



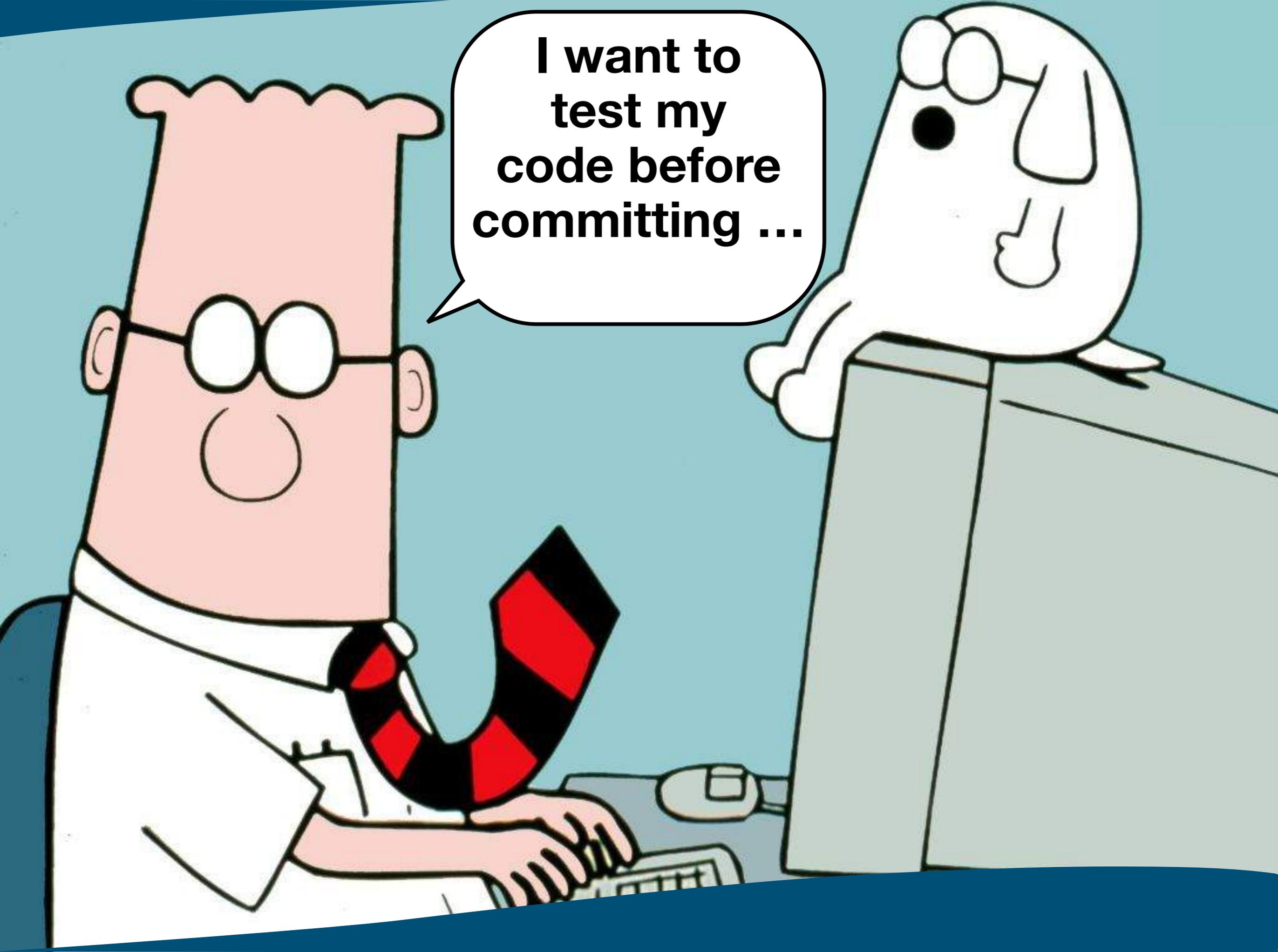
Change-based Test Selection in the Presence of Developer Tests

