They Would do Better if They Worked Together

The Case of Interaction Problems Between Password Managers and Websites

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Have you tried using a Password Manager on the Web before?

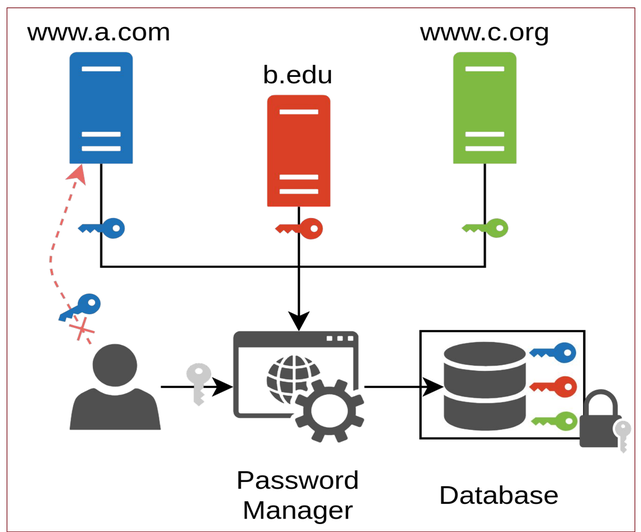


Fig 1: Password Manager workflow

Password Managers (PWMs)….

- Store passwords in database
- Generate secure passwords
- Automatically provide passwords

But they...

- Do not work with all websites
- May cause problematic interactions when failing
  (Example: PWM phishing)

We investigated PWM Interactions:

1. Analyzed 2,947 user reviews & issues
2. Created 39 minimal working examples
3. Tested 15 popular PWMs

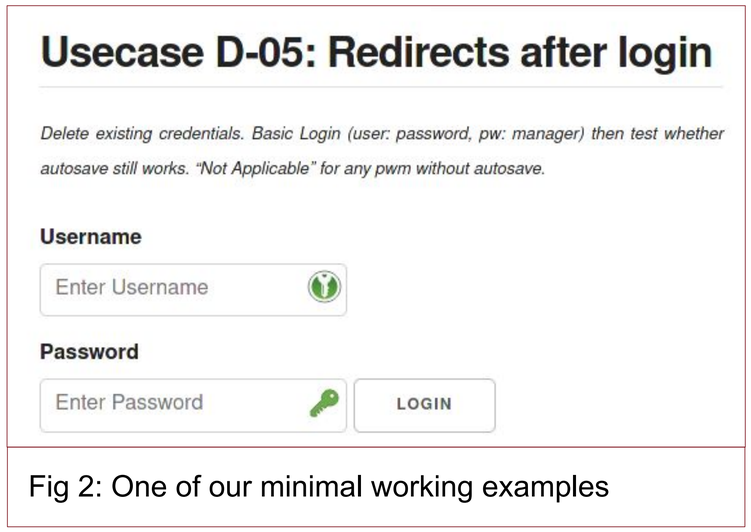
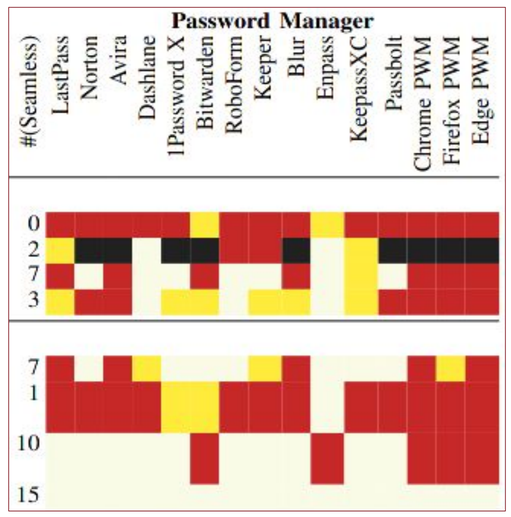


Fig 2: One of our minimal working examples

PWMs failed with many Interactions:



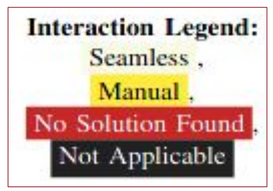


Fig 3: Selection of interactions and how they performed for password managers. Full in paper.

Problematic Interaction Examples:

- *Providing accounts across domains:* https://www.example.com vs https://auth.example.com
- *Support for input field arguments:*
  `<input name="unm" autocomplete="username" maxlength="20" />`
- *Problematic Javascript interactions:*
  Client-side "encryption", dynamic fields
- *Additional elements to address:*
  Pin inputs, firstname & lastname
- *Web standard support:*
  HTTP Basic Authentication, Interaction with non-standard forms

Replication Package:

https://s.gwdg.de/KAe4ND

- More details and all interactions
- Coding process
- Source code
- Minimal working examples