



TECHNISCHE  
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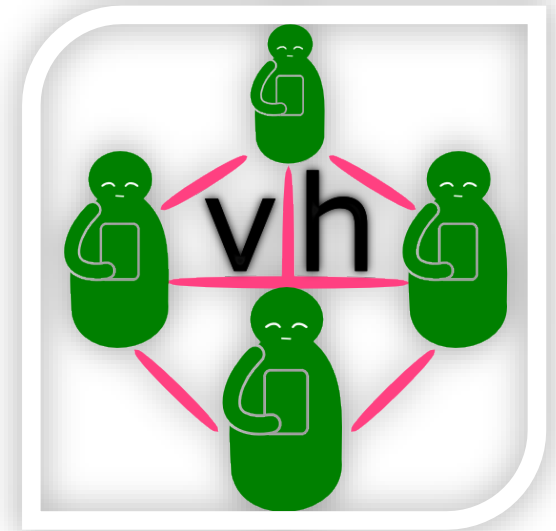
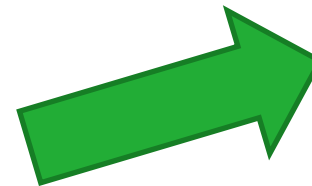
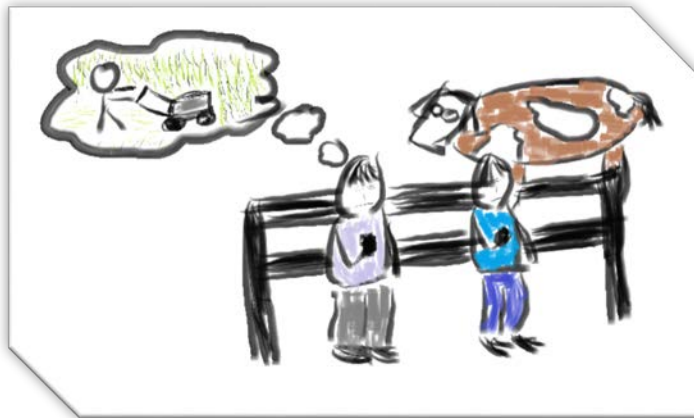
# Application Development for Mobile and Ubiquitous Computing

