

## QuickCheck for Erlang Users

This course spans two-and-a-half days, during which participants will use all the important features of QuickCheck, building up to a realistic example of testing a banking server. The course ends at lunch-time on the third day, leaving participants with time to travel home in the afternoon. Since QuickCheck builds on Erlang, we take advantage of participants' prior knowledge to introduce QuickCheck more quickly. Needless to say, participants should be familiar with Erlang, and use it frequently.

### ... Day 1

#### Properties and generators

Introduces the basic elements of a QuickCheck specification: test data generators, and the properties that use them. Shows how to run tests, and collect statistics on the results. QuickCheck's rich API for constructing generators is described.

#### Symbolic Test Cases

In many cases QuickCheck test cases are symbolic: this module teaches how to construct and use symbolic test cases--and how to know when to do so.

#### Positive and Negative Testing

Testing usually starts with positive cases; this module teaches participants to build negative QuickCheck testing on top of positive testing, reusing the work already done. Covers QuickCheck's fault injection API.

### ... Day 2

#### Testing Stateful Systems

Introduces QuickCheck's state machine formalism, which allows operations to be specified in terms of state transitions, and pre- and post-conditions, then finds minimal sequences that violate the spec. Takes the Erlang process registry as an example.

#### Minimizing counterexamples

The usefulness of a failing test case is inversely proportional to its size and complexity. This module discusses methods to find as small failing test cases as possible, and teaches how to configure QuickCheck's simplification strategy to best effect.

### ... Day 3

#### Protocol Testing

QuickCheck is often used to test protocols. This module discusses protocol testing using QuickCheck state machines, and includes an extended example of testing a bank server.

### ... Contact

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