.uk

Our problem: 18h up to 24h smoking time

- re-heating after 2-3 hours
- constant temperature of ~90°C necessary
- unneeded wake-up calls disturb at night

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# Our idea: smoking support system

- monitoring temperature profile of smoke chamber and internal meat temperature
- use of PT1000 temperature sensors and RaspberryPi ZeroW as measuring platform
- surveillance of re-heating
- alert function
- sharing tasks between different users
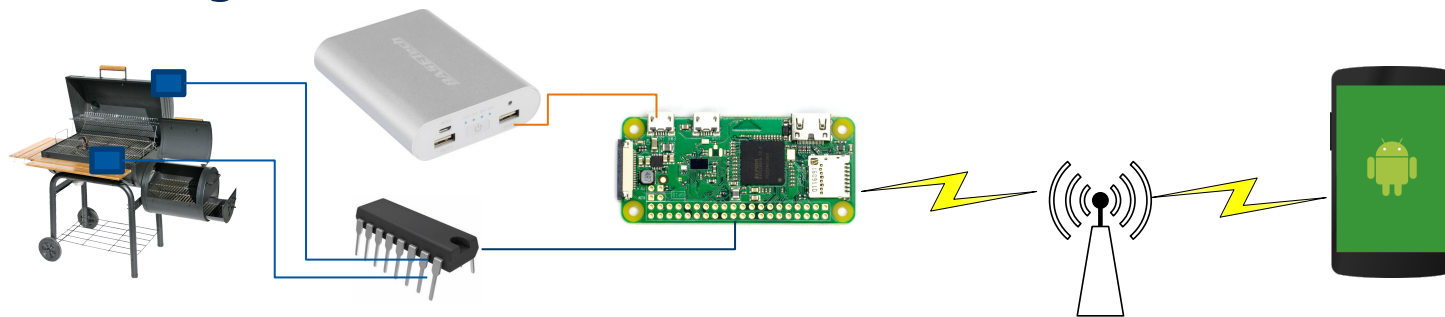
Our challenges: mobile distributed system

- interruption of WLAN connection
- deviation from the predicted temperature curve
- users might miss alerts
- energy efficiency of the server (powered by power banks)
- energy efficiency of the client
- awakening from the deep sleep state of Android

Our user-friendly app: mockups
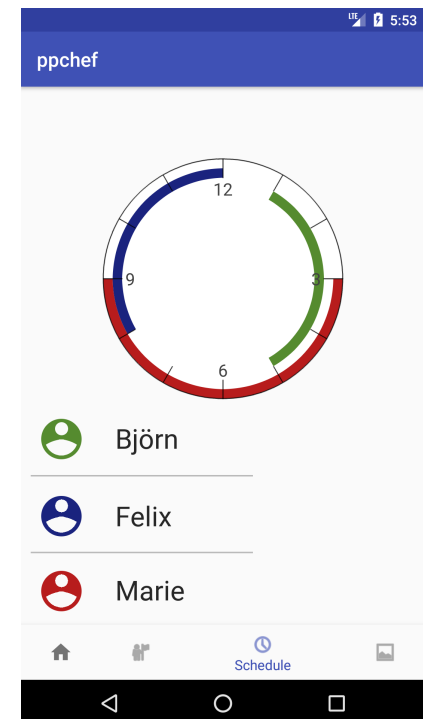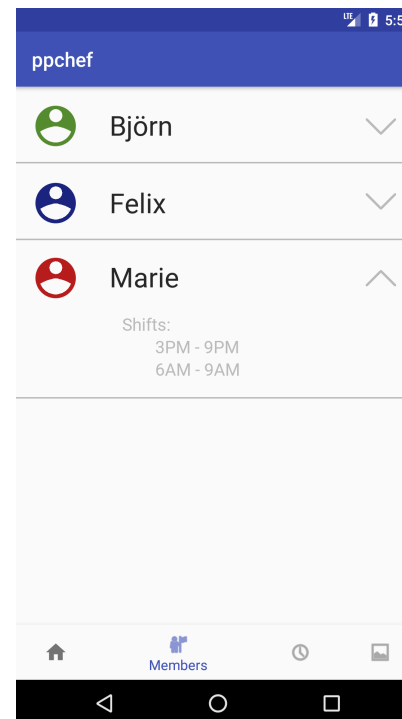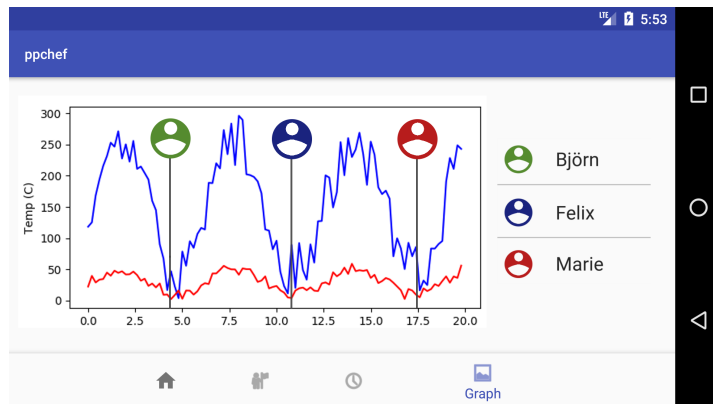
Our technology: instant cross-platform bandwidth-efficient message delivery

- multiple languages: python and shell-scripts on server, Java on Android
- complex data structure in messages between server and client
- Solution: **ØMQ** - messaging framework
  - lightweight and energy-saving
  - observer – listener structured
  - platform independent

Our next task: make!

1. draft
   - interface specification
   - specification of data structures
   - SERM database model
2. implementation
   - …of the measurement system
   - …of the server message and alert system
   - …of the Android client system
3. test
   - components and communication with samples
   - run a real-live-integration test