## Seminar Task Final Presentation

GroupNo. 7

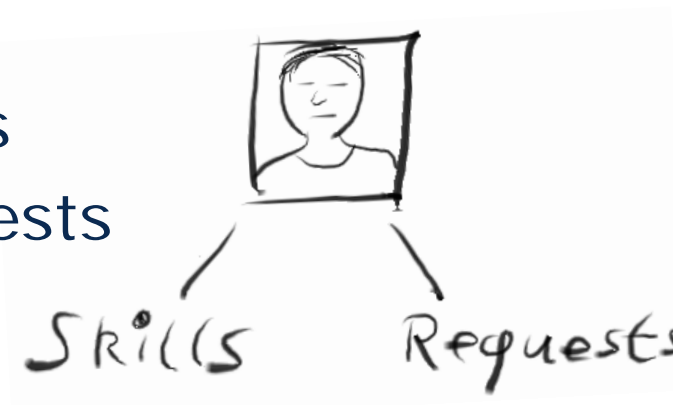
Michael Numair  
William Engelmann

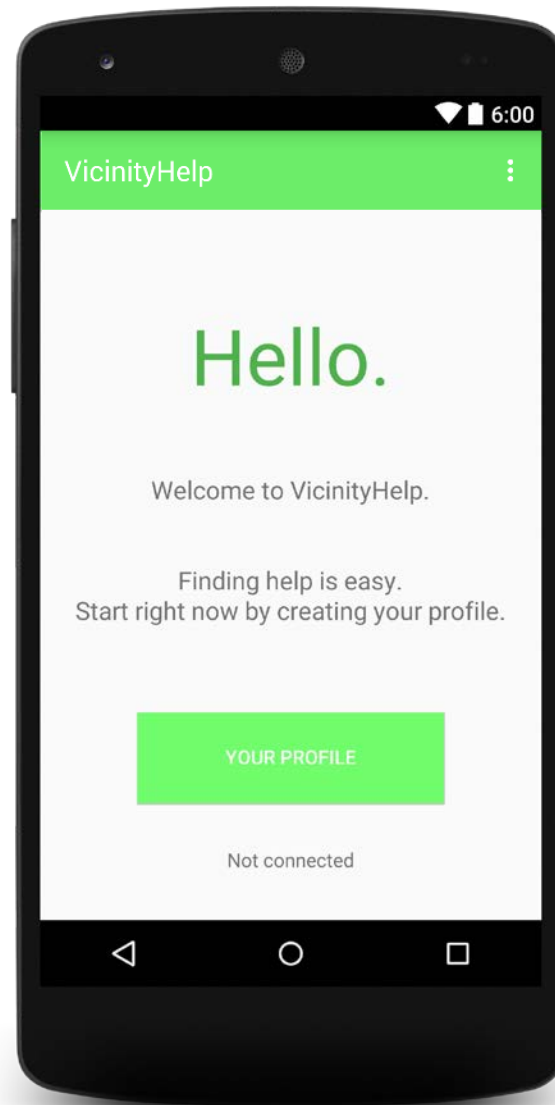
