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On the Distribution of "Simple Stupid Bugs" in Unit Test Files: An Exploratory Study

Anthony Peruma and Christian D. Newman

https://scanl.org

RIT | Rochester Institute of Technology

Explore the quality of test suites from a **functional and non-functional** perspective

Extent of SStuBs occurring in **(non-) test files**
Co-occurrence of **test smells and SStuB** fixes

IMPACT

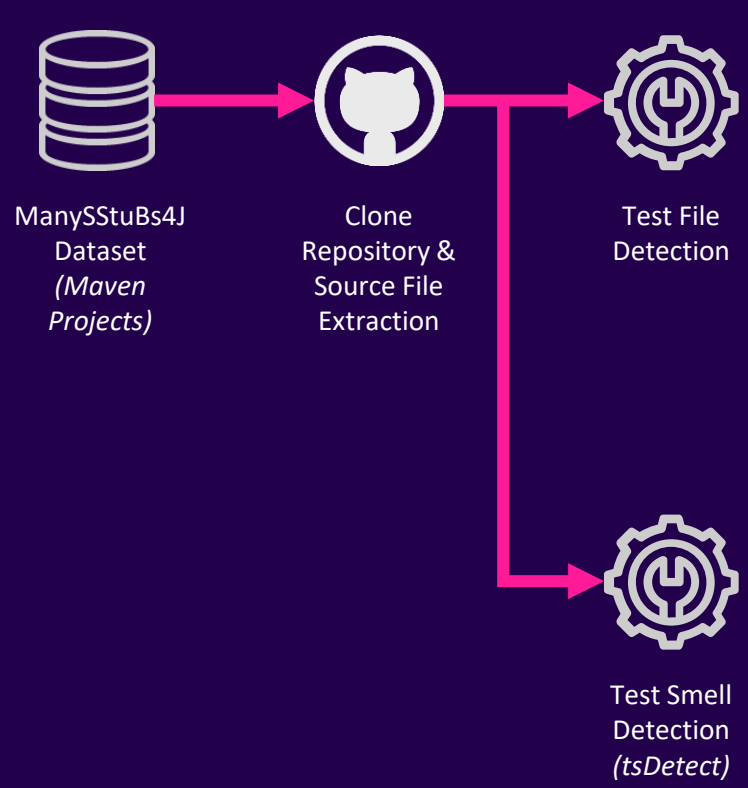
CONTRIBUTION

GOAL

RESEARCH QUESTIONS

Provide developers and tool vendors with insight to **better maintain test suites**

Dataset and **discussion** of test smells and SStuBs in test files



- Total volume of Java files with SStuBs: 5,587
- Distribution of SStuBs in file types:
  19% test & **81%** non-test
- Test files: Specific *relationships* between code and the bug fix:
  assertion statements
  time-related identifiers
  mocking identifiers

- Test smells **occur in most** SStuBs fix test files
- Frequently occurring test smell types:
  Assertion Roulette
  Exception Handling
- **Change Numeric Literal** SStuBs frequently occur in smelly test files
- **Test smells are rarely fixed** when fixing SStuBs

Conclusion & Takeaways

- The **quality of test code** is as important as the quality of production code
- Opens the door for **potential future work**
  Do developers **proactively** address issues in test files?

Potential Code Quality Tools:

- **Automatic identification of issues in test files** based on SStuB fixes to non-test files
- Highlight **areas of concern based on relationships** between SStuBs and code behavior