User Perception Analysis for Showing Personal Data Access as Privacy Implication Factor

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Problem: Users face difficulty to assess excessive data harvesting nature of applications.

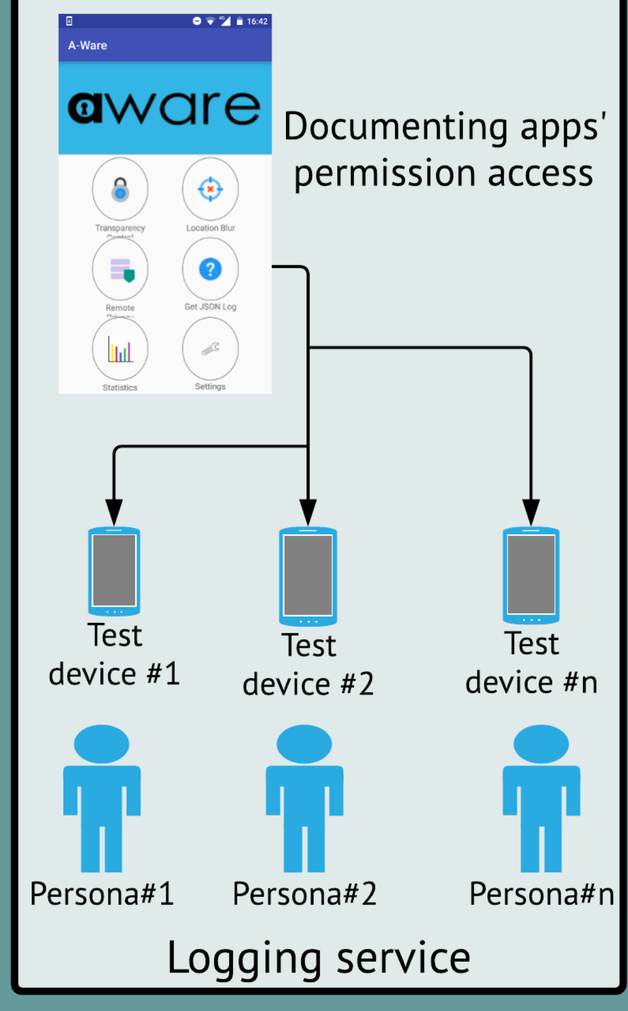
Idea: Introduce an app market with privacy indicators to the users and observe their selection behavior.

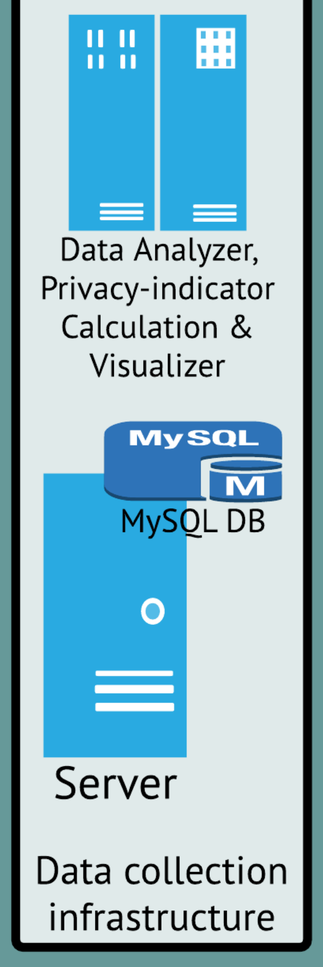
Aim: Sensitize the user to an adequate selection of apps based on privacy invasive/preserving behavior.