- Help needed for a task

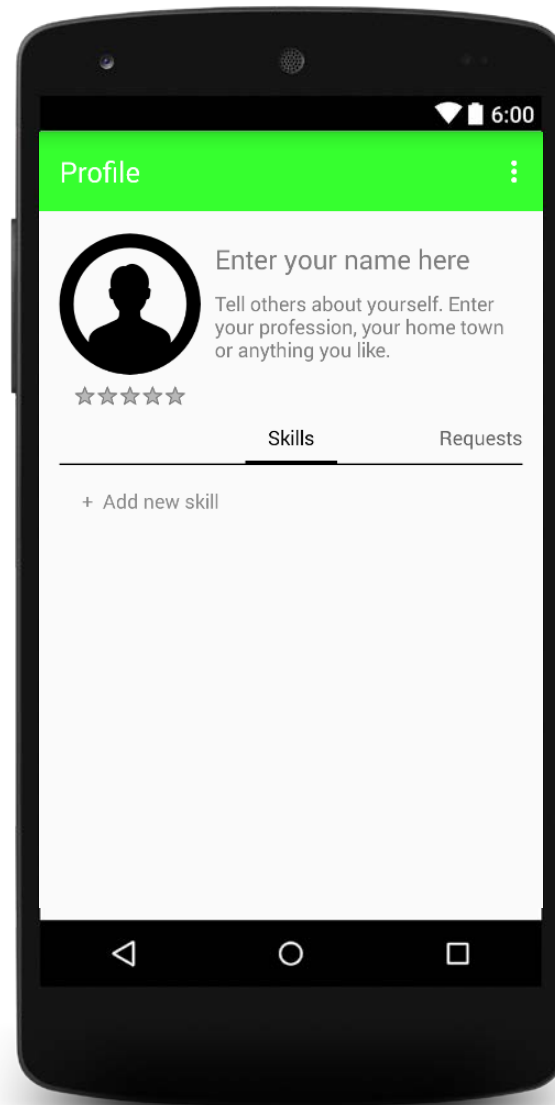


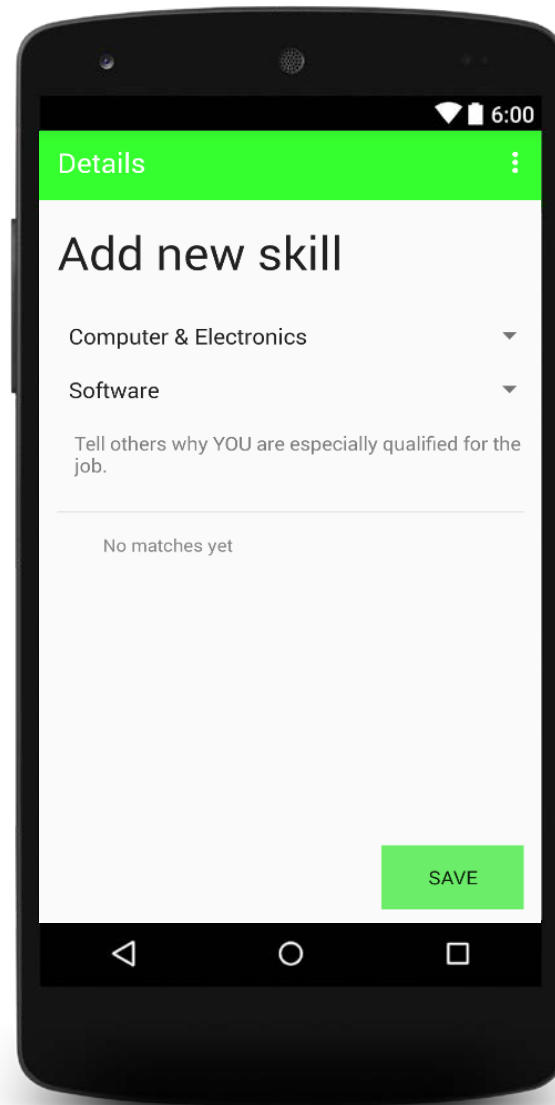
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