A Research Practical

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Inspiration

"clear thinking can emerge from clear writing" – Scott Montgomery

Idea One

One outcome of Coverage Criteria is the ability to generate tests which meet the criteria, or so the theory goes.

- Questions:
  - Do such tools currently exist?
  - If they do exist, how effective are they?
    - Do they generate the entire test, or only a skeleton?
    - Is there room for improvement of these tools?
    - How well do they actually meet the coverage criteria?
- Empirical Methods
  - Case Study comparing multiple tools used on Java/C++/C# open source projects (selected using a rigorously defined selection criteria)
  - Controlled Experiment evaluating the quality of the tests generated
  - Single-Case Mechanism Experiment concerning a single tool and a feature improving its capability

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Idea Two

A serious issue in scientific software engineering is the fact that there is a lack of test oracles, as the scientific answers may not yet be known. To address this we have developed techniques such as metamorphic testing. Several research papers have been produced on this subject, but very few have been replicated.

- Replication Studies are a foundation of Good Science
  - Research (even published research) is nothing until it has been replicated

- Thought would be to take a current paper in this area (or similar) and
  - Conduct a replication of their study on a new source of data

- Question: What does this entail?

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Are there any questions?

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