Presenter: Quinten David Soetens



Change-based Test Selection in the Presence of Developer Tests
Quinten David Soetens, Serge Demeyer and Andy Zaidman
Proceedings of 13th European Conference on Software
Maintenance and Reengineering (CSMR13)





**I want to
test my
code before
committing ...**



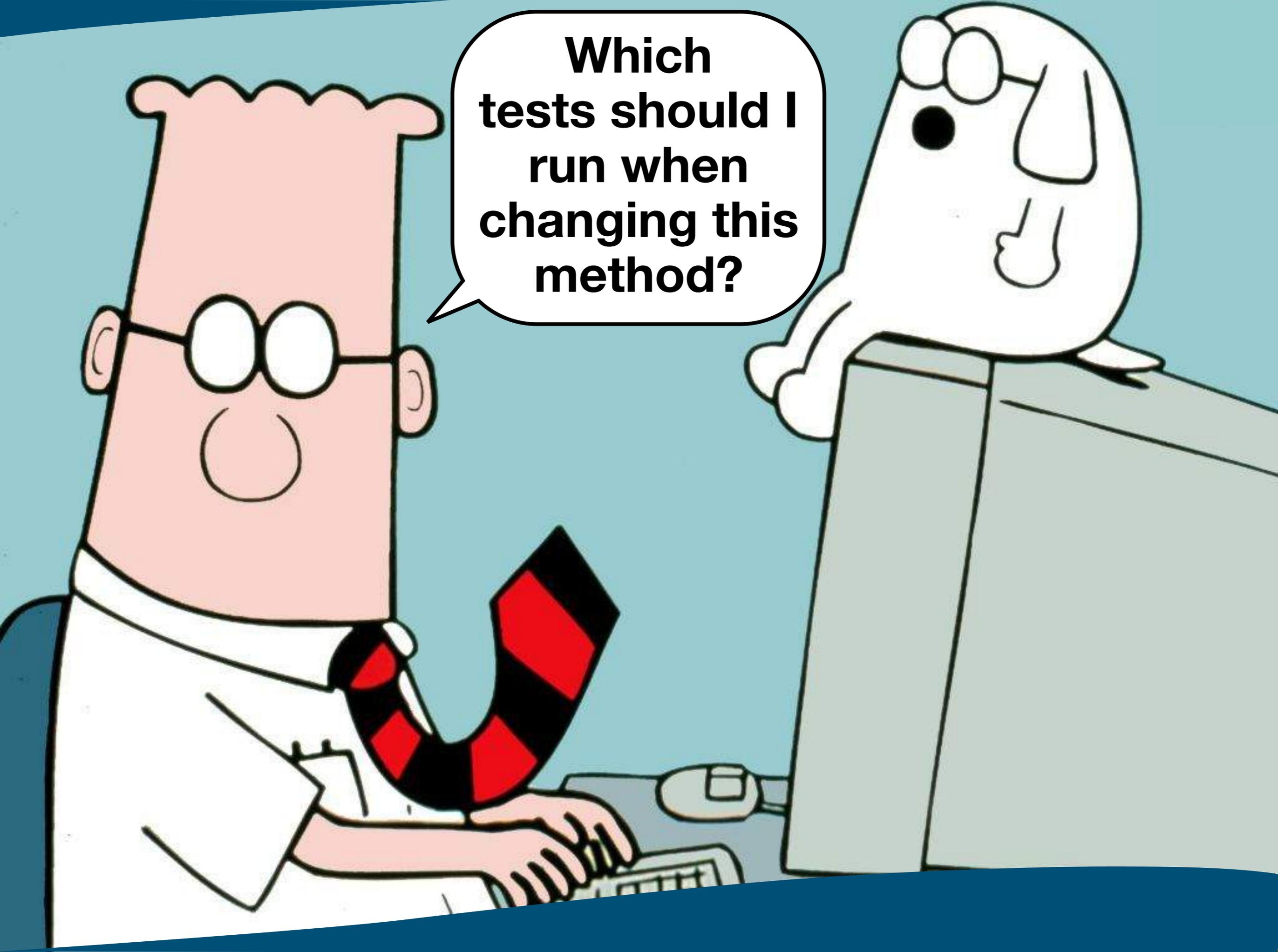
