

UX 3

Problem Statement

How to integrate the results of Multiple Static Analysis Tools in a Unified User Interface?

Research Question 1

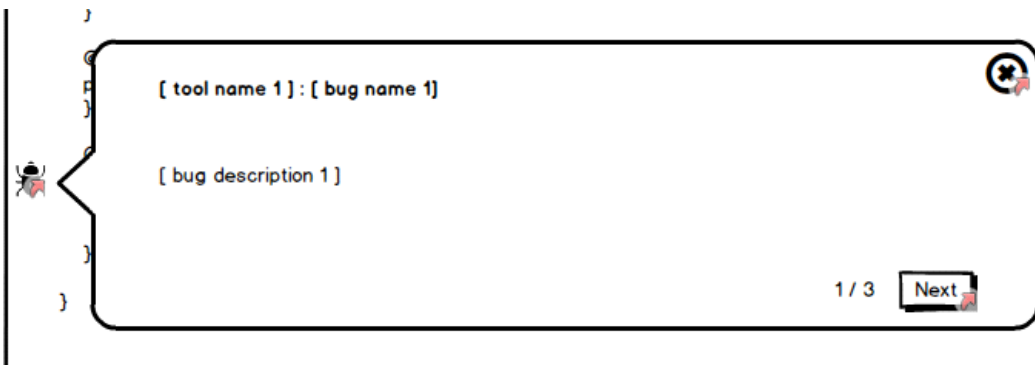
How to display the results of same code base from different analysis tools?

- Do users prefer to see all bugs at a time to one by one in context of a multiple bugs found at a line of code?

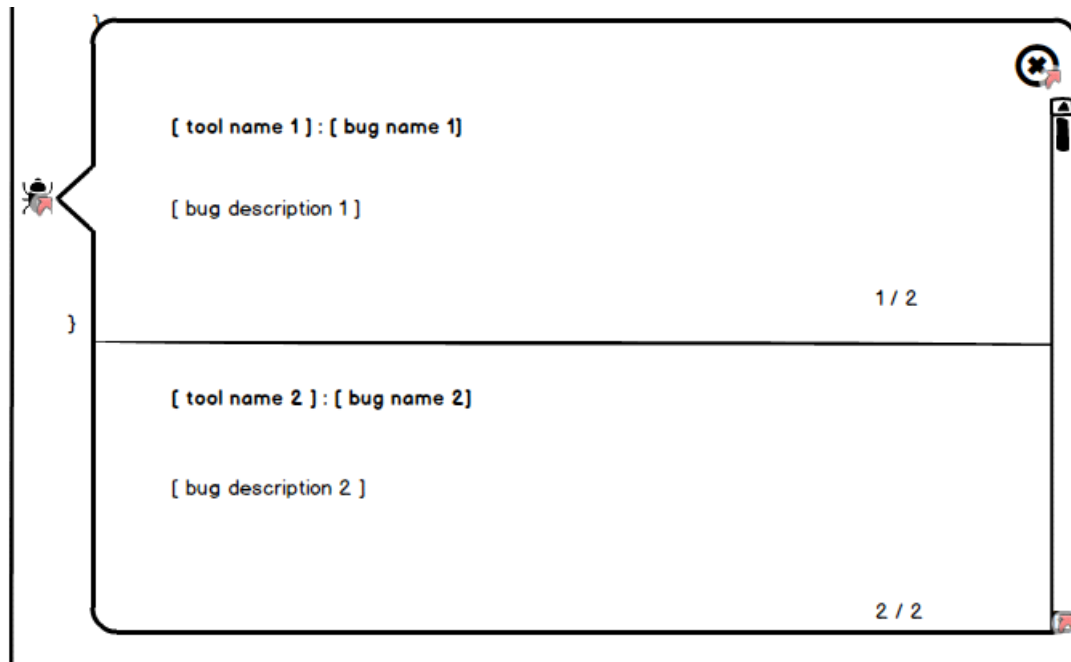
Evaluation: multiple boxes vs single box

Mockup Idea:

Example: 3 bugs identified by 3 tools



Vs



Research Question 2

What feedback works to know that bug fixing is on-going?

Example tools considered for WEB, IDE and CLI based are SonarQube, SonarLint and ESLint respectively. The 5 feedbacks which we investigated are animated icon, progress bar, status pending popup, status spinner, alert box.

Evaluation: our 5 feedback ideas with existing tools

Qualitative analysis:

- Do users prefer alert box feedback when bug fix is failed which is absent in existing tools?
- Which tool based i.e., WEB, IDE, CLI are used in general by the users and Why?
- Do users ever try to use different tool based?

If no, why?

If yes, why? And what challenges did they face while using tools separately?

[Crosscheck whether our UI address those challenges and if not, open them for improvisation]

Quantitative analysis:

- How do users rate for our MSAT-UI and SonarQube UI in context of [feedback 1..5]?
 - How do users rate for our MSAT-UI and SonarLint UI in context of [feedback 1..5]?
 - How do users rate for our MSAT-UI and ESLint UI in context of [feedback 1..5]?
- [Rating: 0 (no such feature, worst) to 10 (best)]

Research Question 3

How to carry traceability of bug fixing?

- Do users be able to keep up in state of workflow as tools scale?

[Aspects considered: bigger warnings - more lines of code changed,
more tools - more types of bugs identified by more tools,
more warning impact: code changes in related files]

Evaluation: 2 tools vs 5 tools

Mockup Idea:

Example:

- mutiple changes are color coded for ease of user recognition in context of bigger warnings