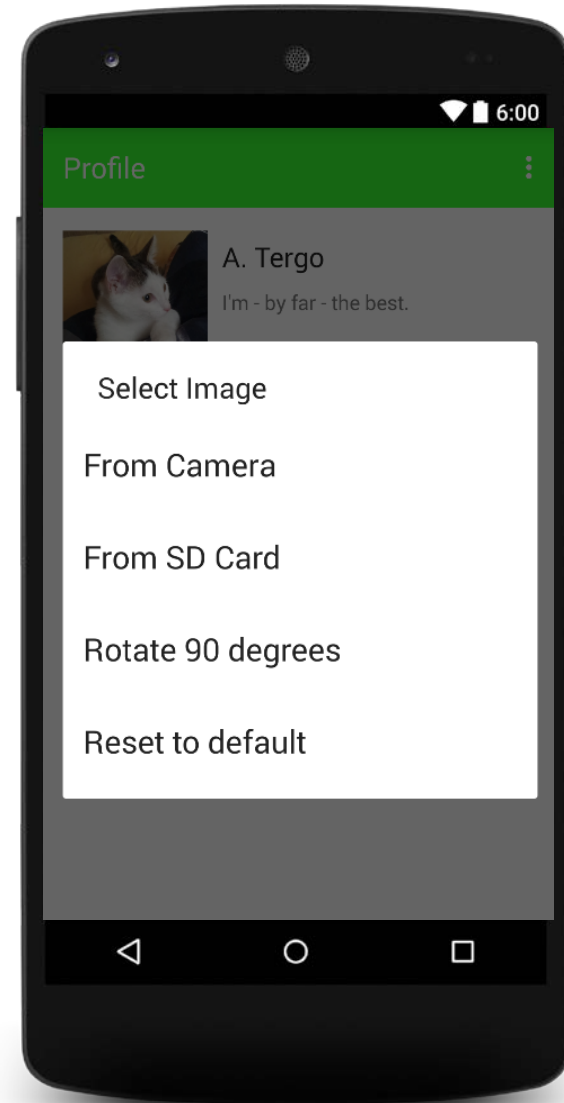
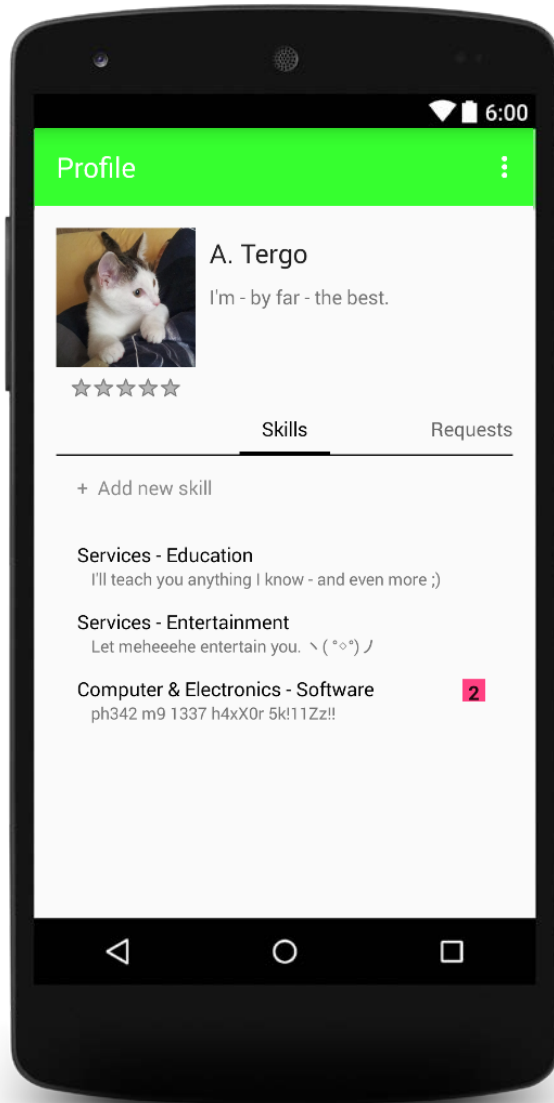
- Scan for users nearby
- Exchange user profiles
- Match skills with requests

