

Data quality and security evaluation cyberinfrastructure applications

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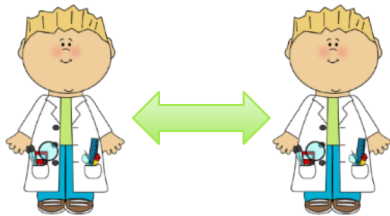
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From old data collection model to new infrastructure

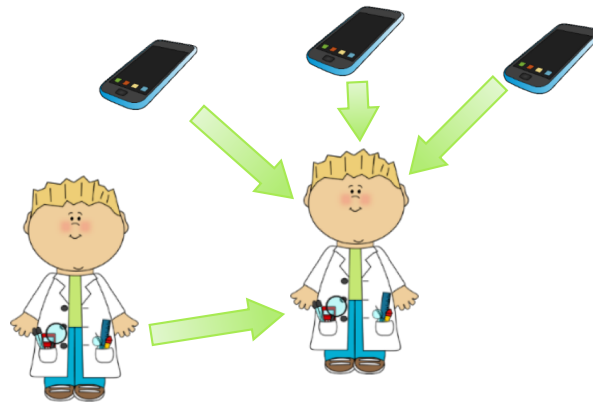
Old data collection model



From a scientist to a scientist

Quality Data

Modern data collection model



Citizen science

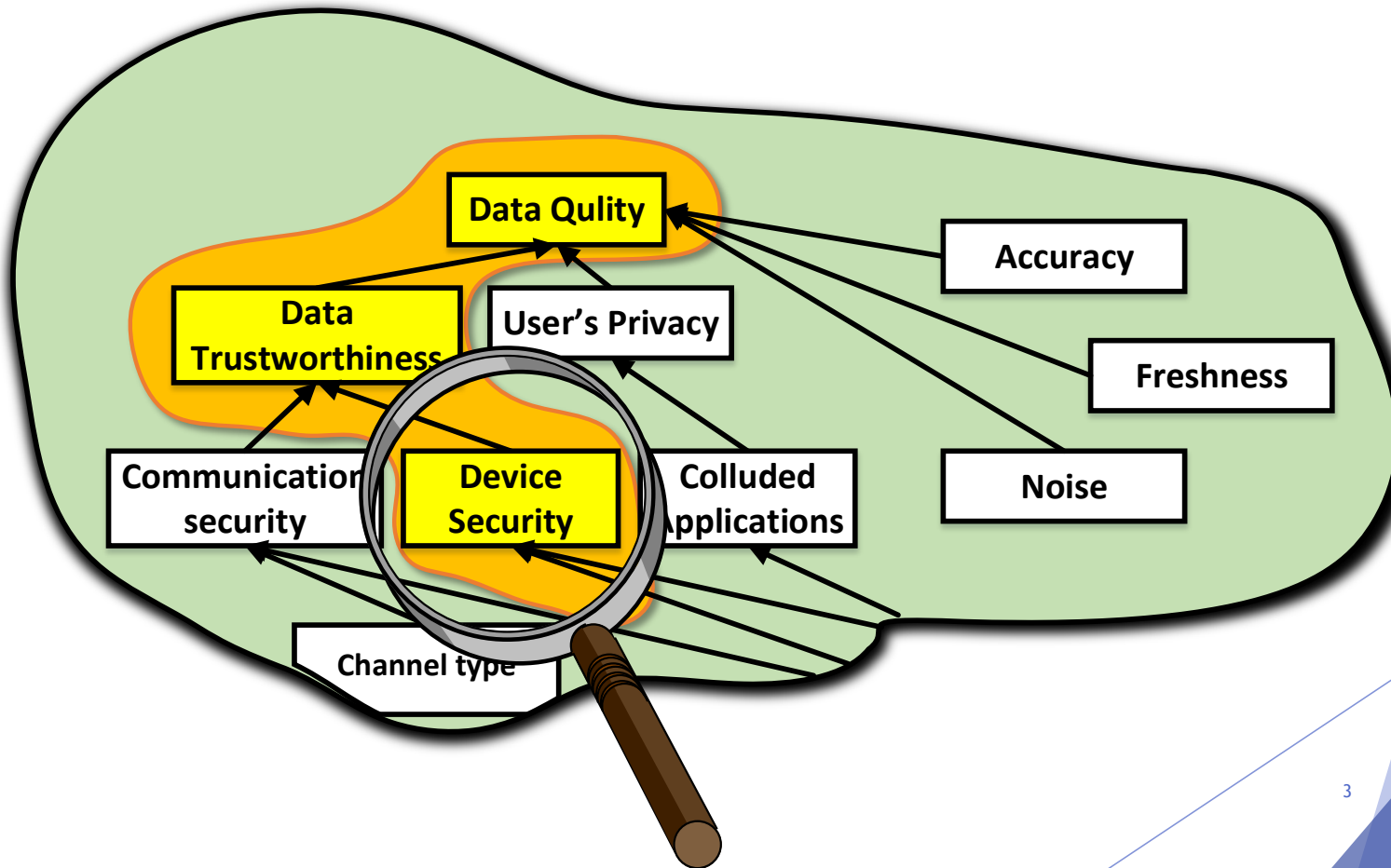


Internet of Things

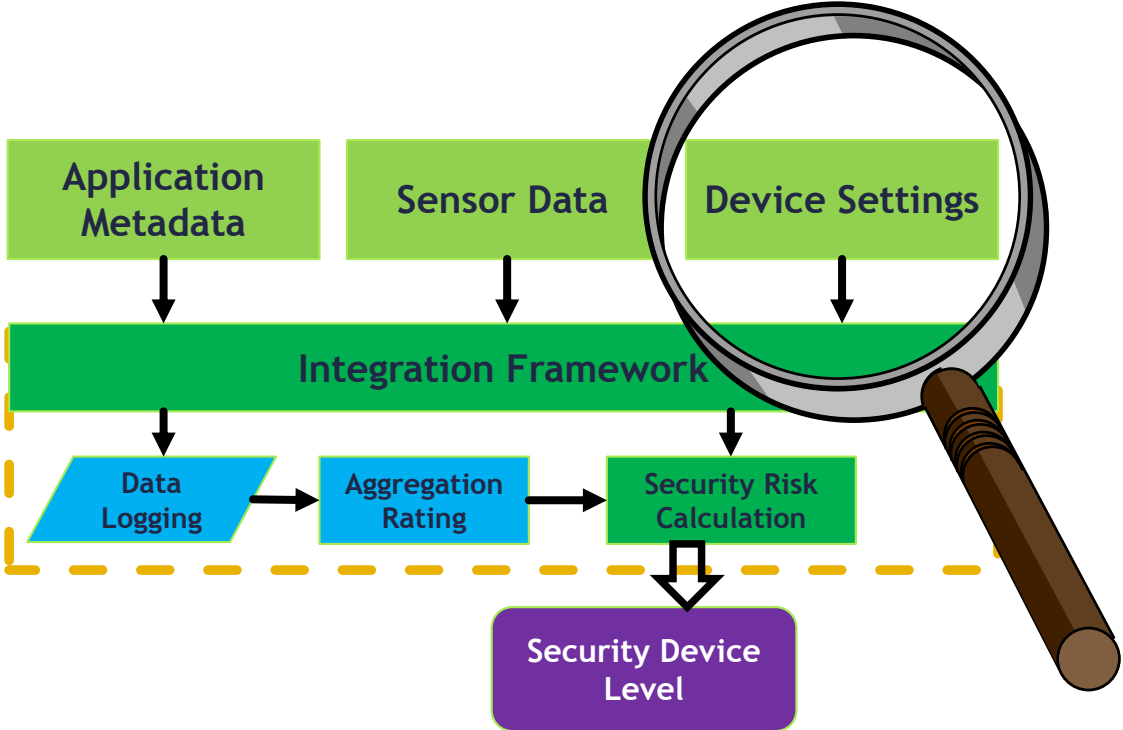
What is data quality?



