



COM 3529

SOFTWARE TESTING & ANALYSIS

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5.1 Random Testing

Property-Based Testing

Tester specifies properties that should **always** hold for the software under test.

These properties are different from assertions in JUnit – JUnit assertions only need to hold for specific inputs. Properties in Property-Based Testing need to hold for **all** inputs

Examples: [QuickCheck](#) (Haskell), [jqwik](#) (Java), [Hypothesis](#) (Python)



Fuzzing

Targeted at automatically crashing a program

Exposing security issues, like buffer overflows



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The goal of this project is to evaluate the robustness of various UNIX utility programs, given an unpredictable input stream. ... First, you will build a fuzz generator. This is a program that will output a random character stream. Second, you will take the fuzz generator and use it to attack as many utilities as possible, with the goal of trying to break them...

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