

Code Quality: Code Coverage

What's code coverage?

- A quick feedback from tests — whether the code that was working earlier still works after we've made some change — is imperative.
 - For this, we need a fairly good amount of test on the code.
- We'd like a lot of automated tests — **automated verifications** — but that doesn't mean that we don't need any manual testing.
 - If everything we do is either entirely automated or entirely manual, it can be quite risky. There should be a good balance.
 - Manual testing has enormous benefits, but we cannot perform *only* manual testing.
 - Manual testing can be for some gnarly area, some usage, usability, performance in some niche area, etc.
 - A code in production that never got exercised through any form of tests is a big risk.
- There should be a 100% code coverage, but not from unit tests.
 - Crazy to expect a 100% code coverage from a particular type of test.
 - Bring automated unit testing, automated function testing, and manual testing and collect the code coverage from all of them put together. This code coverage number should be as high as possible (100%, if possible).
 - With TDD, you get 100% coverage anyway.
- A low code coverage can be indicative of area of problem that requires investigation.
 - It means poor code quality or code that needs refactoring.
- Code coverage number can be an indicator of a problem area that needs investigation.

What's a good coverage number?

- We don't need a 100% coverage in one area of tests because that is naive and impractical.
- As close to 100% as possible, when considering all the tests (automated, manual) combined.
- **High coverage number doesn't mean that everything's good, but a low coverage number does indicate that there's some problem.**

Is this really useful?

- It draws you to a problem areas or smelly areas, which could potentially (not necessarily) require refactoring, which could increase the coverage.

Why care about it?

- A poor code coverage often leads to a poor quality code. So you often want to look at the code coverage as one of the metrics to check code quality.