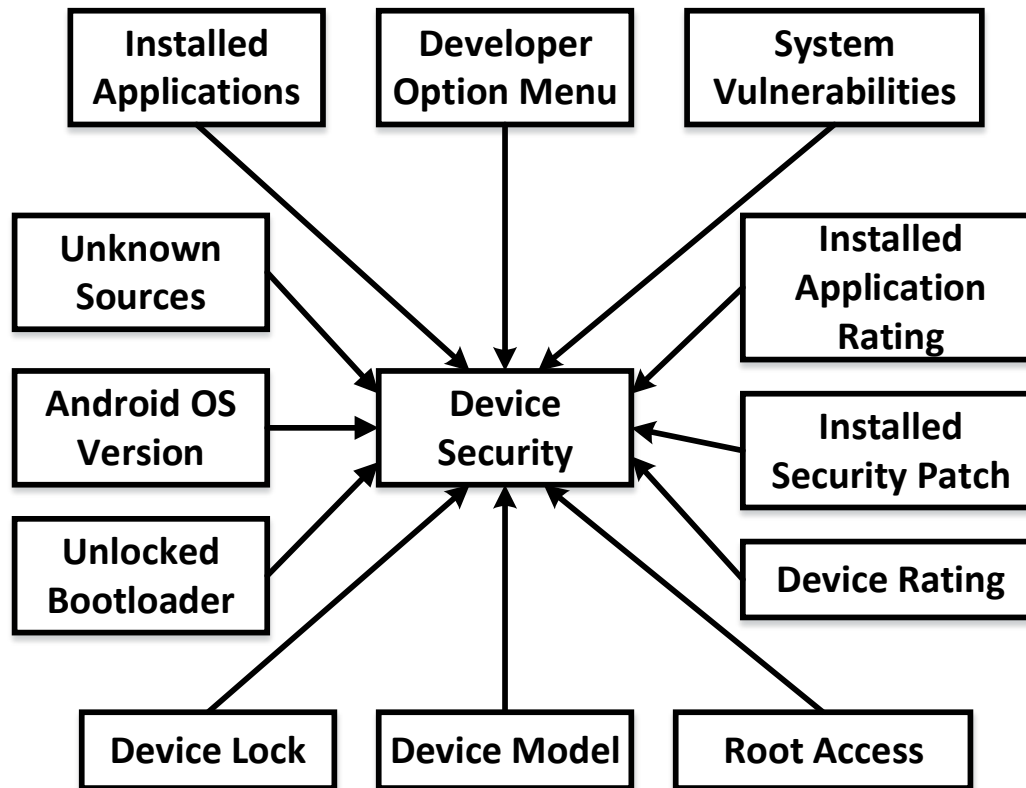
Data quality



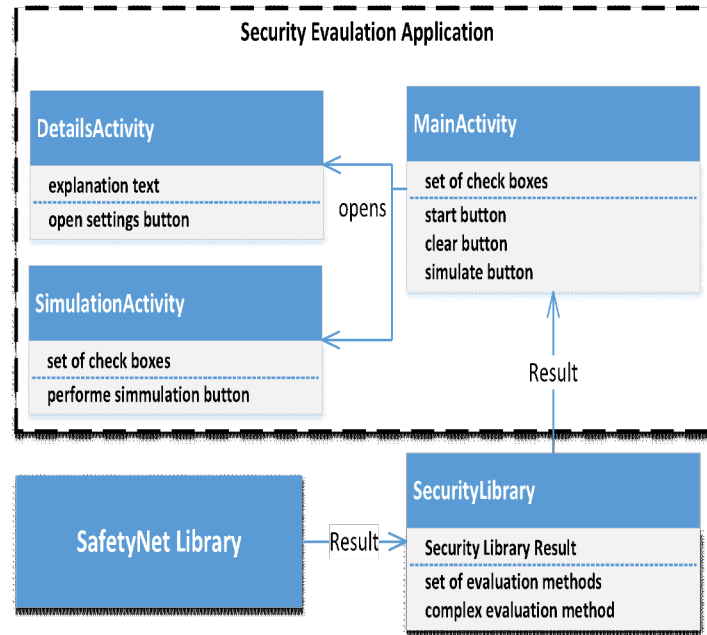
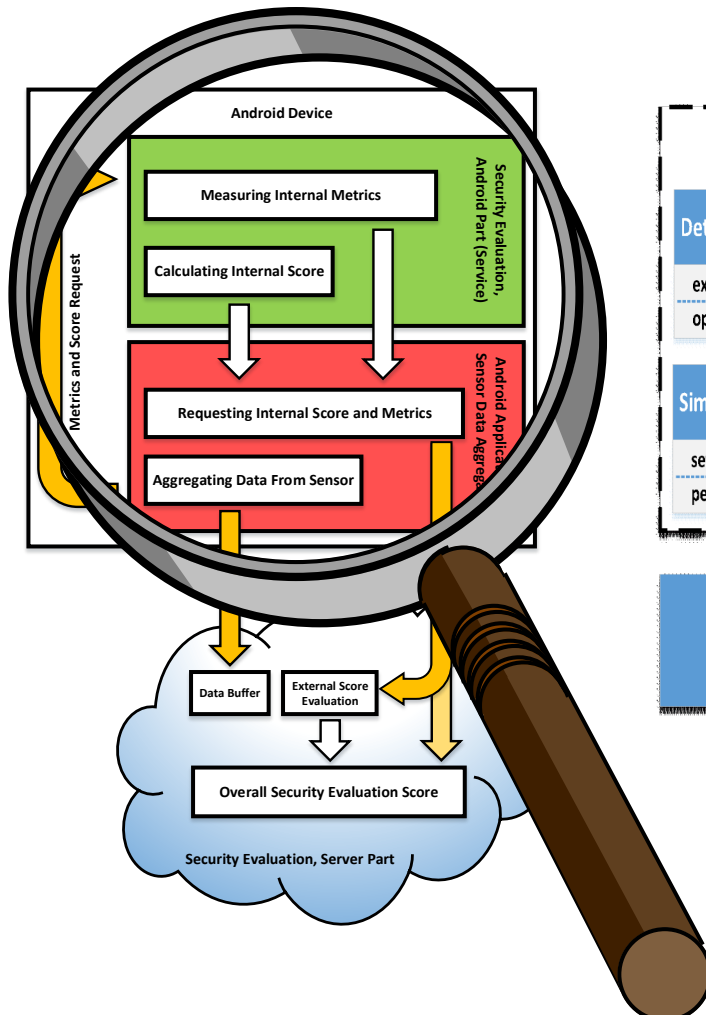
Security evaluation