Test Suites Grow



Take Hours to Run

Run Tests in Parallel

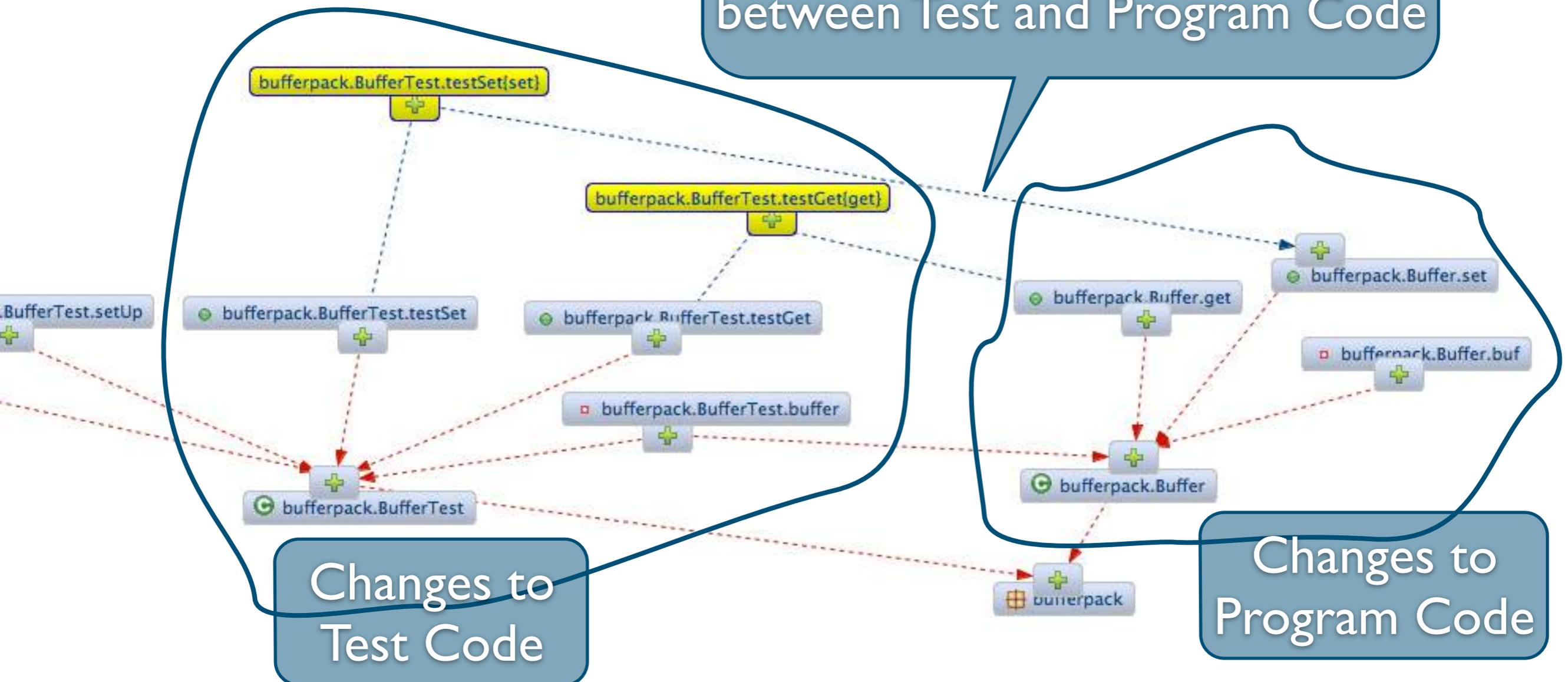


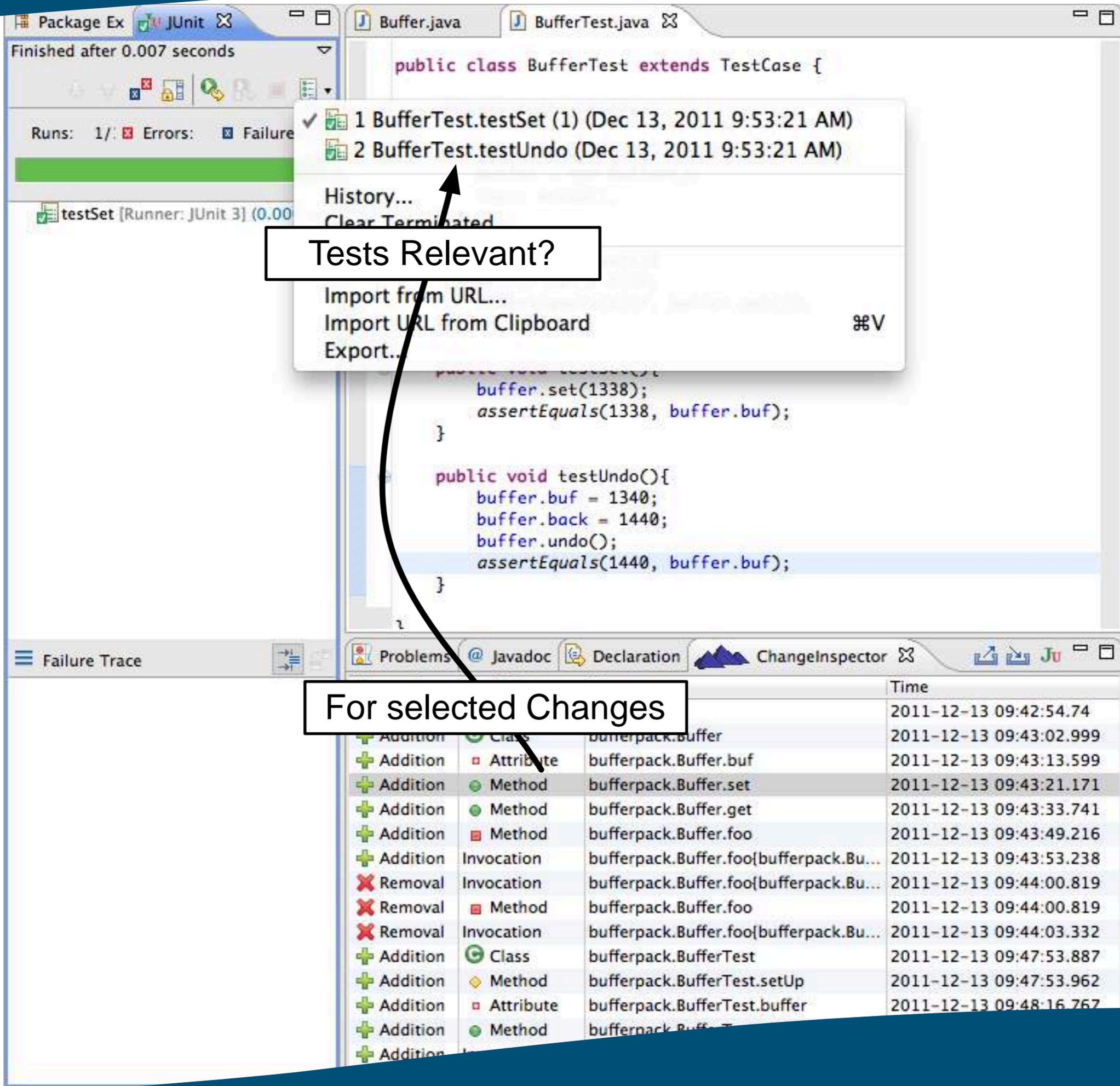


**Which
tests should I
run when
