A Poor Man's Approach to Technical Debt

Summary

This thesis develops a new concept and algorithm of computing technical debt based on project management data. The thesis applies the concept and algorithm to project management data from a large software vendor. We investigate the validity of this approach to technical debt using management feedback. We also investigate the value of technical debt as feedback metric for steering software projects.

Work Results

- Literature review
  - Technical debt definitions, use cases
  - Related steering feedback metrics on resource allocation decisions
- Research approach
  - Construction of a mathematical definition of technical debt using project management data
    - bugs and bug history incl. estimated and real effort, severity
    - features and feature history incl. estimated and real effort, pirority
    - correlation/proxy for "refactoring" (paying of tech debt) vs. "new features"
  - External validation through management feedback
  - Internal validation through sanity checks
- Research results
  - Definition of technical debt using project management data
  - Analysis of situation in given case at hand
  - Validation of definitions

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