Device security



Overall Security Evaluation



App #1: Motivation and functionality

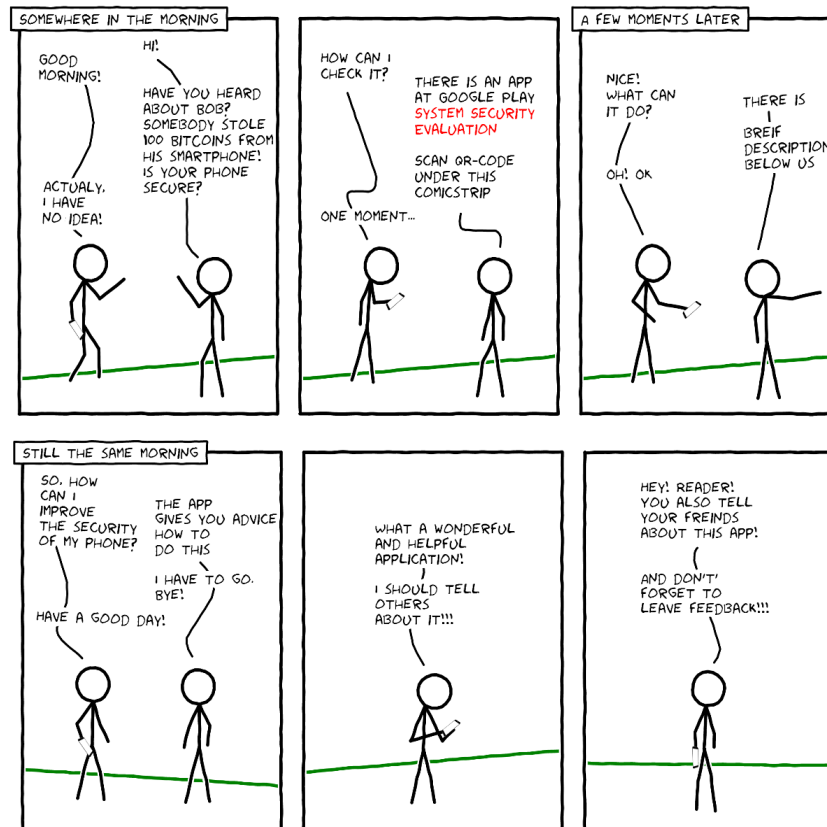
The application:

- evaluates both an overall security of the Android device and the influence of each system parameter separately.
- presents a detailed explanation why a particular aspect is important from the security perspective.
- allows to simulate various parameter's values and to show their influence on an overall security level.

Try yourself !

