Conducting Studies with Experts

Supervisors:
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About us ...

- Our research field:

Usable Security and Privacy for Developers & Administrators
Overview Topics

1. Browsing history analysis
2. Expert briefing
3. Questionnaire Usability of Security APIs
4. Eclipse Plugin Password Storage
5. Eclipse Plugin Security Pitfalls
6. Developer’s Password Storage Mental Model (FG)
7. Developer’s Password Storage Mental Model (SI)
8. Developer Password Storage Study + MM
9. Own Ideas
Topic 1: Browsing history analysis

- Conducted a developer study about secure password storage

- Collected data
  - Google search terms + time
  - Websites + time

- **Your task:** Categorise (API, Security, Java...) the browser history
  - Which category was visited most?
  - Time analysis - pattern visible?
  - How? ... Script? Own ideas?

<table>
<thead>
<tr>
<th>Participant</th>
<th>URL</th>
<th>Search term</th>
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Topic 2: Expert briefing

- Prerequisite: Attended USEC lecture successfully

Your task:

- Conduct a study about password storage
- Study Design with expert briefing

1. Condition: Newsletter/article about secure password storage/password leaks.
2. Condition: Newsletter/article about CS security.
3. Condition: Newsletter/article about CS in general.
Topic 3: **Questionnaire Usability of Security APIs**

- *Prerequisite: Attended USEC lecture successfully*
- Evaluation of usability of security APIs

**Your task**

- Literature review about existing questionnaires
- Choose existing/design an own questionnaire
- Conduct a study with crypto APIs to test different questionnaires
Topic 4: Eclipse Plugin Password Storage

- Implement eclipse plugin, which helps developers to implement secure password storage

- Developer should be warned

- Build quick fix to help
Topic 5: Eclipse Plugin Other Security Fallpits

- Implement eclipse plugin, which helps developers to avoid security fallpits e.g. Https, Encryption parameters etc.

- Developer should be warned

- Build quick fix to help
Mental Model (MM)

- Internal Model in people’s minds
- Build understanding of the world
Focus groups

- Group discussion with moderator
- Iterate and improve guideline
- Develop guideline for single interviews
Topic 6: Developer’s Password Storage Mental Model (FG)

- Prerequisite: Passed USEC lecture
- Design a study revealing the MMs of developers concerning password storage
- Use the Focus group methodology to develop a questionnaire
- Conduct your study
Topic 7: Developer’s Password Storage Mental Model (SI)

- Prerequisite: Passed USEC lecture
- Design a study revealing the MMs of developers concerning password storage
- Obtain MMs using Single Interviews
Topic 8: Developer Password Storage Study + MM

- Prerequisite: Passed USEC lecture
- Design small password storage study (language of your choice)
- Conduct the study and compare the MMs of participants before and after the study
Own ideas

- Any *own ideas* for a project in Usable Security and Privacy for Developers/ Admins?

  GREAT!

- We’d love to work with you on that!
Interested?

- If you are interested in one topic or want to present your own idea, please apply with an exposé with a short plan for the topic.

- We will select students for the topics based on their exposés.
Exposé

- Short document (max. 2 pages)
- It should include:
  
  (1) Motivations
  (2) Related work
  (3) Question(s) addressed and goals
  (4) Existing previous work if available
  (5) Planned timeline
Apply

- Please send your exposé to:
  
  naiakshi@cs.uni-bonn.de or danilova@cs.uni-bonn.de

- **Deadline for exposé: 23th April**

- On the **24 April** you will be informed whether you were chosen/not chosen for your favourite lab topic

- **Register deadline for the lab in BASIS:** 30 April
Additional Information
Topic 1 - Literature Review

- **Why Do Developers Get Password Storage Wrong? A Qualitative Usability Study** (Alena Naiakshina, Anastasia Danilova, Christian Tiefenau, Marco Herzog, Sergej Dechand, Matthew Smith)

- Find related work...
Topic 2 - Literature Review

- **Why Do Developers Get Password Storage Wrong? A Qualitative Usability Study** (Alena Naiakshina, Anastasia Danilova, Christian Tiefenau, Marco Herzog, Sergej Dechand, Matthew Smith)

- Find related work about expert briefing...
Topic 3 - Literature Review

- **A Generic Cognitive Dimensions Questionnaire to Evaluate the Usability of Security APIs.** (WIJAYARATHNA, Chamila; ARACHCHILAGE, Nalin AG; SLAY, Jill.)

- Find further related work...
Topic 4 - Literature Review

- Why Do Developers Get Password Storage Wrong? A Qualitative Usability Study (Alena Naiakshina, Anastasia Danilova, Christian Tiefenau, Marco Herzog, Sergej Dechand, Matthew Smith)

- Find related work...

• Find related work...


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