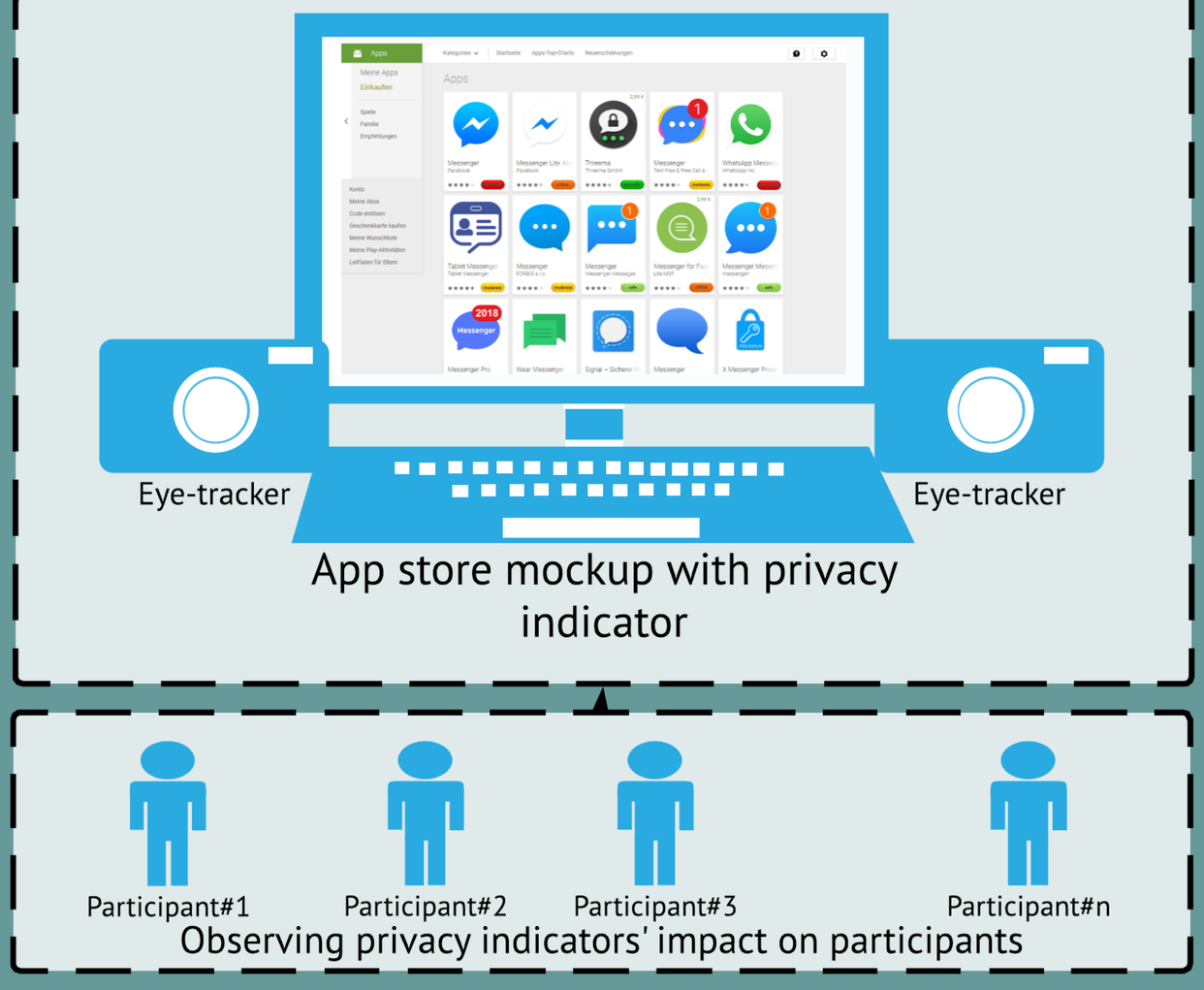
Hypothesis: Ex-ante privacy indicator can nudge the user towards informed decision making.

Empirical data of apps' permission access log

Privacy indicator formulation based on apps' identity attribute consumption







Lab setup for measuring apps' privacy-friendliness - KAUdroid

Lab setup for analyzing user-perception - TUBdroid

Research Collaboration

Study design:

I. We investigate with the help of persona about what happens once the app-user grant access to her data by pressing 'Allow' or 'Accept' [2].

II. Based on this empirical data, a privacy indicator is constructed from derived partial identity attributes [1].

III. Privacy indicator is placed in an app store mock-up to observe and analyze user perception [3].

Research objective:

This study aims at measuring the impact of *'ex-ante'* indicators [4] on informed decision making of users and to answer following questions:

- How does the user interpret privacy indicator prior to app installation?
- How much attention is given to the privacy indicator measured by the observation period?
- Is there any significant difference in decision making behavior while selecting an app for a certain task?

References:

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2. Momen, Nurul; Pulls, Tobias; Fritsch, Lothar; Lindskog, Stefan: How much Privilege does an App Need? Investigating Resource Usage of Android Apps. The Fifteenth International Conference on Privacy, Security and Trust (PST), 2017.
3. Bock, S., (2018). My Data is Mine. Users' Handling of Personal Data in Everyday Life. In: Langweg, H., Meier, M., Witt, B. C. & Reinhardt, D. (Hrsg.), SICHERHEIT 2018. Bonn: Gesellschaft für Informatik e.V.. (S. 261266).
4. Nurul Momen. Turning the Table Around: Monitoring App Behavior. In Proceedings of the Sicherheit – Schutz und Zuverlässigkeit, Lecture Notes in Informatics (LNI), Volume P-281, pp: 265-270, Konstanz, Germany, Gesellschaft für Informatik e.V., 2018.