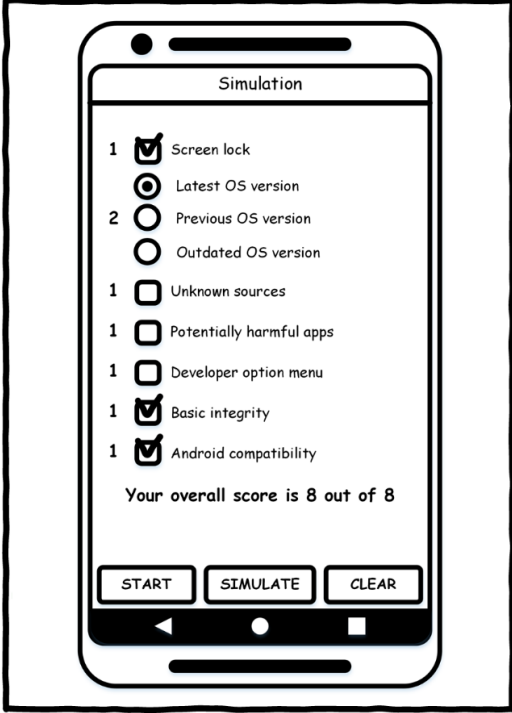
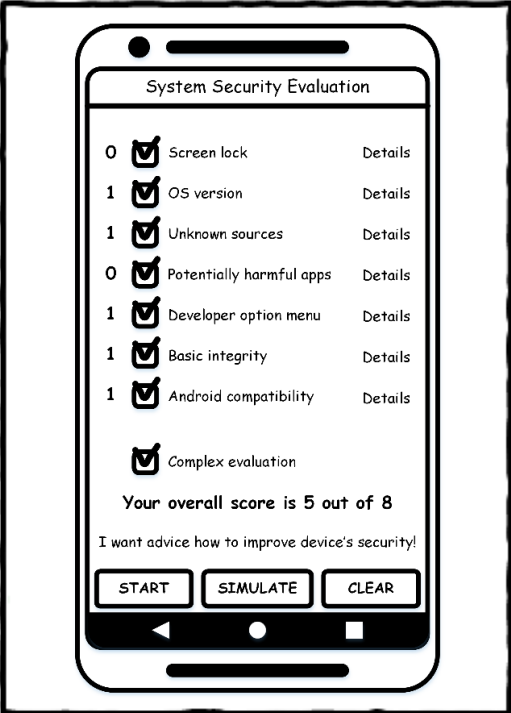


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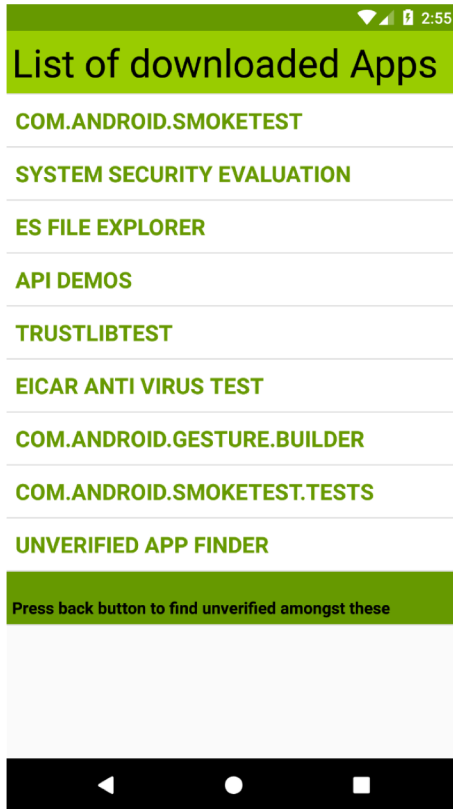




App #1: Security Evaluation UI



App #2: Detector of unverified apps

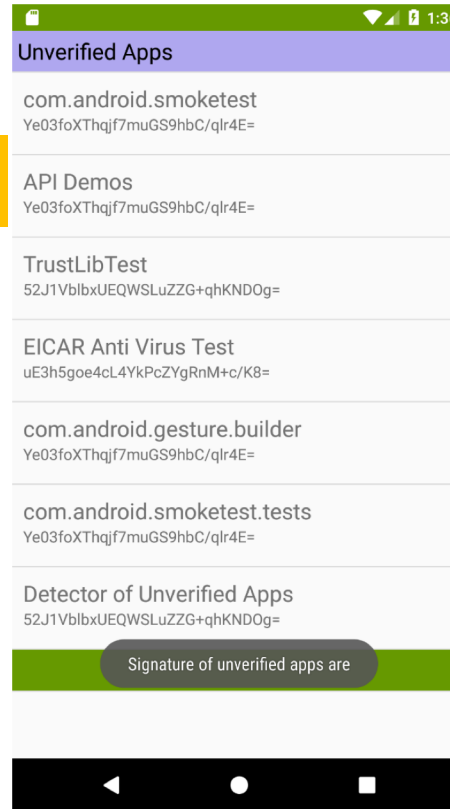


Installed Apps

Try yourself !



