Problem Statement

Current bug tracking systems are not able to effectively support the construction of reports for GUI-based mobile applications with actionable information that directly lead to a bug’s resolution.

Goal: Create a bug reporting mechanism/framework that leverages program analysis techniques to help reporters capture actionable information about a bug by autocompleting the reproduction steps, thus facilitating the creation of detailed, expressive bug reports.

Traditional Bug Reporting Systems

- There is an inherent *lexical gap* that exists between typical reporters of bugs and developers.
- Issue trackers and app reviews facilitate only natural language descriptions.
- In-field failure reproduction techniques require instrumentation.
- Developers consider: *(i)* steps to reproduce, *(ii)* stack traces, and *(iii)* test cases/scenarios the most helpful information in bug reports [1].

References


Enhancing Android Application Bug Reporting

Kevin Moran
Advisor: Denys Poshyvanyk
Department of Computer Science
The College of William and Mary
kpmoran@cs.wm.edu

FUSION Report Structure

- In a study conducted on 15 bugs from 14 open source Android apps, FUSION effectively facilitates bug reporting and generates reports that are more reproducible than traditional issue-tracking systems.

Research Agenda

- Automatic reporting of crashes uncovered during systematic execution
- Applying FUSION-style reports towards fault-localization
- FUSION in reporter-developer issue comment threads

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