changing this
method?**

First-class Change Objects

Traceability via Dependencies between Test and Program Code





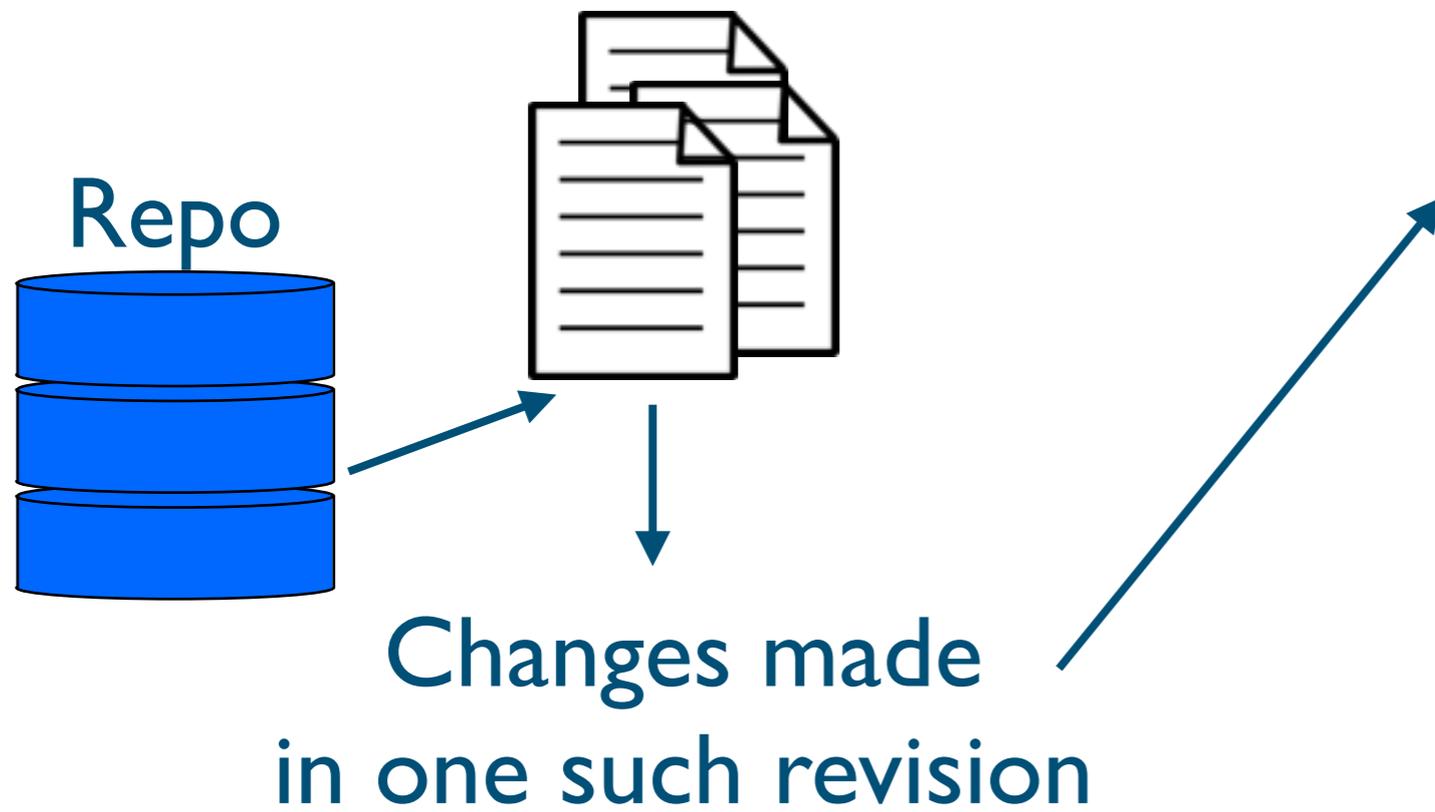
Tests Relevant?