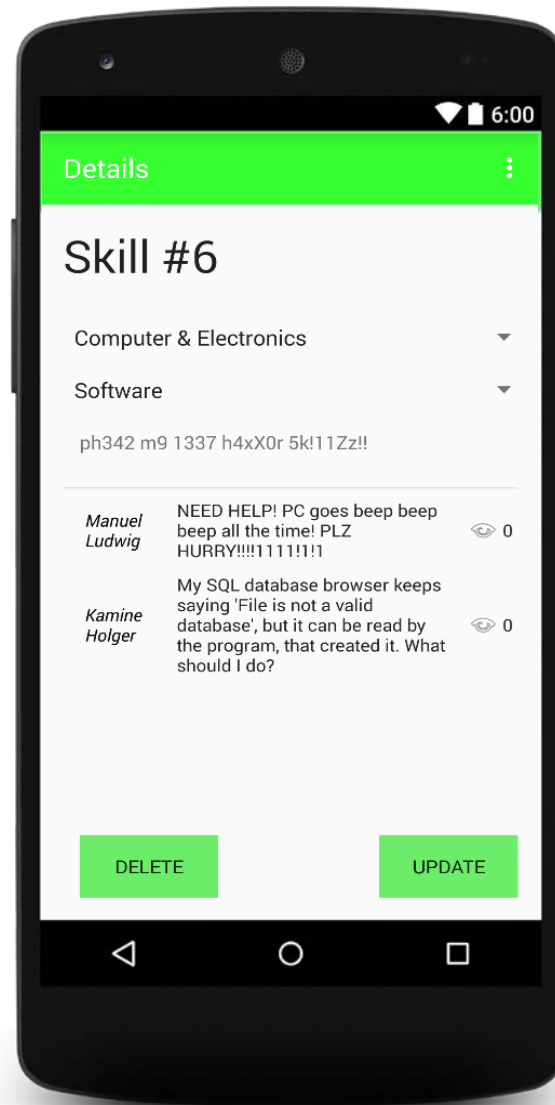


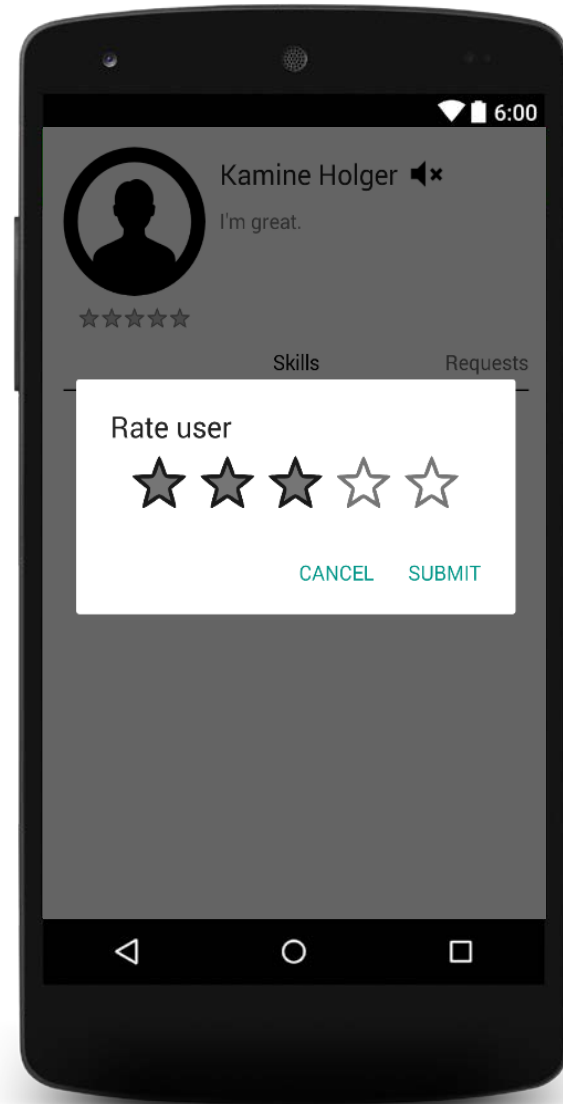
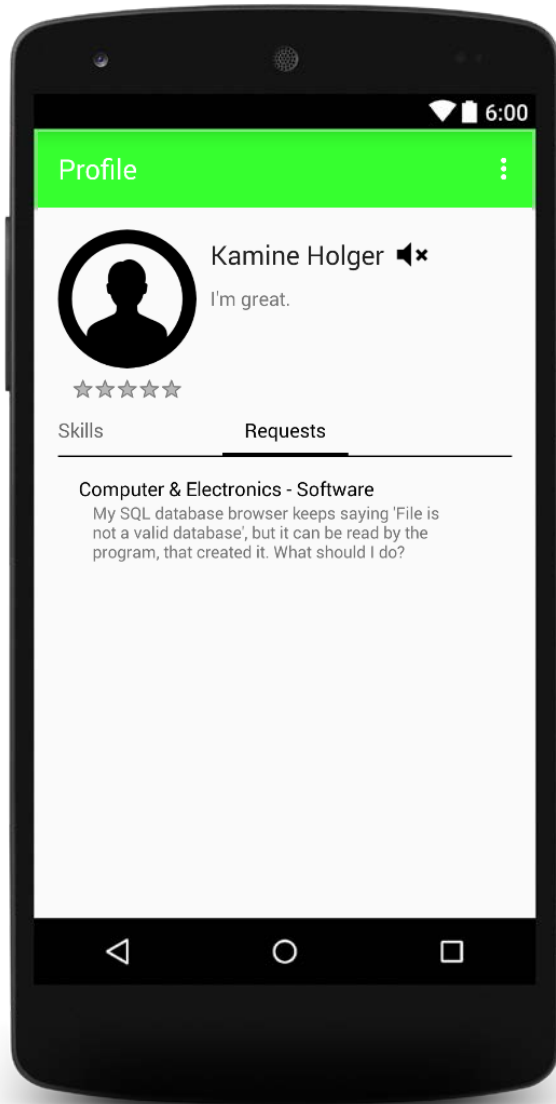






