Engineer Software

Held the generator to 981 tests and 92% coverage

Held the generator to 981 test cases at a 92% branch-coverage floor with warnings treated as failures, and asserted idempotence by running the whole build pipeline twice from an empty file and requiring the second pass to change nothing.

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981

test cases, at a 92% branch-coverage floor

Situation. A generator that assembles a database from scratch has a particular kind of bug: it works the first time and corrupts the second. Steps that insert without checking, steps that depend on the order of a previous step's output, steps that are safe alone and not together. None of that shows up in a test that starts from nothing and runs once.

Task. The build had to be proved repeatable rather than merely working, and the test suite had to be large enough and strict enough that a regression could not pass through it quietly.

Action. The idempotence test is the blunt one and the most useful: build the entire database from an empty file, snapshot it, run the whole nineteen-step pipeline again over the result, and require the second pass to change nothing. Row counts, contents and identifiers all have to match. Around it sit 383 test functions — 981 cases once the parameterised ones expand — across forty-five files and 7,944 lines, covering the pipeline, the renderers, the content loaders, the targeting logic and the checkers. Branch coverage carries a floor of ninety-two percent enforced in the build rather than reported in a summary, and the suite currently measures about 95 percent, so the floor has headroom without being decorative. Warnings are configured as failures, which is the setting that matters most in practice — a deprecation notice that prints for two years is a deprecation notice nobody reads, and the run that turns it into a red test is the run that gets it fixed.

Result. The pipeline can be re-run against a live database without fear, which is what makes incremental content work possible at all. The floor is a floor, not a target, and it is worth saying that ninety-two percent branch coverage still leaves branches nothing has ever taken — the number bounds the risk, it does not remove it, and two of the defects found later in the project were in code the coverage report showed as covered.

Bring this experience to your project

Use “Held the generator to 981 tests and 92% coverage” as a starting point for a similar challenge in your organisation. The services behind this work are available for your project. The part users never see: where the data lives, what the rules are, and how other systems are allowed to talk to it.

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Look behind the result

Read the situation, decisions and result in this example. We can discuss which parts transfer to your constraints and which need another approach. Held the generator to 981 tests and 92% coverage — 981 test cases, at a 92% branch-coverage floor

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Want tests that fail before your customers do?

Talk through your project with the engineer responsible for delivery. We agree the scope, price basis and handover in writing before work begins.

Role context: Python Engineer. It draws on Databases, DevOps, Automation & CI/CD, Reliability & Backups, Testing & QA and Python. And while you are here, we are rather good at Backend & API Development, DevOps & CI/CD Automation and Technical Leadership & Consulting.

Get in touch Explore our services

One piece of **a longer record** — and it is all on this site.

Every entry is written the same way: the situation, the task, what we did and what changed.

See the whole record

Define the improvement you need

Describe the workflow, the existing interfaces and the users who need the change. We can define a testable delivery and a handover that lets your team maintain it.

See what it costs Get in touch →

Want tests that fail before your customers do?

Ask about the decisions behind “Held the generator to 981 tests and 92% coverage”. You will speak with the people who can explain the work and assess your own project.

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