For selected Changes

Experimental Setup

Revisions with failing tests

Subset of tests relevant for changes



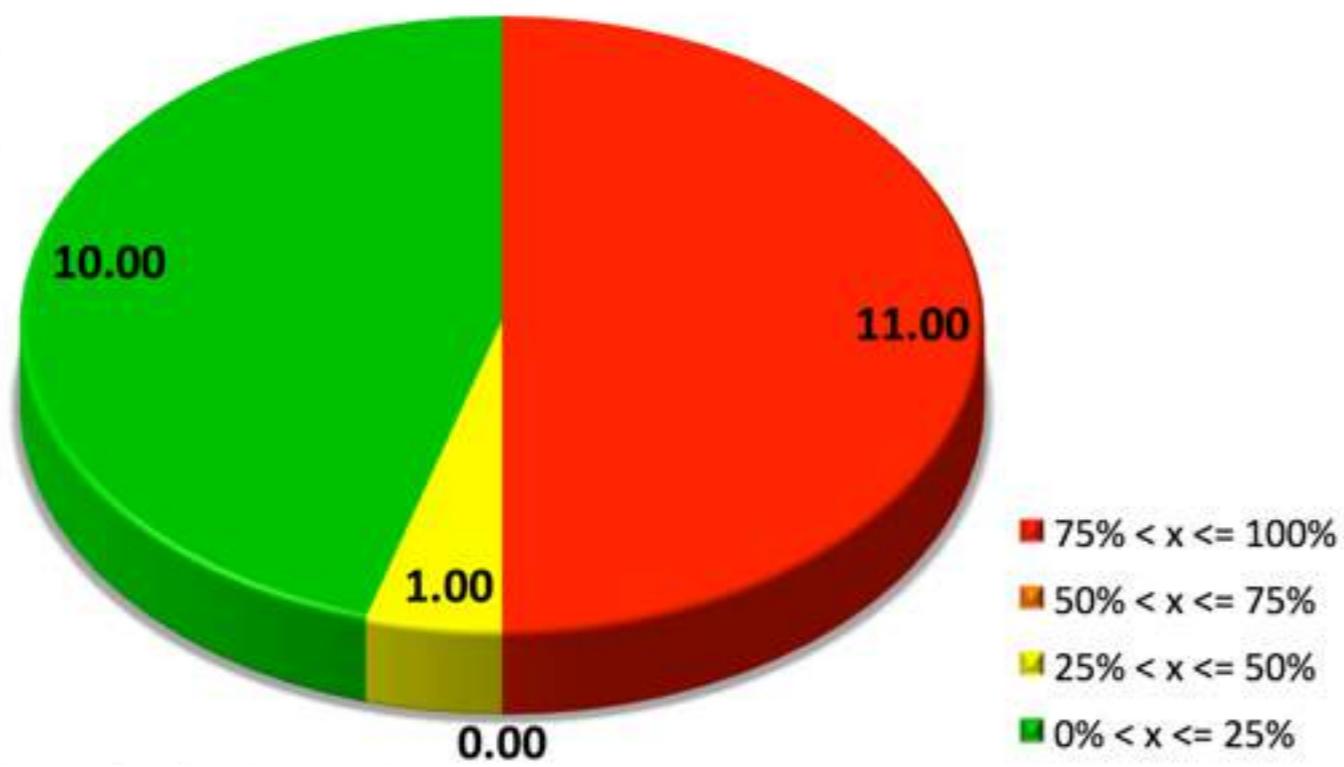
Size of Reduced Test Suite?

Failing tests in reduced test suite?



Industrial Case

Size of Reduced Test Suite?