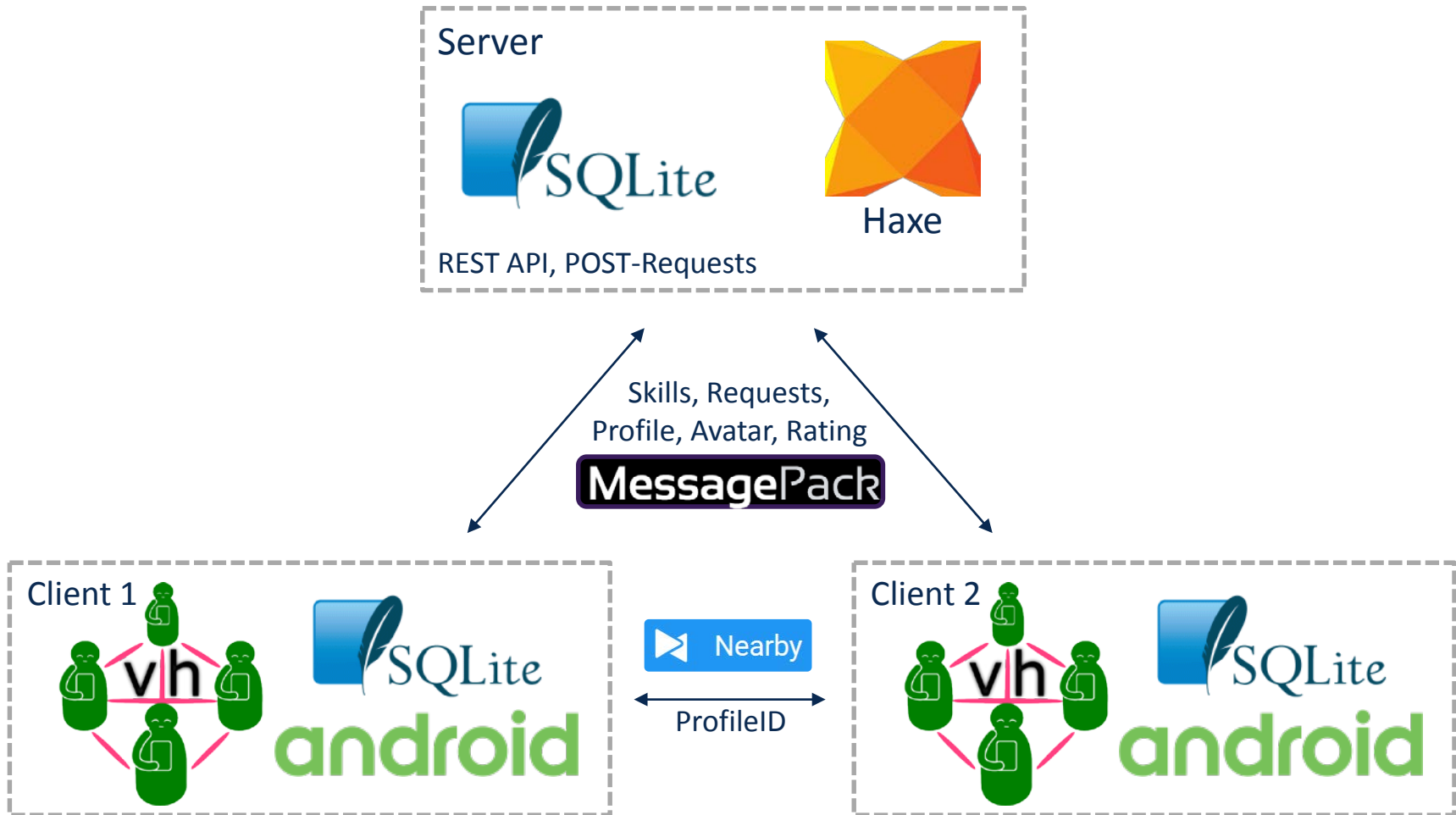








# Architecture and Technologies



## Connectivity/Offline challenge

- Profile/request/skill data split into multiple requests to avoid data corruption on connection abort
- ProfileID now is only Nearby message
- MessagePack for server communication
- Avatars saved in WebP format for best compression
- View/modify profile/skills/requests locally, sync later
- Other people's profile data updated only on access, search for skills/requests regularly and on start (server timestamp comparison, once a day)

## Transmission

- Caching: profiles stored in local database



## Energy

- Disable scanning on action. BATTERY\_LOW callback
- Only scan if location changed, only send if location changed or time-to-live expired
- Increase scanning interval while position remains unchanged, stop after ~1 hour

## Usability

- Option: contact matches via sound on next meeting
- Profile picture to recognize match
- Trustworthyness of match – rate users
- Category-based request and ability comparision

## Limitations

- Nearby visibility distance and functions fairly limited
- GPS accuracy sometimes too low, onLocationChanged called even if no movement at all
- Advanced settings not implemented, e.g. scan interval
- GPS needed, but only used for location change detection, app could work without this requirement

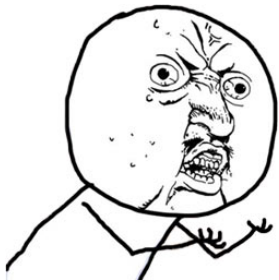
## Possible improvements

- Custom categories, anti-abuse system
- Advanced rating functionality (per match; text rating)
- Replace Nearby, rely on server side position matching

## Problems

- Nearby: documentation (again), guidelines, missing functions
- Android: documentation, backwards compatibility (deprecation leads to frustration), API changes need special cases
- The logic of team Android development:

*Android Studio  $\wedge$  TeamViewer  $\wedge$  RAM < 32 GB  $\Rightarrow$  Bluescreen*



**Android, Y U NO HAVE DOCUMENTATION**

## Problems

**GitHub**Status

UPDATED LESS THAN A MINUTE AGO

**Status Messages**

[« Dashboard](#)

January 28, 2016

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- 2:04 UTC **We're working to address a widespread issue affecting all github.com services.**
- 1:50 UTC **We're working to address a widespread issue affecting all github.com services.**
- 1:36 UTC **We're working to address a widespread issue affecting all github.com services.**
- 1:02 UTC **We're continuing to investigate a significant network disruption affecting all github.com services.**
- 0:47 UTC **We're investigating a significant network disruption affecting all github.com services.**
- 0:46 UTC **We're investigating a significant network disruption effecting all github.com services.**
- 0:32 UTC **We're investigating connectivity problems on github.com.**

Unfortunately, this presentation  
has stopped.

OK