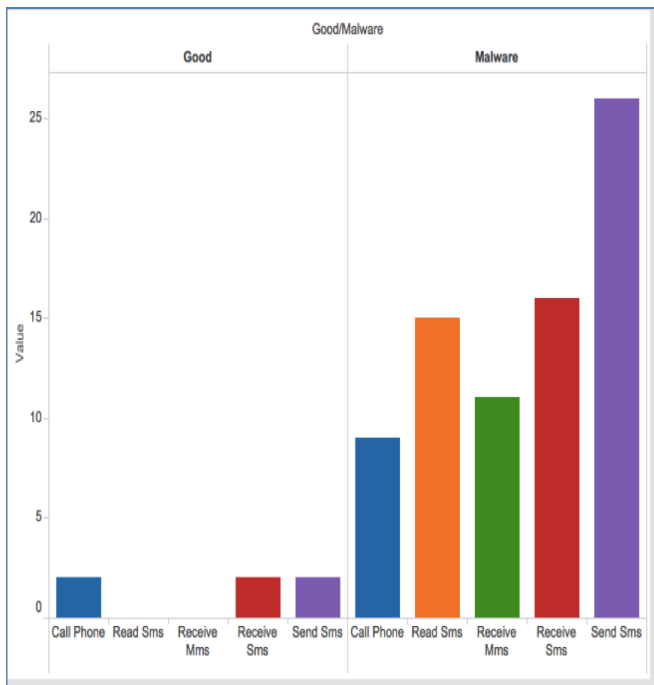
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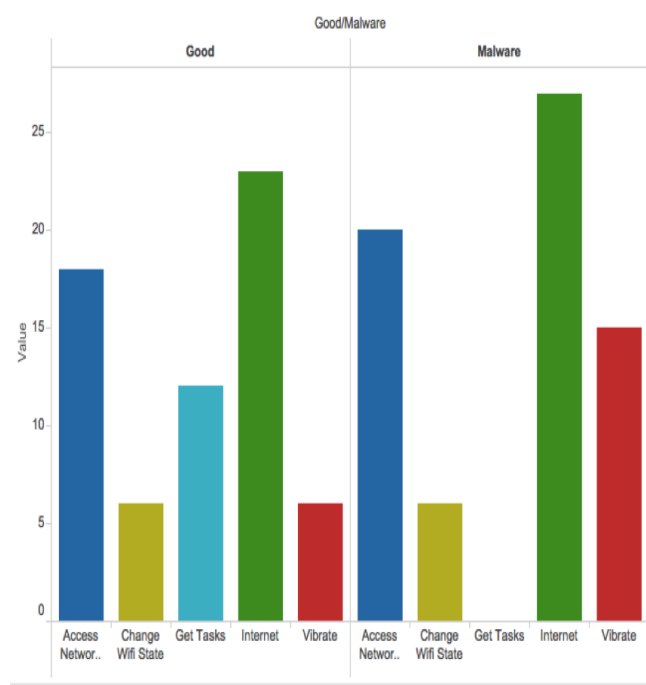
Unverified Apps



App #3: Permission-based Security Evaluation (Under development)



Analysis of Dangerous Permissions



Analysis of Non-Dangerous Permissions



Products availability

- ▶ Ready for TTP:
 - ▶ Application and library for Android system security evaluation
 - ▶ Detector of unverified applications for Android OS
- ▶ Upcoming products:
 - ▶ Detector of potentially harmful applications for Android OS
- ▶ Long term goal:
 - ▶ Generic framework for data quality and security evaluation
- ▶ Future directions:
 - ▶ Cloud service for logging, comparing security scores, extending security evaluation
 - ▶ Integrating the permission analysis of the installed applications, collusion detection, security evaluation, and potentially vulnerable application detection into one service