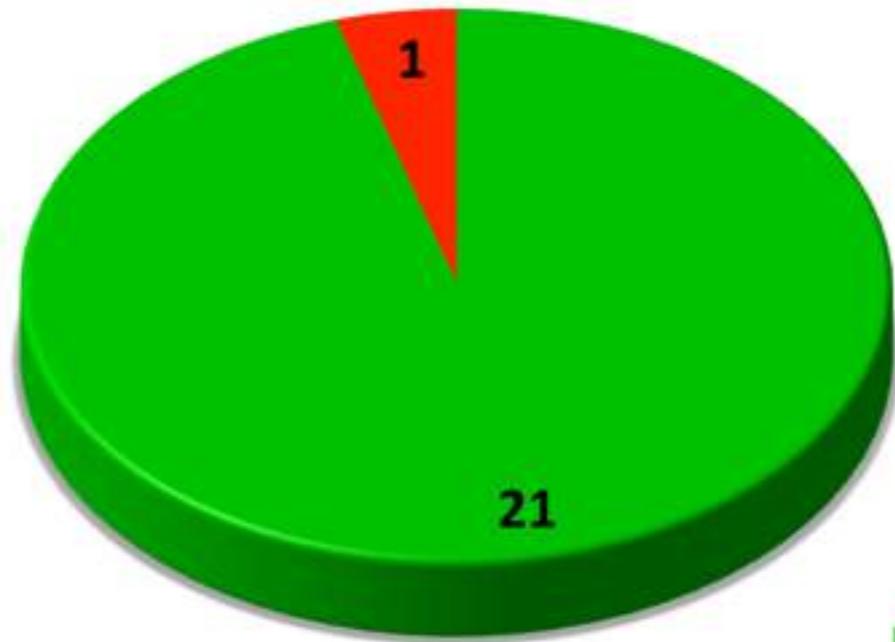
Dynamic Binding taken into account



Dynamic Binding NOT taken into account



Industrial Case



- All failing tests found
- Not all failing tests found

Failing tests in reduced test suite?

Dynamic Binding taken into account



Dynamic Binding NOT taken into account

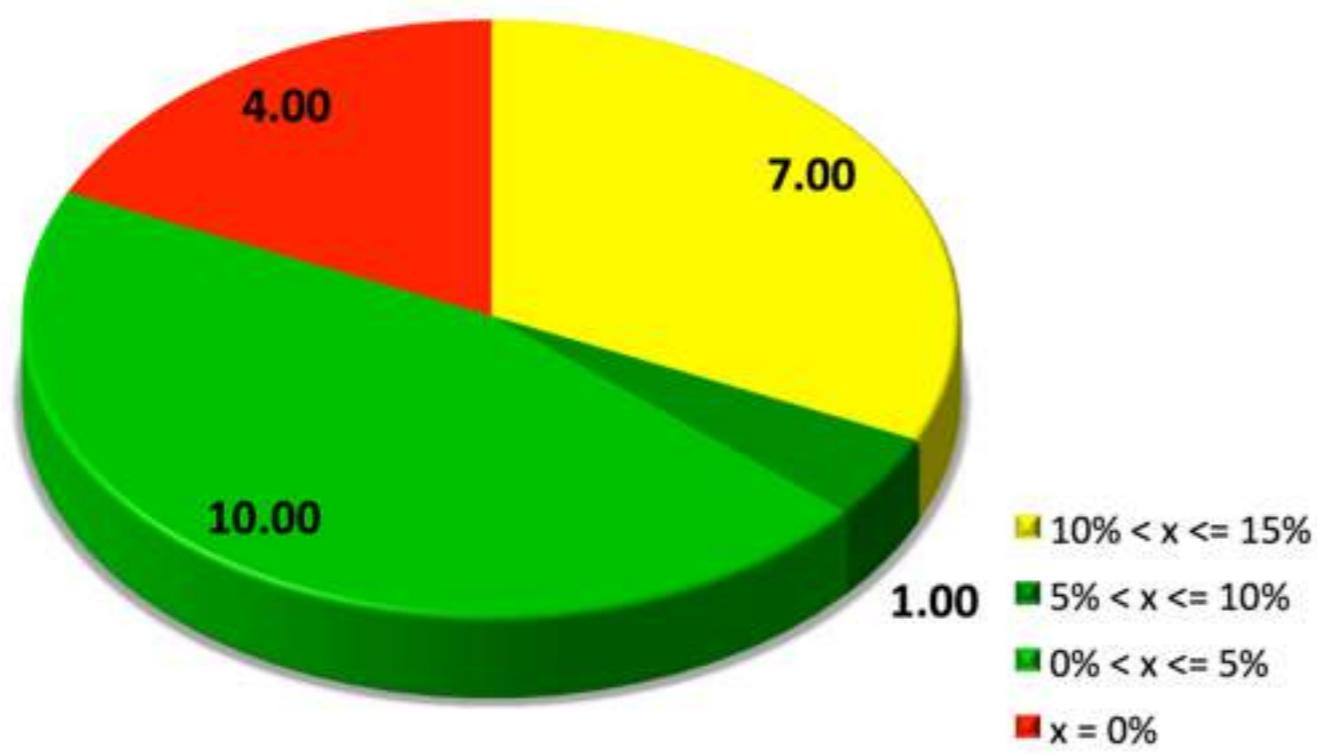


agentschap

Wegen en Verkeer

Industrial Case

Size of Reduced Test Suite?



Dynamic Binding taken into account

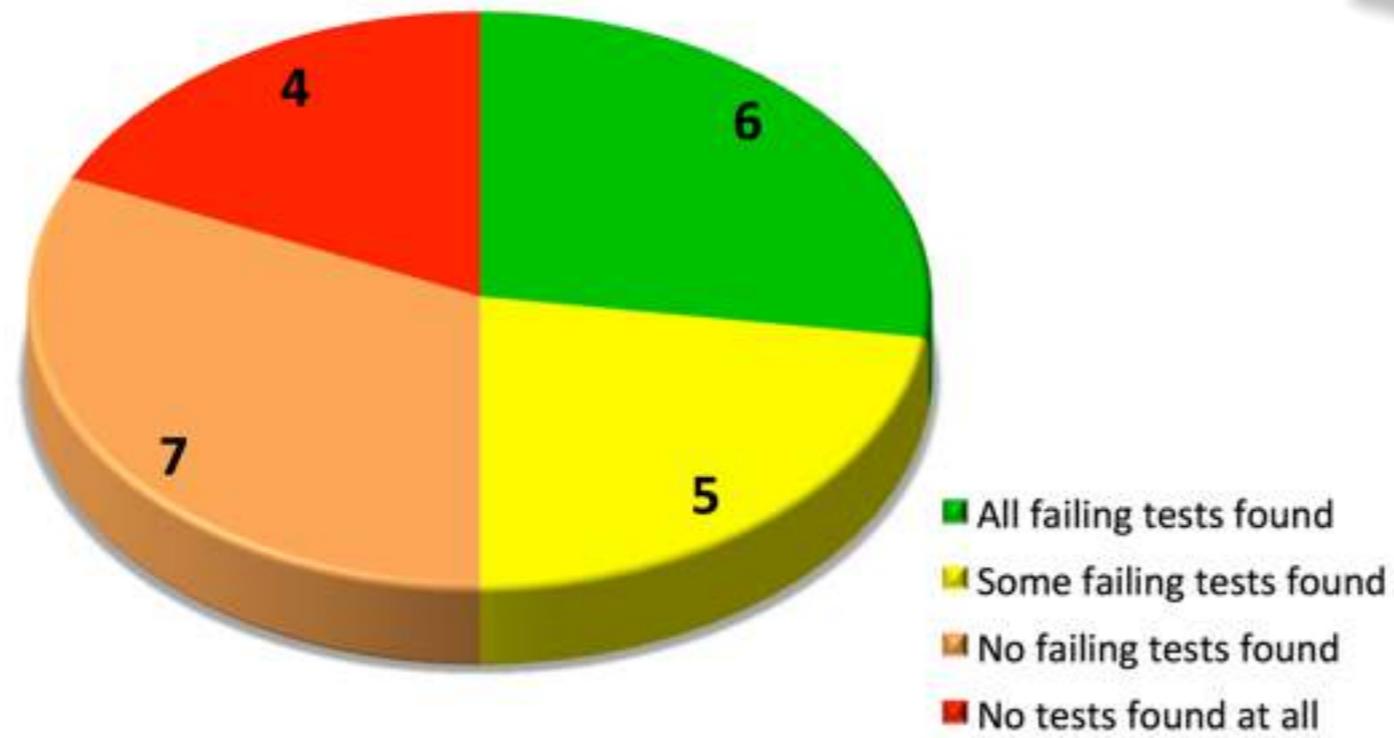


Dynamic Binding NOT taken into account



Industrial Case

Failing tests in reduced test suite?



Dynamic Binding taken into account



Dynamic Binding NOT taken into account





Test Suites Grow



A cartoon illustration featuring a man on the left and a ghost-like character on the right. The man has a tall, rectangular head, wears glasses, a white shirt, and a red and black striped tie. He is sitting at a desk, typing on a keyboard. A speech bubble above him contains the text "I am more confident in my changes!". The ghost-like character is white, has a large black eye, and is perched on the edge of the desk, looking towards the man. The background is a solid light blue color.

**I am
more
confident in
my changes!**